102nd Annual Report

2015

BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

102nd Annual Report

2015

Board of Governors of the Federal Reserve System

2015 Annual Report Errata

On p. 398, in table 9, the first sentence of footnote 1 was printed incorrectly and has been revised to read "1. Includes salaries, other personnel expense, and retirement and other employment benefit expenses." (08/09/16)

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Letter of Transmittal

Board of Governors of the Federal Reserve System
Washington, D.C.

May 2016

The Speaker of the House of Representatives:

Pursuant to the requirements of section 10 of the Federal Reserve Act, I am pleased to submit the 102nd annual report of the Board of Governors of the Federal Reserve System.

This report covers operations of the Board during calendar-year 2015.

Sincerely,

Janet L. Yellen
Chair

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1 Overview

The Federal Reserve, the central bank of the United States, is a federal system composed of a central governmental agency—the Board of Governors—and 12 regional Federal Reserve Banks.

The Board of Governors, located in Washington, D.C., consists of seven members appointed by the President of the United States and supported by a 2,825-person staff. Besides conducting research, analysis, and policymaking related to domestic and international financial and economic matters, the Board plays a major role in the supervision and regulation of U.S. financial institutions and activities, has broad oversight responsibility for the nation's payments system and the operations and activities of the Federal Reserve Banks, and plays an important role in promoting consumer protection, fair lending, and community development.

For More Background on Board Operations

For more information about the Federal Reserve Board and the Federal Reserve System, visit the Board's website at www.federalreserve.gov/aboutthefed/default.htm. An online version of this annual report is available at www.federalreserve.gov/publications/annual-report/default.htm.

About This Report

This report covers Board and System operations and activities during calendar-year 2015. The report includes the following sections:

- **Monetary policy and economic developments.** Section 2 provides adapted versions of the Board's semiannual monetary policy reports to Congress.
- **Federal Reserve operations.** Section 3 provides a summary of Board and System activities in the areas of financial stability policy and research; section 4, in supervision and regulation; section 5, in consumer and community affairs; and section 6, in Reserve Bank operations.
- **Dodd-Frank Act implementation and other requirements.** Section 7 summarizes the Board's efforts in 2015 to implement provisions of the Dodd-Frank Wall Street Reform and Consumer Protection Act as well as the Board's compliance with the Government Performance and Results Act of 1993.
- **Policy actions and litigation.** Section 8 and section 9 provide accounts of policy actions taken by the Board in 2015, including new or amended rules and regulations and other actions as well as the deliberations and decisions of the Federal Open Market Committee (FOMC); section 10 summarizes litigation involving the Board.
- **Statistical tables.** Section 11 includes 14 statistical tables that provide updated historical data concerning Board and System operations and activities.
- **Federal Reserve System audits.** Section 12 provides detailed information on the several levels of audit and review conducted in regards to System operations and activities, including those provided by outside auditors and the Board's Office of Inspector General.
- **Federal Reserve System budgets.** Section 13 presents information on the 2015 budget performance of the Board and Reserve Banks, as well as their 2015 budgets, budgeting processes, and trends in their expenses and employment.
- **Federal Reserve System organization.** Section 14 provides listings of key officials at the Board and in the Federal Reserve System, including the Board of

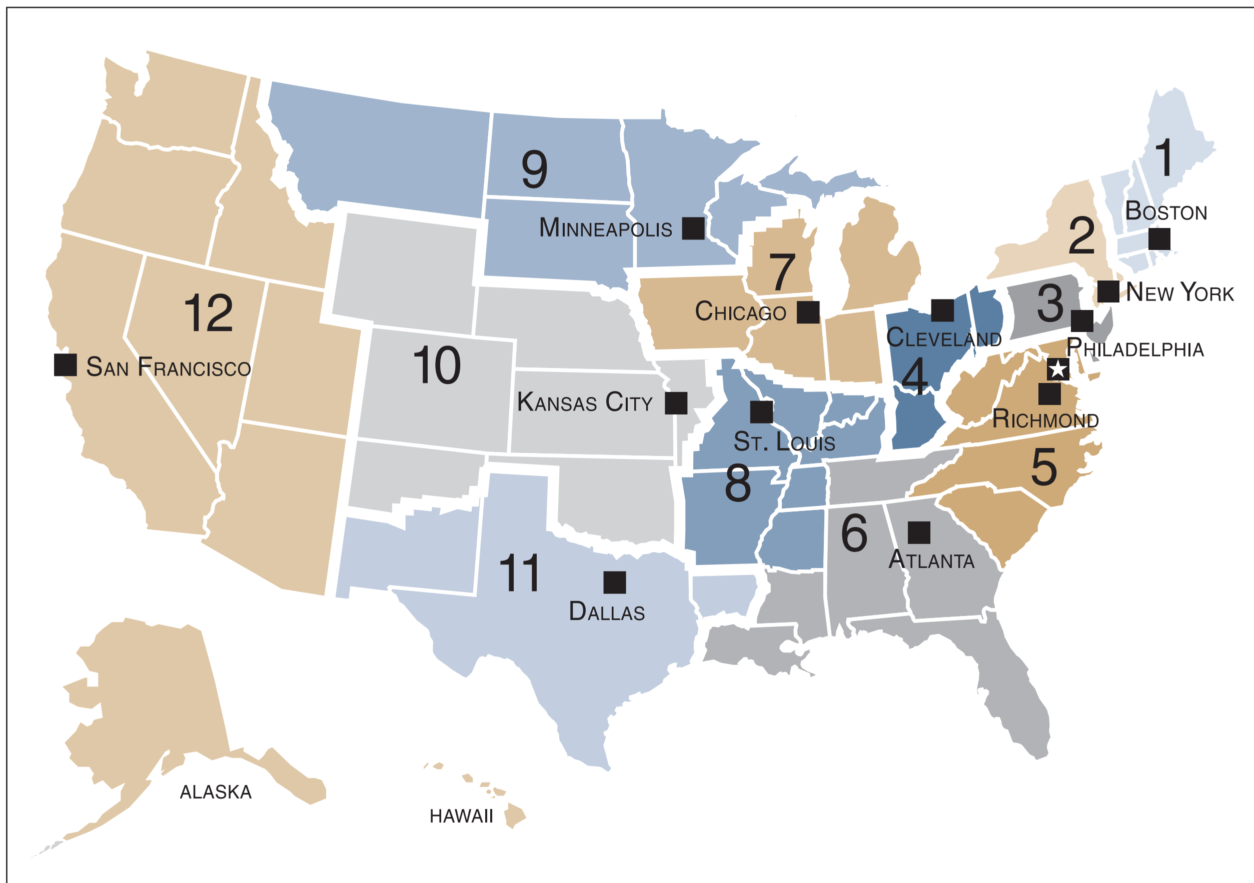
Governors, its officers, FOMC members, several System councils, and Federal Reserve Bank and Branch officers and directors.

About the Federal Reserve System

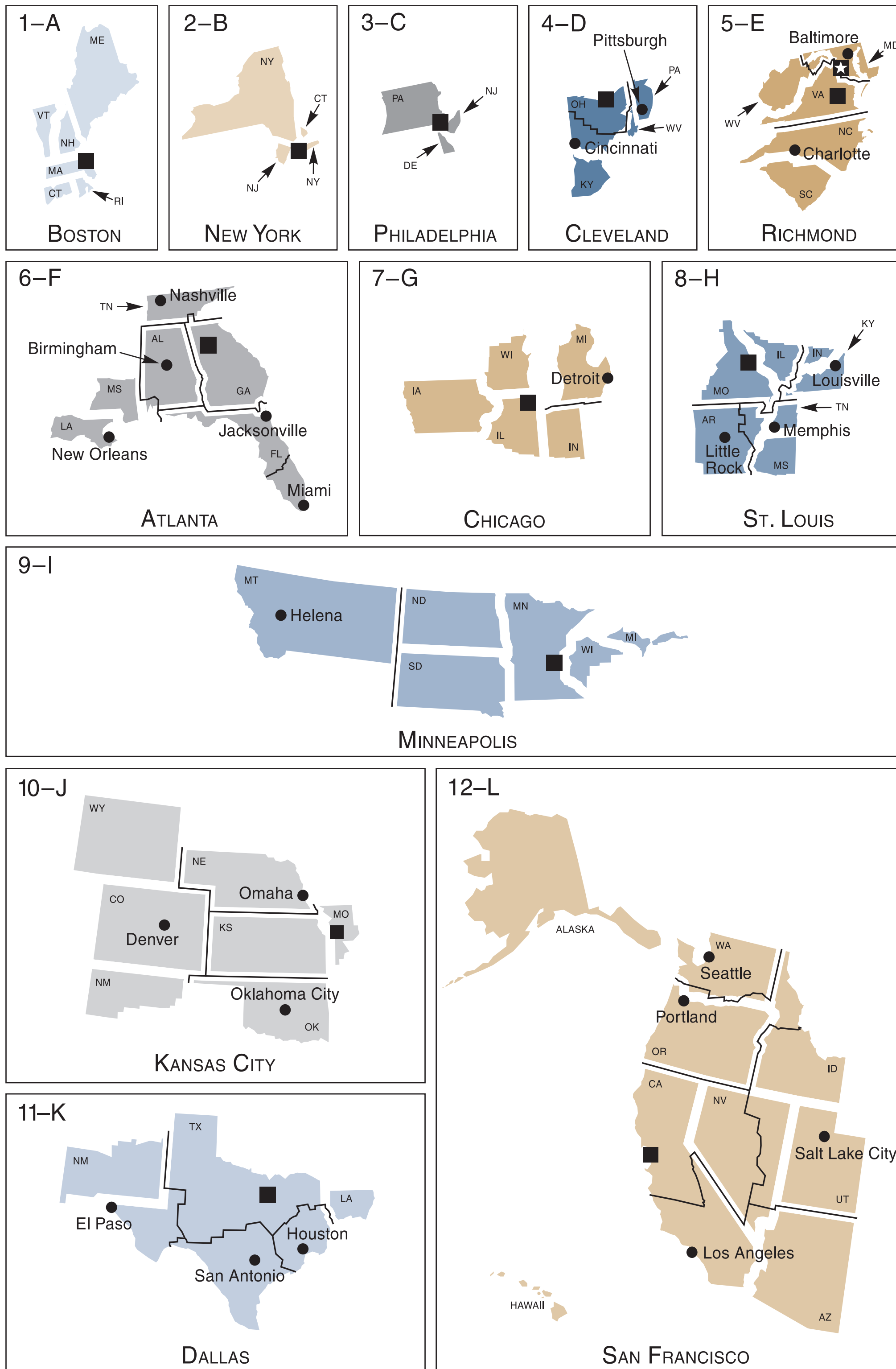
The Federal Reserve System, which serves as the nation's central bank, was created by an act of Congress on December 23, 1913. The System consists of a seven-member Board of Governors with headquarters in Washington, D.C., and the 12 Reserve Banks located in major cities throughout the United States.

The Federal Reserve Banks are the operating arms of the central banking system, carrying out a variety of System functions, including operating a nationwide payment system; distributing the nation's currency and coin; under authority delegated by the Board of Governors, supervising and regulating a variety of financial institutions and activities; serving as fiscal agents of the U.S. Treasury; and providing a variety of financial services for the Treasury, other government agencies, and other fiscal principals.

The following maps identify Federal Reserve Districts by their official number, city, and letter designation.



■ Federal Reserve Bank city
☆ Board of Governors of the Federal Reserve System, Washington, D.C.



■ Federal Reserve Bank city
● Federal Reserve Branch city
✪ Board of Governors of the Federal Reserve System, Washington, D.C.
— Branch boundary

2 Monetary Policy and Economic Developments

As required by section 2B of the Federal Reserve Act, the Federal Reserve Board submits written reports to the Congress that contain discussions of "the conduct of monetary policy and economic developments and prospects for the future." The *Monetary Policy Report,* submitted semiannually to the Senate Committee on Banking, Housing, and Urban Affairs and to the House Committee on Banking and Financial Services, is delivered concurrently with testimony from the Federal Reserve Board Chair.

The following discussion is a review of U.S. monetary policy and economic developments in 2015, excerpted from the *Monetary Policy Report* published in February 2016 and July 2015. Those complete reports are available on the Board's website at www.federalreserve.gov/monetarypolicy/files/20160210_mprfullreport.pdf (February 2016) and www.federalreserve.gov/monetarypolicy/files/20150715_mprfullreport.pdf (July 2015).

Other materials in this annual report related to the conduct of monetary policy can be found in section 9, "Minutes of Federal Open Market Committee Meetings," and section 11, "Statistical Tables" (see tables 1–4).

Monetary Policy Report February 2016

Summary

Labor market conditions continued to improve during the second half of 2015 and into early 2016. Payroll employment has increased at a solid average pace of 225,000 per month since June. The unemployment rate, which had reached a high of 10 percent in late 2009, declined from 5.3 percent last June to 4.9 percent in January. Although the unemployment rate now equals the median of Federal Open Market Committee (FOMC) participants' estimates of its longer-run normal level, other considerations suggest that some further improvement in labor market conditions is needed to achieve the Committee's maximum employment mandate. The labor force participation rate remains somewhat below most assessments of its trend, and an unusually large number of people continue to work part time when they would prefer full-time employment.

Inflation remains below the FOMC's longer-run goal of 2 percent: The price index for personal consumption expenditures (PCE) rose only ½ percent over the 12 months ending in December. The PCE price index excluding food and energy items, which often provides a better indication of future inflation, also remained subdued, rising 1½ percent over that period. Inflation has been held down substantially by the drop in energy prices; declines in the prices of non-oil imported goods have contributed as well. Meanwhile, survey-based measures of longer-run inflation expectations have drifted down a little since the middle of last year and generally stand near the lower ends of their historical ranges; market-based measures of inflation compensation have fallen and are at low levels.

Real gross domestic product (GDP) is reported to have increased at an annual rate of about 1¼ percent over the second half of the year, slower than the first-half pace. The expansion in economic activity reflected continued increases in private domestic final demand, supported by ongoing job gains and accommodative monetary policy. Government purchases rose modestly. By contrast, the rise in the foreign exchange value of the dollar over the past year and a half and the sluggish pace of economic activity abroad have continued to weigh on exports. In addition, the pace of inventory accumulation slowed markedly from its elevated first-half pace, thereby reducing overall GDP growth in the second half of 2015.

Domestic financial conditions have become somewhat less supportive of economic growth since mid-2015. Recent months have been marked by bouts of turbulence in financial markets that largely reflected

concerns about the global economic outlook and developments in oil markets. Broad measures of U.S. equity prices have declined, on net, roughly returning these indexes to levels that prevailed during the first half of 2014. And the dollar has strengthened further, on balance, since the summer of 2015. Corporate risk spreads have widened, particularly for lower-rated issuers. Nonetheless, interest rates for investment-grade issuers are generally still low, reflecting declines in yields on longer-term Treasury securities. Moreover, although debt issuance by lower-rated firms has slowed, credit flows to nonfinancial businesses have remained solid since the middle of last year, supported by continued strong bond issuance of higher-rated firms and by bank lending. Household access to credit was mixed, with mortgages and credit cards still difficult to access for some borrowers while student and auto loans remained broadly available, even to borrowers with lower credit scores. Overall, debt growth in the household sector has remained modest and continues to be concentrated among borrowers with strong credit histories.

The U.S. financial system overall has been resilient to the stresses that have emerged since mid-2015, and financial vulnerabilities remain moderate. Regulatory capital ratios and holdings of liquid assets at large banking firms are at historically high levels. Usage of short-term wholesale funding in the financial system is relatively low, and the use of leverage to finance securities purchases has declined somewhat. The ratio of aggregate private nonfinancial credit to GDP is below most estimates of its long-run trend, although leverage of speculative-grade nonfinancial corporations has risen further since the middle of last year and is relatively high. Risk premiums for many asset classes have increased. For instance, the rise in spreads on corporate debt has been larger than would be expected given the evolution of expected defaults. The direct exposures of the largest U.S. banking firms to the oil sector and to emerging market economies are limited. If conditions in those sectors worsen, however, wider stresses could emerge and be transmitted to the United States through indirect global financial linkages.

In December, after holding the federal funds rate near zero for seven years, the FOMC raised the target range for that rate to ¼ to ½ percent. The decision to increase the federal funds rate reflected the Committee's assessment that there had been considerable improvement in the labor market last year and that the Committee was reasonably confident that inflation would move back to 2 percent over the medium term; thus, the criteria set out by the Committee in March 2015 had been met.

The Committee anticipates that economic conditions will evolve in a manner that will warrant only gradual increases in the federal funds rate. This expectation is consistent with the view that the neutral nominal federal funds rate—defined as the value of the federal funds rate that would be neither expansionary nor contractionary if the economy was operating at its productive potential—is currently low by historical standards and is likely to rise only gradually over time, as headwinds to economic growth dissipate slowly and as inflation rises toward the Committee's goal of 2 percent. Consistent with this outlook, in the most recent Summary of Economic Projections (SEP), which was compiled at the time of the December FOMC meeting, FOMC participants projected that the appropriate level of the federal funds rate would be below its longer-run level through 2018. (The December SEP is included as Part 3 of the February 2016 *Monetary Policy Report* on pages 35–48; it is also included in section 9 of this annual report.)

With respect to its securities holdings, the Committee will continue to reinvest principal payments from its securities portfolio, and it expects to maintain this reinvestment policy until normalization of the level of the federal funds rate is well under way. This policy, by keeping the Committee's holdings of longer-term securities at sizable levels, should help maintain accommodative financial conditions.

The Committee has emphasized that the actual path of monetary policy will depend on how incoming data affect the economic outlook. In determining the timing and size of future adjustments to the target range of the federal funds rate, the Committee will assess realized and expected economic conditions relative to its objectives of maximum employment and 2 percent inflation. Stronger growth or a more rapid increase in inflation than the Committee currently anticipates would likely call for faster increases in the federal funds rate; conversely, if conditions prove weaker, a lower path of the federal funds rate would likely be appropriate.

To move the federal funds rate into the new target range announced in December, the Federal Reserve raised the rate of interest paid on required and excess reserve balances and also employed an overnight reverse repurchase agreement facility. The effective federal funds rate was moved successfully into the

increased target range. The FOMC remains confident that it has the tools it needs to adjust short-term interest rates as appropriate.

Part 1: Recent Economic and Financial Developments

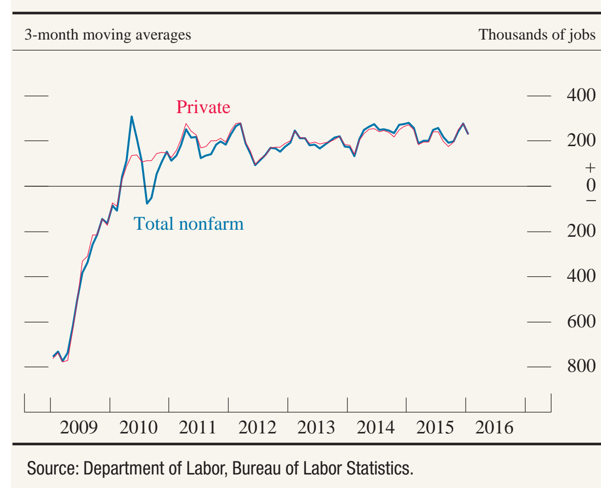
The labor market continued to improve during the second half of last year and early this year. Payroll employment has increased 225,000 per month, on average, since June. The unemployment rate fell from 5.3 percent in June to 4.9 percent in January and thus has reached the median estimate among Federal Open Market Committee (FOMC) participants of the level of unemployment that is considered to be normal in the longer run. Even so, the relatively low labor force participation rate and the unusually large number of people working part time who would prefer full-time employment suggest that some cyclical weakness is still present in the labor market. Since mid-2014, a steep drop in crude oil prices has exerted significant downward pressure on overall inflation, and declines in the prices of non-oil imported goods have held down inflation as well. The price index for personal consumption expenditures (PCE) increased only ½ percent during the 12 months ending in December, a rate that is well below the FOMC's longer-run objective of 2 percent; the index excluding food and energy prices rose 1½ percent over the same period. Both survey- and market-based measures of inflation expectations have moved down since June. Meanwhile, real gross domestic product (GDP) increased at an annual rate of 1¼ percent over the second half of 2015, slower than in the first half. The growth in GDP has been supported by accommodative monetary policy, favorable consumer confidence, and the boost to household purchasing power from lower oil prices. However, lower oil prices have also exerted downward pressure on domestic investment in the energy sector. In addition, sluggish growth abroad and the higher foreign exchange value of the dollar have weighed on exports, and financial conditions more generally have become somewhat less supportive of economic growth. Concerns about economic conditions abroad and the energy sector have contributed to lower equity prices and higher borrowing rates for some businesses.

Domestic Developments

The labor market has continued to improve . . .

Labor market conditions strengthened further across a variety of dimensions over the second half of 2015 and early this year. Payroll employment gains

Figure 1. Net change in payroll employment



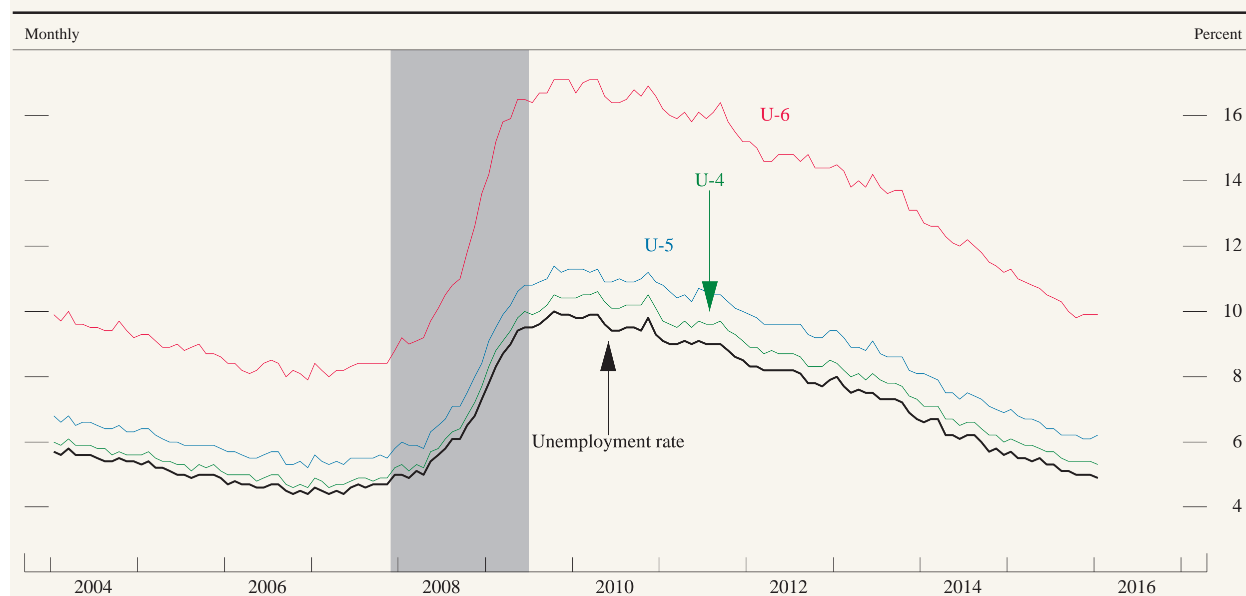
Source: Department of Labor, Bureau of Labor Statistics.

remained robust, averaging about 235,000 per month over the second half of last year, similar to the gains over the first half; factoring in the January increase of about 150,000, monthly gains since June have averaged about 225,000 (figure 1). The increase in 2015 followed an even faster pace of job gains in 2014, and, in total, some 5¾ million jobs were added over the two years. In addition, the unemployment rate—which had reached 10 percent in late 2009—declined from 5.3 percent in June 2015 to 4.9 percent in January of this year; this level is ¾ percentage point lower than a year earlier and is equal to the median of FOMC participants' estimates of its longer-run normal level (figure 2). Broader measures of labor underutilization, such as those including individuals who are classified as marginally attached to the labor force, declined by similar amounts. (A "marginally attached" individual is defined as someone who is not looking for work currently and therefore treated as not in the labor force, but who wants and is available for work and has looked for a job in the past 12 months.)

. . . though some labor market slack likely remains . . .

While payroll employment and the unemployment rate have improved further since mid-2015, the labor force participation rate fell from an average of 62.7 percent of the working-age population during the second quarter of 2015 to 62.5 percent in the fourth quarter; the participation rate moved back up to 62.7 percent in January. Changing demographics—most notably the increasing share of older people in the population, who are less likely to be in the labor force—and other longer-run structural

Figure 2. Measures of labor underutilization



Note: U-4 measures total unemployed plus discouraged workers, as a percent of the labor force plus discouraged workers. Discouraged workers are a subset of marginally attached workers who are not currently looking for work because they believe no jobs are available for them. U-5 measures total unemployed plus all marginally attached to the labor force, as a percent of the labor force plus persons marginally attached to the labor force. Marginally attached workers are not in the labor force, want and are available for work, and have looked for a job in the past 12 months. U-6 measures total unemployed plus all marginally attached workers plus total employed part time for economic reasons, as a percent of the labor force plus all marginally attached workers. The shaded bar indicates a period of business recession as defined by the National Bureau of Economic Research.

Source: Department of Labor, Bureau of Labor Statistics.

changes in the labor market have continued to push down the participation rate even as cyclical forces have been pushing it up. That said, labor force participation appears to remain a little weaker than can be explained by structural factors alone, pointing to the likelihood that some slack remains in this dimension of labor utilization. In addition, although the share of workers who are employed part time but would like to work full time has fallen noticeably since June, it is still relatively high, indicating some scope for improvement on this dimension as well.

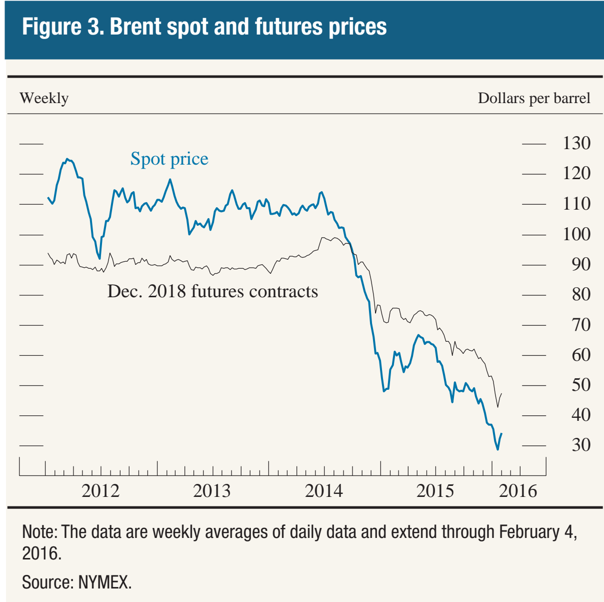
. . . while labor compensation has shown some tentative signs of accelerating . . .

As the labor market has continued to improve, the rates of increase in some measures of hourly labor compensation have begun to pick up while others remain relatively subdued. For example, average hourly earnings for all employees increased 2½ percent over the 12 months ending in January, above the 2 percent pace seen throughout most of the recovery. In addition, compensation per hour in the business sector—a volatile measure derived from the labor compensation data in the national income and product accounts, or NIPA—is reported to have increased more quickly in 2015 than its average pace throughout most of the recovery. In contrast, the employment cost index for private industry workers, which measures both wages and the cost to employers of providing benefits, increased about 2 percent over the 12 months ending in December, similar to the pace seen throughout most of the recovery. All of these measures of compensation are increasing at slower rates than those seen prior to the recession. This deceleration probably reflects a variety of factors, including the slower growth of productivity, the slower pace of inflation, and perhaps some remaining slack in the labor market. Despite the continued relatively small increases in nominal wages, the recent very low inflation led to a noticeably larger wage gain last year on a purchasing-power-adjusted (or so-called real) basis than had been evident earlier in the expansion.

. . . and productivity growth has been lackluster

Over time, increases in productivity are a key determinant of the rise in real wages and living standards. Labor productivity in the business sector increased at an annual rate of just ½ percent in 2015 and at an average annual rate of just 1 percent since the last business cycle peak in 2007. The average pace since 2007 is a little below the 1974–95 average and well

Figure 3. Brent spot and futures prices



Note: The data are weekly averages of daily data and extend through February 4, 2016.

Source: NYMEX.

Figure 4. Change in the price index for personal consumption expenditures

Note: The data extend through December 2015; changes are from one year earlier.

Source: Department of Commerce, Bureau of Economic Analysis.

below the pace during the period from the mid-1990s to 2007. The reasons behind the slower productivity performance in recent years are not well understood, but one factor seems to be the slower pace of capital accumulation.

Falling oil prices continue to hold down overall consumer prices . . .

Consumer price increases have remained muted and below the FOMC's longer-run objective of 2 percent. As discussed in the box "Effects of Movements in Oil Prices and the Dollar on Inflation" on pages 8–9 of the February 2016 *Monetary Policy Report*, crude oil prices have plummeted since June 2014, and the dollar has moved appreciably higher; both factors have contributed importantly to the low inflation readings of the past year.

Since July, the price of crude oil has fallen appreciably further, on net, with the spot price of Brent crude oil dropping below $35 per barrel, a level last seen more than a decade ago (the blue line in figure 3). Futures prices have also dropped significantly and indicate that market participants expect only modest price increases over the next few years. Although concerns about global growth have contributed to the fall in prices, much of the recent decline can be attributed to the abundance of global supply. Reductions in U.S. production have been slower and smaller than expected, and OPEC has abandoned its official production target in favor of maintaining robust production despite declining prices and the likely increase in Iranian oil exports in the coming months.

The drop in crude oil prices continues to pass through to gasoline prices: The national average of retail gasoline prices (on a seasonally adjusted basis) moved down from more than $2.50 per gallon in June to about $2.00 per gallon in January.

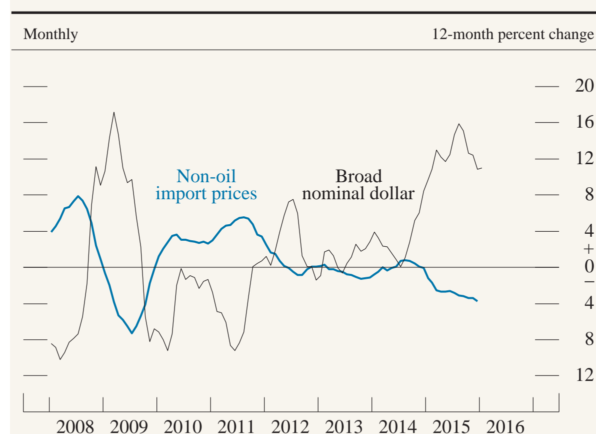
Largely because of the decline in energy prices, overall consumer price inflation, as measured by the PCE price index, was running at just ¼ percent for the 12 months ending in June 2015; the 12-month change remained near that pace until year-end, when it edged up to ½ percent as some of the sharpest declines from a year earlier fell out of the 12-month calculation (figure 4).

Food prices were little changed over the past six months after edging down during the first half of 2015. Consumer food prices were held down in 2015 by falling food commodity prices, but futures markets suggest that these commodity prices will flatten out, implying that this source of downward pressure on consumer food price inflation is likely to wane.

. . . but even outside of the energy and food categories, inflation has remained subdued

As is also discussed in the box "Effects of Movements in Oil Prices and the Dollar on Inflation" on pages 8–9 of the February 2016 *Monetary Policy Report*, another important factor holding down inflation has been the behavior of import prices. After declining sharply in the first half of 2015, non-oil import prices continued to fall in the second half, albeit at a slightly more modest pace; the further

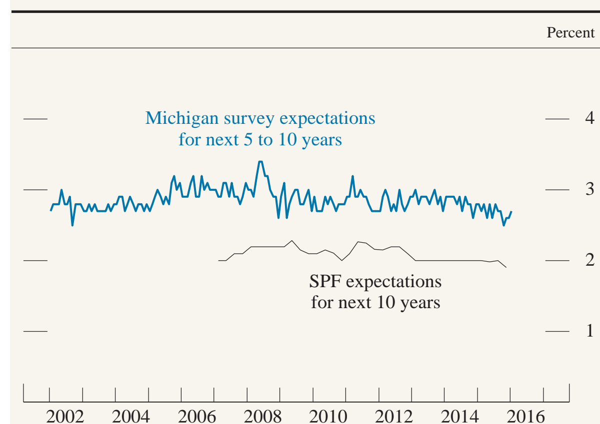
Figure 5. Non-oil import prices and U.S. dollar exchange rate



Note: The data for non-oil import prices extend through December 2015.

Source: Department of Labor, Bureau of Labor Statistics; Federal Reserve Board, Statistical Release H.10, "Foreign Exchange Rates."

Figure 6. Median inflation expectations



Note: The Michigan survey data are monthly. The SPF data for inflation expectations for personal consumption expenditures are quarterly and extend from 2007:Q1 through 2015:Q4.

Source: University of Michigan Surveys of Consumers; Federal Reserve Bank of Philadelphia, Survey of Professional Forecasters (SPF).

declines in the second half reflected lower commodity prices as well as additional increases in the foreign exchange value of the dollar (figure 5). In addition, slack in labor and product markets likely placed downward pressure on inflation, although this factor has probably waned significantly. For all of these reasons, inflation for items other than food and energy (so-called core inflation) remained modest. Core PCE prices rose about 1½ percent over the 12 months ending in December, similar to the increase in 2014.

Survey- and market-based measures of inflation expectations have moved down since June

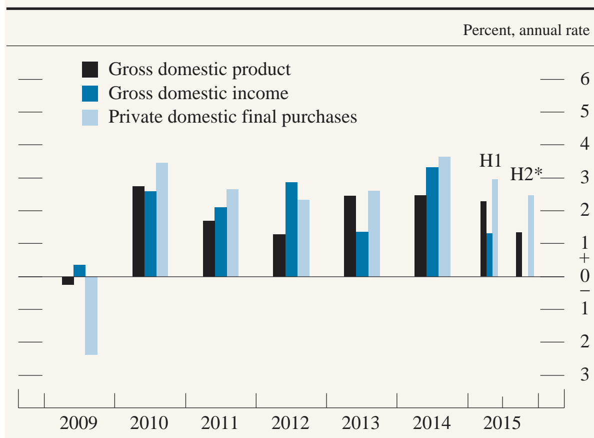
Wage- and price-setting decisions are likely influenced by expectations for inflation. Survey measures of longer-term inflation expectations have been quite stable over the past 15 years but appear to have moved down some lately, including over the past 6 months, to the lower end of their historical ranges. This decline has occurred both for the measure of inflation expectations over the next 5 to 10 years as reported in the University of Michigan Surveys of Consumers and for the median expectation for the annual rate of increase in the PCE price index over the next 10 years from the Survey of Professional Forecasters, conducted by the Federal Reserve Bank of Philadelphia (figure 6). Market-based measures of medium- (5-year) and longer-term (5-to-10-year-ahead) inflation compensation derived from the difference between yields on nominal Treasury securities and Treasury Inflation-Protected Securities moved down further, on net, over the second half of the year after having declined notably between mid-2014 and mid-2015. Although changes in inflation compensation could reflect changes in expected inflation, they also may reflect a variety of other considerations, including an inflation risk premium, liquidity premiums, and other factors.[1]

Economic activity expanded at a moderate pace in the second half of 2015

Real GDP is reported to have increased at an annual rate of 1¼ percent in the second half of last year, slower than the first-half pace (figure 7). As in the first half of the year, economic activity during the second half was supported by solid gains in private domestic final purchases—that is, final purchases by households and businesses—and by modest increases in government purchases of goods and services. By contrast, aggregate demand continued to be held down by weak export performance, reflecting the rise in the foreign exchange value of the dollar and sluggish foreign economic growth. In addition, inventory investment slowed markedly from its elevated first-half pace, thereby reducing overall GDP growth in the second half of 2015.

[1] For further discussion of inferring inflation expectations from market-based measures, see the box "Challenges in Interpreting Measures of Longer-Term Inflation Expectations" in Board of Governors of the Federal Reserve System (2015), *Monetary Policy Report* (Washington: Board of Governors, February), www.federalreserve.gov/monetarypolicy/mpr_20150224_part1.htm.

Figure 7. Change in real gross domestic product, gross domestic income, and private domestic final purchases



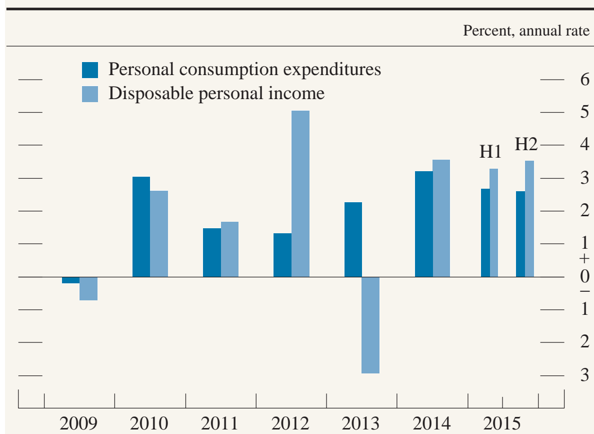
* Gross domestic income is not yet available for 2015:H2.

Source: Department of Commerce, Bureau of Economic Analysis.

Gains in income and wealth are supporting consumer spending . . .

Real personal consumption expenditures rose at an annual rate of 2½ percent in the second half of 2015, about the same as the first-half pace (figure 8). These increases have been supported by income gains from the improving labor market as well as the fall in gasoline and other energy prices, which has bolstered consumers' purchasing power. As a result, real disposable income—that is, income after taxes and adjusted for price changes—rose a robust 3½ percent in 2015 after a similar gain in 2014.

Figure 8. Change in real personal consumption expenditures and disposable personal income



Source: Department of Commerce, Bureau of Economic Analysis.

Consumer spending last year was also likely supported by further increases in household net worth. Although the value of corporate equities edged down last year, prices of houses—which are owned much more widely than are corporate equities—posted significant gains, and the wealth-to-income ratio remained elevated relative to its historical average. In nominal terms, national house price indexes are now close to their peaks of the mid-2000s, but relative to rents, house price valuations are much lower than a decade ago.

Coupled with low interest rates, the rise in incomes has lowered debt payment burdens for many households. The household debt service burden—the ratio of required principal and interest payments on outstanding household debt to disposable income, measured for the household sector as a whole—has remained at a very low level by historical standards. As interest rates rise, the debt burden will move up only gradually, as most household debt is in fixed-interest products.

. . . as is credit availability

Consumer credit continued to expand moderately through late 2015, as lending standards for both auto lending and student loans remained accommodative. In addition, credit card lending has been rebounding since early last year. Standards and terms on credit cards are still relatively tight for riskier borrowers, although there has been some modest increase in access for borrowers with subprime credit histories. Delinquencies on credit card and auto loans are still near historical lows, in part due to the tight standards.

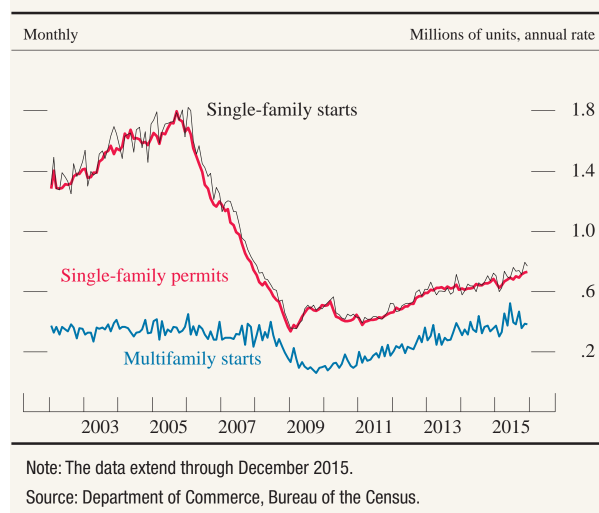
Consumer confidence remains high

Household spending has also been supported by favorable consumer sentiment. For the past year or so, the overall index of consumer sentiment from the University of Michigan Surveys of Consumers has registered levels comparable to those that prevailed before the recession. Rising real incomes, partly driven by falling energy prices and improvements in the labor market, have likely driven up consumer confidence. These same factors are probably behind the more upbeat expectations that households report for real income changes over the next year or two, which are now near pre-recession levels.

Residential construction has improved modestly

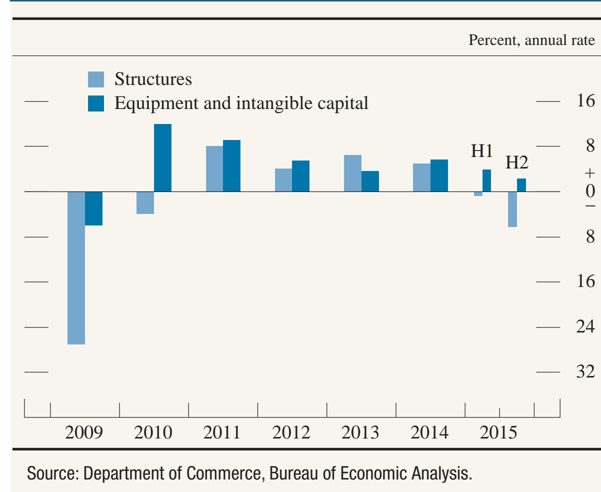
The gradual recovery in residential construction activity continued over the second half of last year. Both single- and multifamily housing starts registered moderate increases in 2015 (figure 9). Sales of new

Figure 9. Private housing starts and permits



Note: The data extend through December 2015.
Source: Department of Commerce, Bureau of the Census.

Figure 10. Change in real private nonresidential fixed investment



Source: Department of Commerce, Bureau of Economic Analysis.

and existing homes also rose moderately, abstracting from the temporary plunge in existing home sales in November, which reportedly reflected a lengthening in closing times due to new mortgage disclosure rules. But while multifamily starts have recovered to their pre-recession level, single-family construction continues to be well below its earlier pace. The level of housing starts is still being held down by a meager pace of household formation, tighter-than-average mortgage credit supply, and shortages of skilled labor and other inputs in the construction sector.

Although the October 2015 and January 2016 Senior Loan Officer Opinion Survey on Bank Lending Practices (SLOOS) reports suggest that a gradual easing of bank lending standards has continued over the past six months, mortgage credit is still difficult to access for borrowers with low credit scores, undocumented income, or high debt-to-income ratios.[2] For borrowers who can obtain credit, interest rates on mortgages remain near their historical lows, although they inched up, on net, over the second half of the year. In 2015, outstanding mortgage debt rose for the first time since the recession as mortgage originations for home purchases increased and write-downs of mortgage debt continued to ebb.

Overall business investment has slowed as a result of a sharp drop in investment in the energy sector

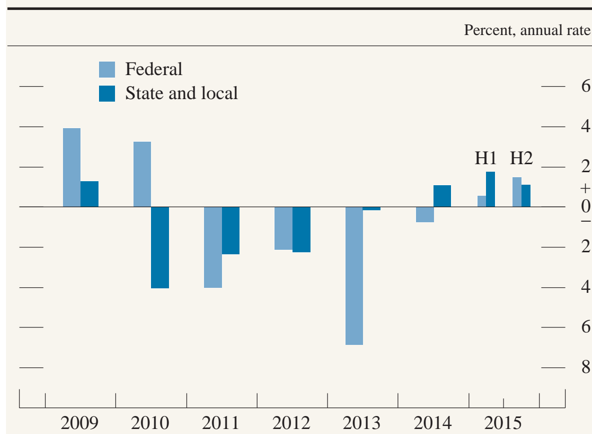
Business investment (private nonresidential fixed investment) rose at an annual rate of only ½ percent during the second half of 2015 after increasing at a 3 percent pace during the first half of the year (figure 10). Spending on equipment rose modestly, and a bit faster than during the first half of 2015, but spending on intangibles, such as research and development, and investment in structures outside of drilling and mining flattened out after posting strong gains during the first half of the year. Investment in structures used in the energy sector continued to fall precipitously, as the drop in oil prices has scuttled investment in higher-cost oil and gas wells. For the year as a whole, the pace of overall business investment slowed compared with 2014, mostly as a result of the drop in the energy sector. Investment has been supported by low interest rates and financing conditions that are still generally accommodative, though somewhat less so than earlier.

Corporate financing conditions have become somewhat less supportive

Domestic financial conditions for nonfinancial firms have become somewhat less supportive of growth since last June, particularly for non-investment-grade firms. Equity prices have declined and bond spreads have widened amid concerns about the global economic outlook and oil prices. Downgrades of bonds issued by nonfinancial companies have increased, and the leverage of these companies is near the top end of its range over the past few decades. Nonetheless, profitability has remained high outside the energy sector. Against a backdrop of low interest rates, investment-grade nonfinancial businesses have continued to raise substantial amounts of funds in bond and loan markets since last June, in part to

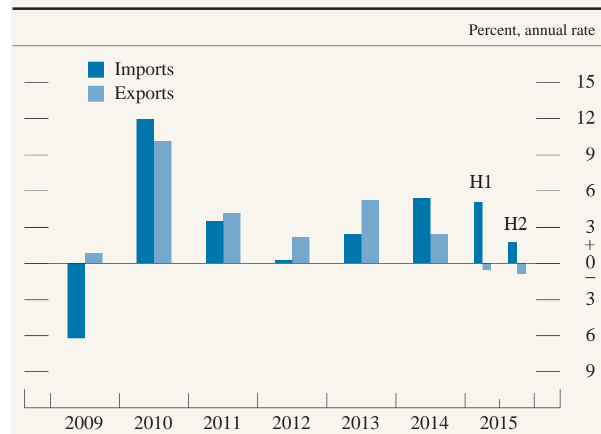
2 The SLOOS is available on the Board's website at www.federalreserve.gov/boarddocs/snloansurvey.

Figure 11. Change in real government expenditures on consumption and investment



Source: Department of Commerce, Bureau of Economic Analysis.

Figure 12. Change in real imports and exports of goods and services



Source: Department of Commerce, Bureau of Economic Analysis.

finance mergers and acquisitions activity. Speculative-grade bond issuance also was solid for much of 2015 but diminished toward the end of the year as spreads widened notably, particularly for firms in the energy sector.

Loan demand remained strong across most major categories through the end of 2015. Of note, demand for commercial real estate (CRE) loans strengthened further and issuance of commercial mortgage-backed securities (CMBS) remained robust. Credit conditions tightened for this sector as concerns about credit quality led to wider spreads on CMBS and, according to the results of the October and January SLOOS reports, a moderate number of banks had tightened lending standards for CRE loans, particularly for construction and land development. A modest fraction of banks also reported having tightened lending standards for commercial and industrial loans to firms of all sizes since the second quarter.

The drag from federal fiscal policy has ended . . .

After being a drag on aggregate demand during much of the expansion, federal fiscal policy has shifted to a more neutral stance as fiscal consolidation efforts have abated. During 2015, policy actions had little effect on taxes and transfers, and real federal purchases of goods and services edged up (figure 11).

The federal budget deficit narrowed further in fiscal year 2015 to 2½ percent of GDP, largely reflecting the increase in tax receipts owing to the ongoing economic expansion as well as the modest increase in purchases. A deficit of this size is small enough to stabilize the ratio of the debt held by the public to nominal GDP; that said, the current level of that ratio is elevated relative to its average over the post–World War II period. The Congressional Budget Office projects the deficit to move up to about 3 percent of GDP in fiscal 2016.

. . . and state and local government expenditures are rising moderately

Fiscal conditions of most state and local governments continue to improve gradually. Tax revenues have been rising moderately, supported by the expansion of economic activity and increasing house prices. These governments boosted spending at a moderate rate in 2015. In particular, real state and local purchases of goods and services rose 1½ percent last year, as employment posted another modest gain and real construction spending rose markedly for the first time since the recession.

In contrast, net exports still held down growth in gross domestic product slightly

Exports held about flat in the second half of 2015, weighed down by the appreciation of the dollar and by soft foreign economic growth (figure 12). Although the stronger dollar made imports more affordable, import growth was also relatively subdued. Imports for inputs related to oil exploration and production were particularly weak, consistent with steep declines in that industry. In all, real net trade continued to be a drag on real GDP growth in the second half of 2015. Although the real trade bal-

ance deteriorated, the nominal trade balance was little changed in 2015 in part because the value of imports declined, largely because of the decline in oil prices. Still, the current account deficit widened a bit to near 3 percent of nominal GDP as U.S. net investment income declined.

Financial Developments

The expected path for the federal funds rate over the next several years declined

Despite further strengthening in labor market conditions and a range of other indicators that market participants viewed as consistent with continued expansion in the U.S. economy, market-based measures of the expected path of the federal funds rate over the next several years have moved down, on balance, since the middle of last year. Contributing to this shift were concerns about the foreign economic outlook and global disinflationary pressures, as well as Federal Reserve communications anticipating that economic conditions will warrant only gradual increases in the federal funds rate. Survey-based measures of the expected path of policy also moved down. According to the results of the most recent Survey of Primary Dealers, conducted by the Federal Reserve Bank of New York just prior to the January FOMC meeting, respondents' expectations for the federal funds rate target at the end of this year and next year were lower than those reported last June. Market-based measures of uncertainty about the policy rate approximately one to two years ahead declined, on balance, from their mid-2015 levels.

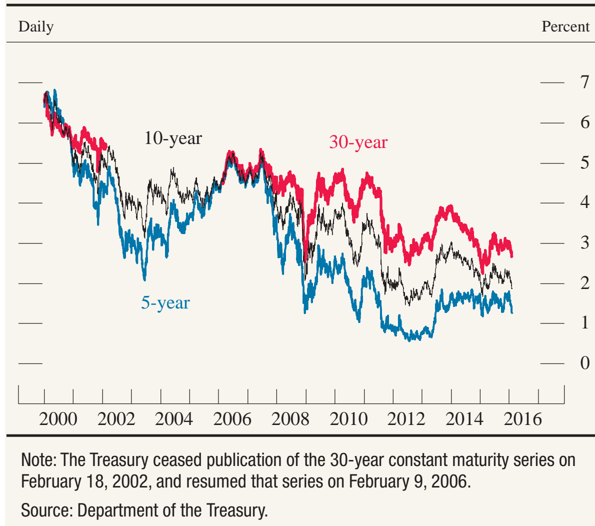
Longer-term Treasury yields decreased

Yields on longer-term nominal Treasury securities have declined since the middle of last year on net (figure 13). The decreases in nominal yields largely reflected reductions in inflation compensation; yields on long-term inflation-protected Treasury securities were little changed. Participants in the U.S. Treasury market reportedly were particularly attentive to developments abroad, especially turbulence in Chinese financial markets, and to fluctuations in oil prices. Consistent with the changes in yields on Treasury securities, yields on 30-year agency mortgage-backed securities (MBS)—an important determinant of mortgage interest rates—decreased, on balance, over the second half of 2015 and early 2016.

Broad equity price indexes decreased . . .

Since the middle of last year, amid considerable volatility, broad measures of U.S. equity prices have decreased notably, on net, as concerns about the foreign economic outlook appeared to weigh on risk sentiment and the outlook for corporate earnings growth (figure 14). Stock prices for companies in the energy and basic materials sectors dropped sharply, reflecting the continued fall in oil and other commodity prices. Implied volatility for the overall S&P 500 index, as calculated from options prices, increased, on balance, since the middle of last year; at times, its movement was notable.

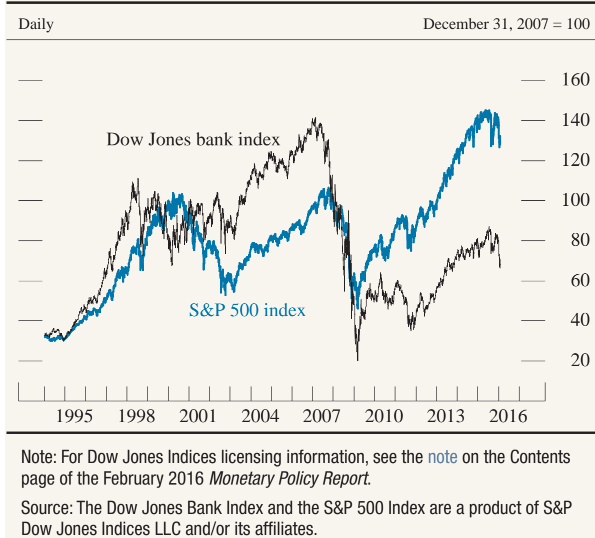
Figure 13. Yields on nominal Treasury securities



Note: The Treasury ceased publication of the 30-year constant maturity series on February 18, 2002, and resumed that series on February 9, 2006.

Source: Department of the Treasury.

Figure 14. Equity prices



Note: For Dow Jones Indices licensing information, see the note on the Contents page of the February 2016 *Monetary Policy Report.*

Source: The Dow Jones Bank Index and the S&P 500 Index are a product of S&P Dow Jones Indices LLC and/or its affiliates.

. . . and risk spreads on speculative-grade corporate bonds moved up substantially, particularly for firms in the energy sector

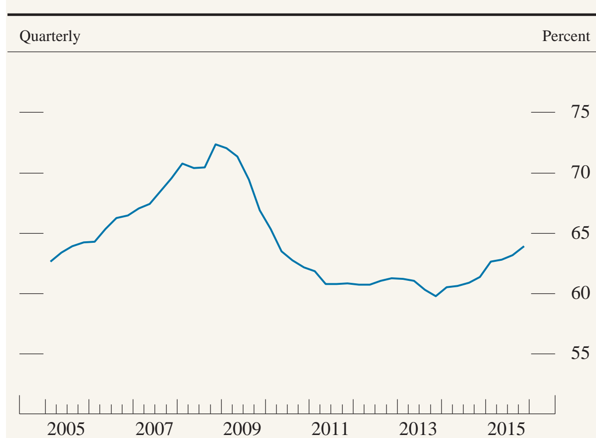
Credit spreads in the corporate sector have widened across the credit spectrum. The spread of yields on investment-grade corporate bonds to yields on Treasury securities of comparable maturity rose moderately, and credit spreads on speculative-grade bonds widened substantially. Spreads for firms in the energy sector increased particularly sharply, reflecting the further drops in the price of oil since late June. Mutual funds investing in speculative-grade bonds experienced significant outflows over the second half of 2015 and early 2016, and, in December, redemptions from one such fund were suspended. During the second half of last year, the respondents to the Senior Credit Officer Opinion Survey on Dealer Financing Terms reported a moderate deterioration in liquidity and market functioning in speculative-grade corporate bonds and some tightening of the terms under which dealers were willing to provide financing to clients against such bonds.[3] In addition, some metrics of corporate bond market liquidity suggest a slight deterioration over the second half of 2015 and early 2016, though most indicators remain at levels comparable with those seen prior to the crisis. For further discussion of corporate bond markets and other financial stability issues, see the box "Developments Related to Financial Stability" on pages 20–21 in the February 2016 *Monetary Policy Report*.

Short-term funding markets continued to function well

Short-term dollar funding markets have functioned smoothly during the second half of 2015 and early 2016. Markets for unsecured offshore dollar funding and repurchase agreements, or repos, generally did not exhibit signs of stress. Year-end funding pressures were modest.

Money market participants continued to focus on the Federal Reserve's use of its monetary policy tools. These tools proved effective in raising the federal funds rate following the FOMC's decision to increase the target range in December, while other money market rates also moved up broadly in line with the increase in the federal funds target range. For a detailed discussion, see the box "Monetary Policy Implementation following the December 2015 FOMC Meeting" on page 34 of the February 2016 *Monetary Policy Report*.

Figure 15. Ratio of total commercial bank credit to nominal gross domestic product



Source: Federal Reserve Board, Statistical Release H.8, "Assets and Liabilities of Commercial Banks in the United States"; Department of Commerce, Bureau of Economic Analysis.

Treasury market functioning and liquidity conditions in the mortgage-backed securities market were generally stable

Indicators of Treasury market functioning have remained broadly stable over the second half of 2015 and early 2016. A variety of liquidity metrics—including bid-asked spreads and bid sizes—have displayed no notable signs of liquidity pressures over the same period. In addition, Treasury auctions generally continued to be well received by investors.

Liquidity conditions in the agency MBS market were also generally stable. Dollar-roll-implied financing rates for production coupon MBS—an indicator of the scarcity of agency MBS for settlement—suggested limited settlement pressures over the second half of 2015 and early 2016.

Bank credit has continued to expand and bank profitability rose further

Aggregate credit provided by commercial banks increased at a solid pace in the second half of 2015 (figure 15). The expansion in bank credit was mainly driven by strong growth in loans coupled with an increase in banks' holdings of agency MBS. The growth of loans on banks' books was generally consistent with the SLOOS reports of increased loan demand for many loan categories.

3 More information on the Senior Credit Officer Opinion Survey on Dealer Financing Terms is available on the Board's website at www.federalreserve.gov/econresdata/releases/scoos.htm.

Measures of bank profitability remained below their historical averages but improved slightly during the third quarter of 2015 (the latest available data), supported by lower noninterest expenses. Net interest margins were about unchanged, on average, during the third quarter. Delinquency and charge-off rates for most major loan types were generally stable, near or at their lowest levels since the financial crisis.

Among large bank holding companies (BHCs), despite generally positive third- and fourth-quarter earnings reports, equity prices have decreased markedly, on balance, since the middle of last year. The decline in bank equity prices likely reflected concerns about global growth, the effects of a flatter yield curve on the outlook for bank profitability, and potential losses due to the decrease in energy prices. Credit default swap (CDS) spreads for large BHCs increased on net.

The M2 measure of the money stock has increased at an average annualized rate of about 6 percent since last June, about the same pace registered in the first half of 2015 and faster than nominal GDP growth. Demand for liquid deposits has continued to boost M2 growth.

Municipal bond markets functioned smoothly, but some issuers remained strained

Credit conditions in municipal bond markets have generally remained stable since the middle of last year. Over that period, the MCDX—an index of CDS spreads for a broad portfolio of municipal bonds—and ratios of yields on 20-year general obligation municipal bonds to those on longer-term Treasury securities edged up on net.

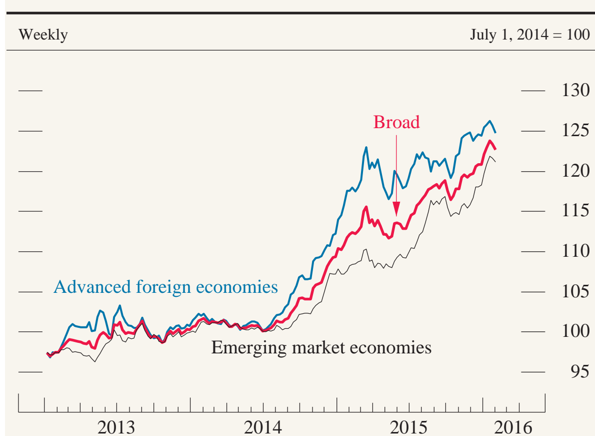
Nevertheless, significant financial strains were still evident for some issuers. In particular, Puerto Rico, which continued to face challenges from subdued economic performance, severe indebtedness, and other fiscal pressures, defaulted on some bond issues not backed by guarantees from the commonwealth and is seeking to restructure its debt.

International Developments

The dollar continued to strengthen . . .

The foreign exchange value of the dollar rose further, on net, since the middle of last year, bringing its increase since mid-2014, when the most recent run-up began, to over 20 percent by the beginning of 2016 (figure 16). Expectations that the Federal Reserve would soon start increasing its policy interest rates,

Figure 16. U.S. dollar exchange rate indexes



Note: The data, which are in foreign currency units per dollar, are weekly averages of daily data and extend through February 4, 2016.

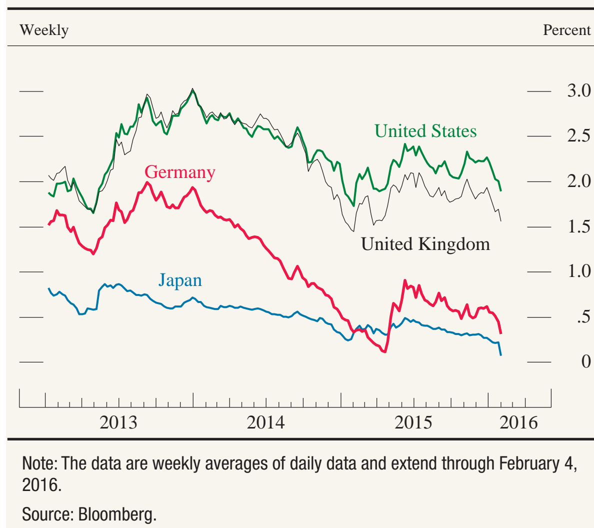
Source: Federal Reserve Board, Statistical Release H.10, "Foreign Exchange Rates."

even while most foreign central banks maintained or expanded monetary policy accommodation, boosted the value of the dollar. (For more discussion, see the box "Monetary Policy Divergence in the Advanced Economies " on page 24 of the February 2016 *Monetary Policy Report*.) The dollar has also appreciated against the renminbi since last summer, when the People's Bank of China (PBOC) announced it was changing its policy to allow market forces to play a greater role in determining the renminbi's exchange rate. The PBOC allowed the renminbi to depreciate 3 percent against the dollar in August and another 1½ percent after the turn of the year. These developments, which contributed to intensified uncertainty about China's exchange rate policy and the prospects for its economy, fostered episodes of global market turbulence that further boosted the dollar. Investors became more focused on downside risks to prospects for growth in China and, by implication, global growth. These concerns about growth, along with still-strong oil production and high inventories, contributed to a sharp drop in commodity prices, which in turn weighed on the currencies of several commodity-exporting countries.

. . . while equity prices and foreign sovereign bond yields have declined

Triggered in part by the unexpected devaluation of the renminbi and an ensuing increase in concerns about global economic growth, equity indexes have dropped, on net, in most emerging market economies (EMEs) and advanced foreign economies (AFEs) since the beginning of the summer. In particular,

Figure 17. 10-year nominal benchmark yields in selected advanced economies



Note: The data are weekly averages of daily data and extend through February 4, 2016.

Source: Bloomberg.

Chinese stock prices tumbled more than 40 percent despite official interventions, including circuit breakers and bans on stock sales, that were intended to mute some of the downward pressure. The fall in Brazilian stock prices was also very sharp, as global market turbulence as well as domestic developments, including a corruption scandal, declining output, and persistent high inflation, prompted stock prices to fall nearly 25 percent since last summer.

As in the United States, 10-year sovereign yields declined in most AFEs, likely in part because of increasing concerns about potential deflationary pressure amid falling commodity prices (figure 17). In the euro area, Greek sovereign yields, which had risen sharply in the first half of the year, declined substantially as an agreement was reached last summer between the European Union and Greece. In contrast, bond spreads in a number of EMEs rose modestly, on net, in the second half of the year before moving up more steeply after the start of 2016 amid a widespread increase in risk aversion.

Growth in the emerging market economies moved back up from earlier in 2015 . . .

Following weak growth in the first half of 2015, economic activity in the EMEs improved in the second half, as the pace of growth picked up in Asia and Latin America. However, growth has been held back in part by exports from EMEs, which declined appreciably early in 2015 and remain subdued on average. Economic activity in most of emerging Asia, which had been restrained in the first half of the year by soft external demand and by the outbreak of MERS (Middle East Respiratory Syndrome) in South Korea, picked up in the second half, as the drag from these pressures subsided. In China, GDP growth is reported to have held steady around 7 percent in the second half of the year, boosted in part by relatively strong growth in services. However, weak manufacturing, as well as the financial market volatility noted previously, led to a pronounced heightening of concerns about the economy during the second half of the year.

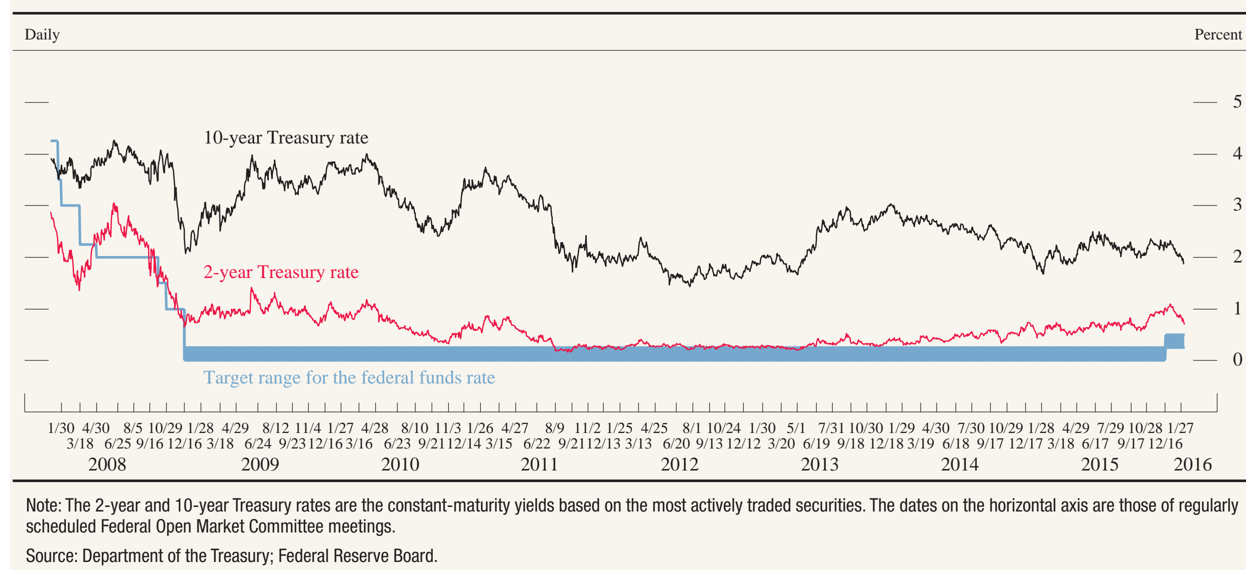
In Latin America, the decline in commodity prices, along with other macroeconomic challenges, continued to weigh on the economic activity of several countries. In Mexico, the economy continued to grow at a moderate pace in the second half of 2015, supported by improving household demand. However, low oil prices have pressured public finances, and manufacturing exports faltered toward the end of the year. In Brazil, the economy is undergoing its most severe recession in decades. Tight monetary policy in response to high inflation, low commodity prices, and the fallout from a high-profile corruption scandal eroded business confidence and contributed to a collapse in investment.

Inflation remained subdued in many EMEs, as the continuing decline in commodity prices contributed to a moderation of headline inflation. Consequently, some central banks, including those of Korea and India, loosened monetary policy to support growth. In China, the PBOC also lowered its benchmark rate and cut the reserve requirement ratio in August and October to address weakness in the economy. In contrast, faced with inflationary pressures stemming partly from their depreciating currencies, Brazil, Chile, and Colombia raised their policy rates in the second half of 2015.

. . . and in the advanced foreign economies, economic activity expanded at a moderate pace

In Canada, where low oil prices induced a mild contraction earlier in the year, economic activity rebounded in the third quarter as exports recovered and business-sector investment contracted at a slower pace. That said, more recent indicators of growth weakened markedly during the fourth quarter. In contrast, in the euro area, Japan, and the United Kingdom, economic activity grew moderately in the third quarter, and recent indicators for fourth-quarter growth, such as purchasing managers indexes, have largely held steady.

Figure 18. Selected interest rates



Note: The 2-year and 10-year Treasury rates are the constant-maturity yields based on the most actively traded securities. The dates on the horizontal axis are those of regularly scheduled Federal Open Market Committee meetings.

Source: Department of the Treasury; Federal Reserve Board.

As in the United States, inflation remained low in most advanced foreign economies. Further declines in commodity prices weighed on inflation in the AFEs; in the euro area, Japan, and the United Kingdom, consumer prices changed little in 2015. Over the same period, consumer prices rose about 1½ percent in Canada, reflecting the boost to import prices from the sharp depreciation of the Canadian dollar over the past year.

With inflation low, AFE central banks maintained highly accommodative monetary policies, and some signaled their intention to maintain large balance sheets well into the future. The European Central Bank, in addition to lowering its deposit rate further into negative territory, announced an extension of the intended duration of its asset purchase program through at least March 2017 and that it would reinvest principal payments for as long as necessary. The Bank of England announced that it will start shrinking its balance sheet only after its policy rate rises to about 2 percent from its current level of ½ percent. Meanwhile, in response to weak economic performance earlier in 2015, the Bank of Canada cut its policy rate further. More recently, the Bank of Japan cut the interest rate that it pays on a portion of banks' current account deposits to negative 0.1 percent.

Part 2: Monetary Policy

In December, the Federal Open Market Committee (FOMC) raised the target range for the federal funds rate by ¼ percentage point after seven years in which that rate had been held near zero. The FOMC's decision reflected the considerable improvement in the labor market last year and the Committee's assessment that, even with the modest reduction in policy accommodation, the labor market would continue to strengthen and inflation would return over the medium term to the FOMC's 2 percent objective. Monetary policy remains accommodative, and the Committee expects that economic conditions will warrant only gradual increases in the federal funds rate. However, the actual path of the federal funds rate will depend on the economic outlook as informed by incoming data.

The FOMC raised the federal funds rate target range in December . . .

Since last March, the FOMC had anticipated that it would be appropriate to increase the federal funds rate when it had seen further improvement in the labor market and was reasonably confident that inflation would move back to 2 percent over the medium term. In December, the FOMC, judging that these criteria had been met, raised the target range for the federal funds rate to ¼ to ½ percent (figure 18).[4]

[4] See Board of Governors of the Federal Reserve System (2015), "Federal Reserve Issues FOMC Statement," press release, December 16, www.federalreserve.gov/newsevents/press/monetary/20151216a.htm.

The Committee's decision to raise the federal funds rate recognized the time it takes for policy actions to affect future economic outcomes; if the FOMC delayed the start of policy normalization for too long, a relatively abrupt tightening of policy might eventually be needed to keep the economy from overheating and inflation from significantly overshooting the Committee's 2 percent objective. Such an abrupt tightening could disrupt financial markets and perhaps even inadvertently push the economy into recession.

. . . but monetary policy remains accommodative

Even after the increase in the federal funds rate late last year, the stance of monetary policy remains accommodative. The FOMC anticipates that economic conditions will evolve in a manner that will warrant only gradual increases in the federal funds rate, and that the federal funds rate is likely to remain, for some time, below the levels that are expected to prevail in the longer run.

This expectation is consistent with the view that the neutral nominal federal funds rate—defined as the value of the federal funds rate that would be neither expansionary nor contractionary if the economy was operating at its productive potential—is currently low by historical standards and is likely to rise only gradually over time. One indication that the neutral federal funds rate is low is that U.S. economic growth has been only moderate in recent years despite the very low level of the federal funds rate and the Federal Reserve's very large holdings of longer-term securities. Had the neutral rate been running closer to the average level estimated to have prevailed in recent decades, these policy actions would have been expected to foster a much more rapid economic expansion.

An array of persistent economic headwinds have weighed on aggregate demand since the financial crisis; these headwinds included, at various times, limited access to credit for some borrowers, contractionary fiscal policy, and weak growth abroad coupled with a significant appreciation of the dollar. Although the overall restraint imposed by such headwinds has declined over the past few years, the effects of some headwinds have remained significant. As these effects abate further, the neutral federal funds rate should gradually move higher over time. (For a discussion of how the neutral federal funds rate is likely to evolve over time, see the box "The Neutral Federal Funds Rate in the Longer Run" on pages 32–33 of the February 2016 *Monetary Policy Report*.)

Another reason that the Committee expects only a gradual increase in the federal funds rate will be warranted is that, with the federal funds rate near zero, the FOMC can respond more readily to upside surprises to inflation, economic growth, and employment than to downside shocks. This asymmetry suggests that it is appropriate to be more cautious in normalizing the stance of monetary policy than would be the case if short-term nominal interest rates were appreciably above zero.

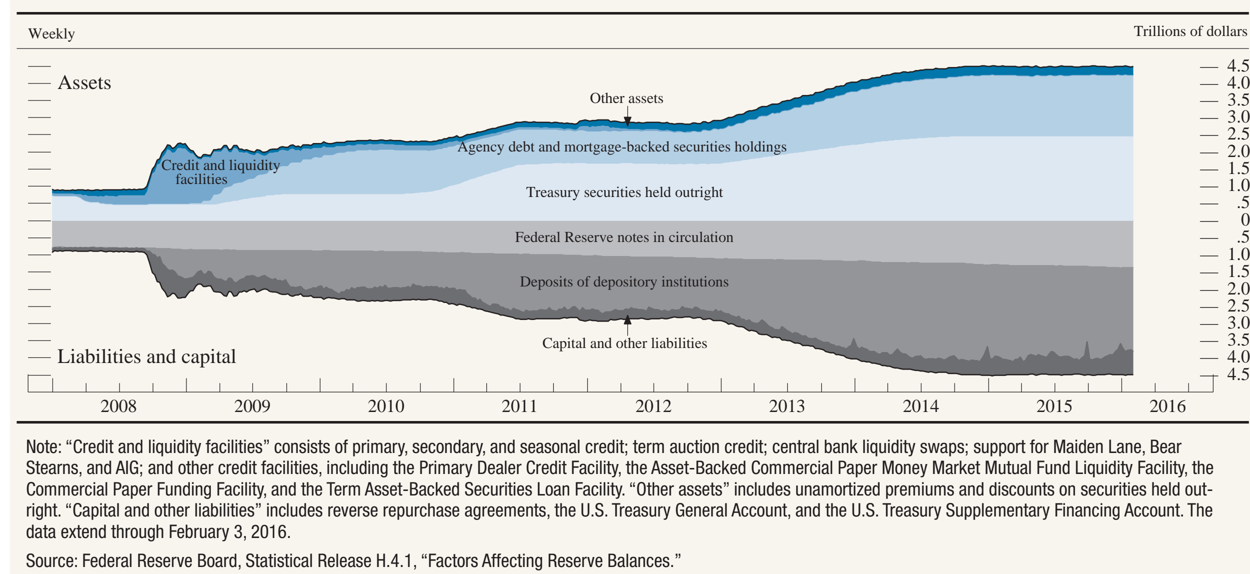
In part reflecting this concern, the FOMC continued to reinvest principal payments from its securities portfolio, and the Committee expects that this reinvestment policy will be maintained until normalization of the level of the federal funds rate is well under way. Maintaining sizable holdings of longer-term securities should help support accommodative financial conditions and reduce the risk that the Committee would not be able to deliver sufficient accommodation by lowering the federal funds rate in the event of future adverse shocks.

The FOMC expects that, supported by an accommodative monetary policy, economic activity will continue to expand at a moderate pace and the labor market will continue to strengthen. Inflation is expected to remain low in the near term, in part because of recent further declines in energy prices, but to rise to 2 percent over the medium term as the transitory effects of declines in energy and import prices dissipate and the labor market strengthens further. In light of the current shortfall of inflation from 2 percent, the Committee is carefully monitoring actual and expected progress toward its inflation goal.

The FOMC's policy decisions will continue to be data dependent

Although the Committee expects that economic conditions will warrant only gradual increases in the federal funds rate, the Committee has emphasized that the actual path of monetary policy will depend on how incoming data affect the economic outlook. In determining the timing and size of future adjustments to the target range, the Committee will assess realized and expected economic conditions relative to its objectives of maximum employment and 2 percent inflation. Stronger growth or a more rapid increase in inflation than the Committee currently anticipates would likely call for faster increases in the federal funds rate; conversely, if conditions prove weaker, a lower path of the federal funds rate would likely be appropriate. Similarly, the timing of a change in the reinvestment policy will depend on economic devel-

Figure 19. Federal Reserve assets and liabilities



Note: "Credit and liquidity facilities" consists of primary, secondary, and seasonal credit; term auction credit; central bank liquidity swaps; support for Maiden Lane, Bear Stearns, and AIG; and other credit facilities, including the Primary Dealer Credit Facility, the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility, the Commercial Paper Funding Facility, and the Term Asset-Backed Securities Loan Facility. "Other assets" includes unamortized premiums and discounts on securities held outright. "Capital and other liabilities" includes reverse repurchase agreements, the U.S. Treasury General Account, and the U.S. Treasury Supplementary Financing Account. The data extend through February 3, 2016.

Source: Federal Reserve Board, Statistical Release H.4.1, "Factors Affecting Reserve Balances."

opments and their implications for progress toward the FOMC's goals of maximum employment and price stability. In assessing realized changes in economic conditions and forming its outlook, the Committee will take into account a wide range of measures, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments.

The size of the Federal Reserve's balance sheet has remained stable

With the continuation of the Committee's reinvestment policy, the Federal Reserve's total assets have held steady at around $4.5 trillion (figure 19). Holdings of U.S. Treasury securities in the System Open Market Account (SOMA) have remained at $2.5 trillion, and holdings of agency debt and agency mortgage-backed securities at approximately $1.8 trillion. Consequently, total liabilities on the Federal Reserve's balance sheet were largely unchanged.

Given the Federal Reserve's large securities holdings, interest income on the SOMA portfolio has continued to support substantial remittances to the U.S. Treasury Department. Preliminary results indicate that the Reserve Banks provided for payments of $97.7 billion of their estimated 2015 net income to the Treasury. In addition, the Reserve Banks transferred to the Treasury $19.3 billion from their capital surplus as required by an amendment to the Federal Reserve Act contained in the Fixing America's Surface Transportation Act of 2015. Remittances from 2008 through 2015 total about $600 billion on a cumulative basis—an average of about $75 billion a year, compared with about $25 billion a year, on average, over the decade prior to 2008.

The Committee continued to focus on the implementation of monetary policy

Consistent with the FOMC's Policy Normalization Principles and Plans published on September 17, 2014, the Federal Reserve used interest paid on reserve balances and also employed an overnight reverse repurchase agreement (ON RRP) facility to implement its decision in December to raise the target range for the federal funds rate.[5] Specifically, the Board of Governors raised the interest rate paid on required and excess reserve balances to ½ percent, while the FOMC authorized ON RRP operations at an offering rate of ¼ percent. (For further information, see the box "Monetary Policy Implementation following the December 2015 FOMC Meeting" on page 34 of the February 2016 *Monetary Policy Report*.) In addition, the Board of Governors approved an increase in the discount rate (the primary credit rate) to 1 percent.

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[5] See Board of Governors of the Federal Reserve System (2014), "Federal Reserve Issues FOMC Statement on Policy Normalization Principles and Plans," press release, September 17, www.federalreserve.gov/newsevents/press/monetary/20140917c.htm.

Along with the decision to increase the target range for the federal funds rate, the FOMC also temporarily suspended the aggregate cap on ON RRP transactions, indicating that ON RRP operations would be undertaken in amounts limited only by the value of Treasury securities held outright in the SOMA that are available for such operations and by a per-counterparty limit of $30 billion per day. Nonetheless, total reverse repurchase agreement transactions with the Federal Reserve have remained near levels observed prior to the increase in the target range for the federal funds rate and the suspension of the aggregate cap. The Committee intends to phase out this facility when it is no longer needed to help control the federal funds rate.

The Federal Reserve also continued to test the operational readiness of other policy tools. Three Term Deposit Facility operations were conducted in the second half of 2015. The operations offered either 7- or 14-day deposits at a floating rate of 1 basis point over the interest rate on excess reserves. In these operations, deposit volumes declined slightly from previous tests with similar parameters.

Monetary Policy Report July 2015

Summary

The overall condition of the labor market continued to strengthen over the first half of 2015, albeit at a more moderate pace than in 2014. So far this year, payroll employment has increased by about 210,000 on average per month compared with the robust 260,000 average in 2014, and the unemployment rate has declined about ¼ percentage point to 5.3 percent in June, close to most Federal Open Market Committee (FOMC) participants' estimates of its longer-run normal level. Other measures of labor market activity also point to ongoing improvement in labor market conditions even as they continue to suggest that further improvement is needed to achieve the Committee's maximum employment mandate. In particular, the labor force participation rate has generally been holding steady but nevertheless remains below most assessments of its trend, and the number of people working part time when they would prefer full-time employment has declined further but remains elevated. And, while some measures of labor compensation are starting to rise more rapidly, they nevertheless remain consistent with the view that labor resources likely are still not being fully utilized.

Consumer price inflation remains below the FOMC's longer-run goal of 2 percent. The price index for personal consumption expenditures (PCE) edged up only ¼ percent over the 12 months ending in May, held down by the pass-through of a sizable decline in crude oil prices over the second half of last year. However, consumer energy prices appear to have stabilized in recent months. Changes in the PCE price index excluding food and energy items, which are often a better indicator of where overall inflation will be in the future, also remained relatively low; this index rose 1¼ percent over the 12 months ending in May, partly restrained by declines in the prices of non-energy imported goods. Meanwhile, survey-based measures of longer-run inflation expectations have remained relatively stable; market-based measures of inflation compensation have moved up somewhat from their lows earlier this year but remain below levels that prevailed until last summer.

Real gross domestic product is reported to have been little changed in the first quarter of this year. Some of this weakness likely reflected temporary factors that will reverse over the coming quarters. Indeed, a number of recent spending indicators suggest that economic activity increased at a moderate pace in the second quarter. The economic expansion continues to be supported by rising incomes resulting from ongoing job gains, accommodative monetary policy, and generally favorable financial conditions. Furthermore, the sizable drop in oil prices since last summer has been a substantial benefit to households, although the negative side of that decline has been quite evident in cutbacks in the energy sector of our economy. In addition, the sluggish pace of economic activity abroad, together with the appreciation of the dollar, has weighed on net exports.

The Committee expects that, with appropriate policy accommodation, economic activity will expand at a moderate pace and labor market conditions will continue to move toward levels the Committee judges to be consistent with its dual mandate of maximum employment and price stability. In addition, the Committee anticipates that, with stable inflation expectations and strengthening economic activity, inflation will rise gradually over the medium term toward the Committee's 2 percent objective. Those expectations are reflected in the June Summary of Economic Projections (SEP), which provides projections of the individual FOMC participants and is included as Part 3 of the July 2015 *Monetary Policy Report* on pages 37–50; it is also included in section 9 of this annual report.

Domestic financial conditions have generally remained supportive of economic growth. After having declined notably in 2014, longer-term interest rates have increased somewhat, on net, over the first half of the year, but they remain at historically low levels. Broad measures of U.S. equity prices have been little changed, on balance, this year after having risen considerably in recent years. Credit flows to large nonfinancial businesses have remained solid, and financing generally appears to have become available to small businesses as well. Credit conditions for households have been mixed: While the availability of mortgage loans continues to expand gradually, mortgages remain relatively difficult to obtain for some individuals, and credit card lending standards and terms are tight for borrowers with below-prime scores. Meanwhile, auto and student loans continued to be widely available, and outstanding balances of such loans have continued to rise significantly.

Financial vulnerabilities in the United States overall have remained moderate since the previous *Monetary Policy Report.* Capital and liquidity positions at the largest banking firms have remained strong, maturity

transformation outside the banking system has continued to trend lower, and debt growth by the household sector has been modest. Valuation pressures in many fixed-income markets, while having eased, have remained notable; prices and valuation measures for commercial real estate have increased further; and borrowing by lower-rated businesses has continued at a rapid rate. Although market participants have expressed concerns about the resilience of liquidity during stress events, a variety of metrics do not suggest a significant deterioration in market liquidity; the Federal Reserve is watching developments closely. Foreign developments, such as the situation in Greece and financial conditions in China, could pose some risks to the United States if they lead to broader strains in those regions.

The FOMC has continued to judge that a high degree of policy accommodation remains appropriate to support continued progress toward maximum employment and price stability. As a result, it has maintained the exceptionally low target range of 0 to ¼ percent for the federal funds rate and has kept the Federal Reserve's holdings of longer-term securities at their current elevated levels to help maintain accommodative financial conditions. The Committee has reiterated that in deciding how long to maintain the current target range for the federal funds rate, it will consider a broad set of indicators to assess realized and expected progress toward its objectives. Since its April meeting, the Committee has stated it anticipates that raising the target range for the federal funds rate will be appropriate when it has seen further improvement in the labor market and is reasonably confident that inflation will move back to its 2 percent objective over the medium term. In the June SEP, most policymakers anticipated that these conditions would be met sometime this year. The Committee continues to expect that, even after employment and inflation are near mandate-consistent levels, economic conditions may, for some time, warrant keeping the target federal funds rate below levels the Committee views as normal in the longer run.

The Federal Reserve has continued to plan for the eventual normalization of the stance and conduct of monetary policy, including by testing the operational readiness of the policy tools to be used. The FOMC remains confident that it has the tools it needs to raise short-term interest rates when doing so becomes appropriate.

Part 1: Recent Economic and Financial Developments

Labor market conditions continued to improve over the first half of 2015, although at a more moderate pace than last year. Gains in payroll employment since the start of the year have averaged close to 210,000 per month, somewhat below last year's average pace, while the unemployment rate edged down slightly to 5.3 percent in June, close to most Federal Open Market Committee (FOMC) participants' estimates of its longer-run normal level. Since last summer, a steep drop in crude oil prices has exerted downward pressure on overall inflation, and price increases for other goods and services have been subdued, partly reflecting declines in prices for imported non-energy goods. The price index for personal consumption expenditures (PCE) increased only ¼ percent during the 12 months ending in May, a rate that is well below the FOMC's longer-run objective of 2 percent; the index excluding food and energy prices was up 1¼ percent over this period. Survey-based measures of longer-run inflation expectations have been fairly stable, whereas measures of inflation compensation derived from financial market quotes, while up from their lows earlier this year, remain below the levels that prevailed prior to last summer. Meanwhile, real gross domestic product (GDP) was reported to have been little changed in the first quarter of this year. Some of this weakness likely was the result of temporary factors, and recent indicators suggest that economic activity picked up in the second quarter; even so, the pace of output growth appears to have slowed so far this year, on average, relative to its pace last year. The economic expansion continues to be supported by rising real incomes driven by gains in employment and, recently, lower oil prices; by improving consumer and business confidence; and by accommodative monetary policy and generally favorable financial conditions. However, the low level of oil prices also pushed down investment spending in the energy sector early this year, and sluggish growth abroad and the higher foreign exchange value of the dollar have weighed on U.S. exports.

Domestic Developments

The labor market has continued to improve but at a more gradual pace . . .

Labor market conditions strengthened further over the first half of 2015 but at a more moderate pace

than last year. Payroll employment gains have averaged about 210,000 per month so far this year, a solid pace but down from an average of 260,000 jobs per month in 2014. The unemployment rate has continued to edge lower and reached 5.3 percent in June, ¼ percentage point lower than in December; in 2014, the unemployment rate declined more rapidly. In addition, the share of unemployed who have been out of work for more than six months has declined noticeably this year. After falling steeply during the recession and the early part of the recovery, the labor force participation rate has remained roughly flat since late 2013, although it ticked lower in June. The continued stability of the participation rate likely represents cyclical improvement relative to its declining trend, which reflects ongoing demographic trends such as the aging of members of the baby-boom generation into their retirement years. With employment rising and the participation rate holding steady, the employment-to-population ratio edged up further over the first half of this year. Furthermore, the job openings rate has continued to move up this year and now stands above its pre-recession level, and the quits rate, which is often considered a measure of workers' confidence in labor market opportunities, has remained at relatively high levels. Unemployment insurance claims are now very low.

. . . and some labor market slack remains . . .

With these improvements, the labor market has shown further progress toward the Committee's maximum employment mandate. Nevertheless, as described in the box "Slack in the Labor Market" on pages 6–7 of the July 2015 *Monetary Policy Report*, other labor market indicators are consistent with more slack in resource utilization than is indicated by the unemployment rate alone. In particular, although these measures have improved, the participation rate remains below most assessments of its trend, and the share of workers who are employed part time but would like to work full time is still high; in large part for this reason, the more comprehensive U-6 measure of labor underutilization remains elevated relative to the unemployment rate.

. . . while compensation has shown some signs of accelerating . . .

As the labor market has continued to improve, increases in some measures of hourly labor compensation have begun to pick up but, nonetheless, remain relatively subdued. The employment cost index (ECI) for private-industry workers, which measures both wages and the cost of employer-provided benefits, rose 2¾ percent over the 12 months ending in March, up from gains of about 2 percent that had prevailed over the past few years. Two other prominent measures of compensation—average hourly earnings and business-sector compensation per hour—have increased a bit more slowly than the ECI over the past year and have shown little sign of acceleration. Since the recession began, the gains in all three of these measures of nominal compensation have fallen well short of their pre-recession averages, and growth of real compensation has fallen short of productivity growth over much of this period. That said, the drop in energy prices boosted real wage growth over the past year.

. . . and productivity growth has been especially weak

Labor productivity in the business sector is reported to have declined in both the fourth quarter of 2014 and the first quarter of 2015, as the recovery in hours worked progressed even as output growth slowed. Over such short periods, however, productivity growth is often quite volatile, both because of difficulties in measuring output and hours and because other transitory factors may affect productivity growth from quarter to quarter. Taking a longer view, output per hour in the business sector has risen at an average annual rate of 1¼ percent since the recession began in late 2007, a gain that is modest by historical standards. The relatively slow pace of productivity growth since 2007 reflects, in part, the sustained weakness in capital investment over the recession and recovery period; consequently, productivity gains may improve in the future as investment in productivity-enhancing capital equipment and research and development strengthens.

A plunge in crude oil prices has held down consumer prices . . .

Overall consumer price inflation has slowed to near zero over the past year, well below the FOMC's longer-run objective of 2 percent. In May, the 12-month change in the overall PCE price index was only ¼ percent, down from 1¾ percent in May 2014. This deceleration importantly reflects the sharp drop in oil and farm commodity prices over this period as well as declines in non-energy import prices. However, energy prices have stabilized in recent months, with the result that one-month changes in overall PCE prices have firmed somewhat.

After plunging in the second half of 2014, the spot price of crude oil moved up somewhat in the first half of 2015, reflecting in part a sharp decline in investment in the U.S. energy sector. Over the past

few weeks, prices have moved lower as both U.S. and foreign oil production have been stronger than expected and as concerns about global growth persist. As of early July, at below $60 per barrel, the spot price of Brent crude oil remains at about half of its mid-2014 peak. Moreover, oil futures prices suggest that market participants expect only a moderate increase in oil prices over the next couple of years as global demand firms and North American supply growth slows. The large cumulative drop in crude oil prices was fully passed through to lower retail prices for gasoline and other energy products early this year. More recently, gasoline prices have increased somewhat, although prices at the pump remain at levels substantially below those of last summer.

Food commodity prices have fallen considerably from their levels of a year ago, and the gradual pass-through of these costs to the retail level has led to declines in consumer food prices over the first five months of this year. Meanwhile, non-oil import prices have been declining sharply so far this year, reflecting lower commodity prices as well as the rise since last summer in the exchange value of the dollar.

. . . and outside of the energy and food categories, inflation has remained subdued

Inflation for items other than food and energy (so-called core inflation) has remained relatively low. Core PCE prices rose about 1¼ percent over the 12 months ending in May, down slightly from its year-earlier pace. Falling import prices likely held down core inflation over the past year, and lower oil prices and easing prices for commodities more generally may have played a role in holding down firms' costs and prices. In addition, ongoing slack in labor and product markets has likely placed downward pressure on inflation, although with the improving labor market, the effect of this factor likely is waning.

Survey-based measures of longer-term inflation expectations have remained stable . . .

Because inflation expectations likely factor into wage- and price-setting decisions, the Federal Reserve tracks a variety of indicators of these expectations. Survey-based measures of longer-term inflation expectations have been quite stable over the past 15 years. Readings on inflation expectations over the next 5 to 10 years, as reported in the University of Michigan Surveys of Consumers, have continued to move within a narrow range, and, in the Survey of Professional Forecasters, conducted by the Federal Reserve Bank of Philadelphia, the median expectation for the annual rate of increase in the PCE price index over the next 10 years has been unchanged at 2 percent. Furthermore, in the Survey of Primary Dealers, conducted by the Federal Reserve Bank of New York, distributions of inflation expectations 5 to 10 years ahead have also remained stable.

. . . while market-based measures of inflation compensation have declined since last summer

In contrast, market-based measures of longer-term inflation compensation—derived from inflation swaps or from differences between yields on nominal Treasury securities and Treasury Inflation-Protected Securities (TIPS)—declined noticeably between the middle of 2014 and early this year, and, while they have retraced part of that decline in recent months, they remain below the levels that prevailed prior to last summer. Deducing the sources of changes in inflation compensation is difficult because such movements reflect not only expected inflation, but also an inflation risk premium—the compensation that holders of nominal securities demand for bearing inflation risk—as well as other factors. Nevertheless, one cannot rule out a decline in inflation expectations among market participants since last summer.

Economic activity slowed earlier this year

Real GDP is reported to have been little changed in the first quarter of this year after increasing 2½ percent in 2014. Some of this weakness likely reflected temporary disruptions due to unusually severe winter weather and a labor dispute at West Coast ports; in addition, residual seasonality in some components of GDP may have held down measured first-quarter growth.[1] Both of these factors would tend to boost measured GDP growth over the remainder of the year. Indeed, a number of recent spending indicators suggest that economic activity rose moderately in the second quarter.

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[1] *Residual seasonality* is the presence of a predictable seasonal pattern in data that have already been seasonally adjusted. For recent discussions of this issue, see Jason Furman (2015), "Second Estimate of GDP for the First Quarter of 2015," *Council of Economic Advisers Blog*, May 29, www.whitehouse.gov/blog/2015/05/29/second-estimate-gdp-first-quarter-2015; and Charles E. Gilbert, Norman J. Morin, Andrew D. Paciorek, and Claudia R. Sahm (2015), "Residual Seasonality in GDP," FEDS Notes (Washington: Board of Governors of the Federal Reserve System, May 14), www.federalreserve.gov/econresdata/notes/feds-notes/2015/residual-seasonality-in-gdp-20150514.html. The Bureau of Economic Analysis discusses its plans to revise seasonal adjustment procedures for GDP in its upcoming annual revision in Stephanie H. McCulla and Shelly Smith (2015), "Preview of the 2015 Annual Revision of the National Income and Product Accounts," Bureau of Economic Analysis, *Survey of Current Business* (June), www.bea.gov/scb/pdf/2015/06%20June/0615_preview_of_2015_annual_revision_of_national_income_and_product_accounts.pdf.

However, some of the slowdown in GDP growth relative to its pace last year likely reflects somewhat more persistent factors. In particular, expectations that the relative strength of the U.S. economy will lead to an earlier normalization of monetary policy than in our trading partners have contributed to a substantial appreciation of the dollar over the past year. The appreciation, combined with sluggish foreign growth, is weighing on the demand for U.S. exports. And the sizable drop in oil prices since last summer has led to marked cutbacks in investment in the energy sector of our economy even though those price declines have been a substantial benefit to households. These factors also contributed to the 2¾ percent annual rate of decline in industrial production in the first five months of this year. Despite the drag on production from these headwinds, the economic expansion continues to be supported by accommodative financial conditions—including the low cost of borrowing for many households and businesses—and by increases in households' real incomes spurred by continuing job gains and the earlier decline in oil prices.

Net exports were a substantial drag on real GDP growth in the first quarter

Exports fell markedly in the first quarter, held back by lackluster growth abroad, the appreciation of the dollar, and transitory factors, including the West Coast port labor dispute. In contrast, imports grew briskly in the first quarter, supported in part by the stronger dollar. As a result, net exports were an unusually large drag on real GDP growth. Trade data through May suggest that exports recovered from their first-quarter drop and import growth slowed, pointing to a small negative contribution from net exports in the second quarter. The current account deficit widened a bit to 2.6 percent of nominal GDP in the first quarter of this year but remains near its narrowest readings since the late 1990s.

Gains in income and wealth are supporting consumer spending . . .

The rate of growth in consumer spending slowed during this year's harsh winter but has picked up in recent months. Smoothing through these monthly fluctuations, real consumer spending increased at an average annual rate of 2¾ percent over the first five months of this year, about the same as its average pace over 2014. The ongoing improvement in the labor market has supported income growth, and low gasoline prices have boosted households' purchasing power. As a result, real disposable personal income—that is, income after taxes and adjusted for price changes—increased at an annual rate of nearly 4 percent over the first five months of this year, a slightly faster pace than in 2014.

Coupled with low interest rates, the rise in incomes has reduced debt payment burdens for many households. The household debt service ratio—that is, the ratio of required principal and interest payments on outstanding household debt to disposable personal income—has remained at a very low level by historical standards.

Consumer spending growth also continues to be supported by increases in household net worth. Over the first half of this year, broad measures of U.S. equity prices were little changed, on balance, after having risen considerably in recent years, and house prices moved up further. Buoyed by cumulative increases in home and equity prices, aggregate household net worth has risen appreciably from its levels during the recession and its aftermath to more than six times the value of disposable personal income.

. . . as is credit availability for consumers that remains generally favorable

Consumer credit has continued to expand this year. Auto and student loans remain widely available even to borrowers with lower credit scores, and outstanding balances of such loans expanded significantly through May. Credit card borrowing slowed early this year, likely reflecting weak retail activity, but has rebounded in recent months. However, credit card availability remains unusually tight for borrowers with below-prime credit scores.

Consumer confidence remains high

Indicators of consumer sentiment suggest that confidence among households remains high. The Michigan survey's index of consumer sentiment—which incorporates households' views about their own financial situations as well as broader economic conditions—moved up noticeably over the second half of 2014 as oil prices plunged and labor market conditions improved and has remained upbeat so far this year. Responses to the Michigan survey's question about households' expectations of real income changes over the next year or two have also moved up over the past year to their highest levels since before the recession.

The pace of homebuilding has improved only slowly

The recovery in residential investment continued at a gradual pace over the first half of this year. Smoothing through the effects of harsh winter weather,

single-family housing starts have edged up since last summer, while sales of new and existing homes have been trending up, on balance, over the past year. In addition, multifamily construction activity has recovered to its pre-recession level, reflecting a shift in demand toward rental units. All told, real residential investment looks set to post a moderate gain over the first half of the year. Nevertheless, overall construction activity remains well below its pre-recession levels, likely due to a rate of household formation that, notwithstanding tentative signs of a recent pickup, has generally run quite low relative to demographic norms since the recession.

The slow advances in single-family construction and home sales have likely been supported, at least to some degree, by low interest rates and a gradual easing in mortgage credit. In the April Senior Loan Officer Opinion Survey on Bank Lending Practices (SLOOS), banks reported having eased lending standards for a number of categories of residential mortgage loans in the first quarter.[2] Even so, loans remain difficult to obtain for potential borrowers with low credit scores as well as for any potential borrowers that cannot meet a number of other requirements, such as fully documenting their income and meeting debt-to-income ratios. Meanwhile, for qualified borrowers, interest rates for 30-year fixed mortgages remain near their historical lows despite having moved up somewhat, on net, over the first half of the year. Increases in house prices and mortgage rates have been balanced out by rising household incomes, with the result that standard measures of housing affordability have stayed flat at relatively high levels over the first half of this year. With the number of mortgage originations for home purchase still well below pre-crisis levels, aggregate net mortgage debt growth has continued to be quite sluggish.

Overall business investment has turned down as investment in the energy sector has plunged

Business investment (that is, private nonresidential fixed investment) fell at an annual rate of 2 percent in the first quarter, reflecting a sizable decline in investment in the equipment and structures used in the drilling and mining sector. The number of drilling rigs in operation has fallen precipitously this year in response to the earlier steep drop in crude oil prices, and a number of oil and gas companies have announced plans to cut capital expenditures this year. As a result, activity has also slowed markedly in sectors that supply oil production companies, including steel and certain types of machinery. The drop in drilling and mining investment subtracted more than ½ percentage point from first-quarter real GDP growth, and, with the contraction in that sector continuing, it likely took a similar amount off of GDP growth in the second quarter.

Business outlays for structures outside of the energy sector also declined in the first quarter, while spending on equipment and intellectual property products (E&I) increased at a modest 3½ percent annual rate. Forward-looking indicators, such as orders and shipments of capital goods and surveys of business conditions, point to continued modest gains in E&I investment in the second quarter. Overall business investment has been supported by low interest rates and generally accommodative financial conditions but has been held back by slowing business output growth, which reflects, in part, weakening exports by domestic businesses due to the stronger dollar.

Corporate financing conditions were generally favorable

Financing conditions for nonfinancial firms remained solid in the first half of the year. Although corporate profits as reported by the Bureau of Economic Analysis declined in the first quarter, profitability stayed high, and default rates on nonfinancial corporate bonds were generally low. Nonfinancial businesses have raised substantial amounts of funds in bond, equity, and loan markets so far this year, in part to finance a recent pickup in mergers and acquisitions activity. Bond issuance by both investment- and speculative-grade firms has remained quite strong, as firms continued to take advantage of historically low interest rates. Commercial and industrial loans on banks' books have expanded at a solid pace this year, in part reflecting narrower loan spreads. Meanwhile, financing conditions for small businesses continued to improve, although the growth of small business loans remained subdued, evidently reflecting still-tepid demand for credit from small business owners. In the first quarter, some banks with loans to firms in the oil and gas drilling or extraction sectors indicated they were reducing existing lines of credit to these firms and tightening standards on new loans or lines of credit.

In the commercial real estate (CRE) sector, financing remained broadly available. CRE loans on banks' books increased appreciably this year through May, consistent with stronger loan demand and a further easing of lending standards reported in the April

[2] The SLOOS is available on the Board's website at www.federalreserve.gov/boarddocs/snloansurvey.

SLOOS. Banks also reported that, over the past 12 months, they had eased spreads, increased maximum loan sizes, and extended the maximum maturity on such loans. Issuance of commercial mortgage-backed securities (CMBS) continued to be robust, and the spreads of CMBS rates over Treasury rates remained narrow.

The drag from federal fiscal policy has waned . . .

Fiscal policy at the federal level had been a factor restraining GDP growth for several years. However, the contractionary effects of fiscal policy changes eased appreciably last year as the restraining effects of the 2013 tax increases abated, transfers increased from the Affordable Care Act, and federal purchases flattened out after falling sharply from 2011 through 2013.

The federal unified deficit narrowed further this year, reflecting both previous years' spending cuts and an increase in tax receipts resulting from the ongoing economic expansion. Federal receipts have edged up to around 18 percent of GDP, their highest level in more than a decade. Meanwhile, nominal federal outlays as a share of GDP have flattened out at about 20 percent, still a little above the levels that prevailed before the start of the recession. As a result, the budget deficit currently stands at about 2½ percent of GDP, down considerably from its peak at nearly 10 percent during the recession. Overall federal debt held by the public stabilized as a share of GDP in 2014 and early 2015, albeit at a relatively high level.

. . . and state and local government expenditures are rising anemically

The expansion of economic activity and further gains in house prices—which should help boost property tax revenues over time—continue to support a gradual improvement in the fiscal positions of most state and local governments. Consistent with slowly improving finances, states and localities expanded employment slightly, on average, over 2014 and the first half of this year following several years of declines. In addition, these governments have increased outlays for construction projects somewhat over this period.

Financial Developments

Market expectations for the path of the federal funds rate over the next several years declined . . .

Despite the continued improvement in labor market conditions, market participants' expectations for the path of policy rates over the next several years shifted downward in the first half of 2015. Contributing to this shift were weak data on real economic activity in the first quarter of this year and Federal Reserve communications that were seen as more accommodative than expected—including the downward revisions to FOMC participants' projections for the federal funds rate, real GDP growth, inflation, and the longer-run unemployment rate, particularly in March. On balance, market-based measures of the expected path of the federal funds rate through late 2016 have flattened. The expected timing of the initial increase in the federal funds rate has been pushed out from mid-2015 toward the end of the year, although the expected pace of increases in the federal funds rate after 2016 is now somewhat faster. In the Survey of Primary Dealers and the Survey of Market Participants conducted by the Federal Reserve Bank of New York just prior to the June FOMC meeting, respondents judged that the initial increase in the target federal funds rate was most likely to occur at the FOMC's September 2015 meeting, about one quarter later than they had expected last December.[3] Meanwhile, as the anticipated date of the beginning of normalization has become closer, measures of policy rate uncertainty based on interest rate derivatives have continued to edge higher.

. . . and longer-term Treasury yields have remained low

Yields on longer-term Treasury securities have risen notably since early February, reversing the downward trend over the previous 13 months. However, they remain at historically low levels. On net, yields on 10- and 30-year nominal Treasury securities are 16 basis points and 43 basis points, respectively, above their levels at the end of 2014. The increases were most pronounced in longer-horizon forward rates. For example, the five-year forward rate five years ahead rose 42 basis points over the first half of 2015 and in early July after falling nearly 2 percentage points in 2014. U.S. Treasury yields continued to be especially sensitive to foreign monetary policy and political developments and movements in core European sovereign yields (for more details, see the section "International Developments"). Uncertainty about long-term interest rates has also risen somewhat amid higher realized volatility of long-term yields, fluctua-

3 The results of the Survey of Primary Dealers and of the Survey of Market Participants are available on the Federal Reserve Bank of New York's website at www.newyorkfed.org/markets/primarydealer_survey_questions.html and www.newyorkfed.org/markets/survey_market_participants.html, respectively.

tions in oil prices, and uncertainties surrounding the global outlook.

Consistent with moves in the yields on longer-term Treasury securities, yields on 30-year agency mortgage-backed securities (MBS)—an important determinant of mortgage interest rates—have increased about 20 basis points, on balance, so far in 2015.

Liquidity conditions in the Treasury and agency MBS markets were generally stable . . .

Indicators of Treasury market functioning remained broadly stable over the first half of 2015. While market commentary increasingly pointed to a possible deterioration in liquidity in these markets, a variety of liquidity metrics—including bid-asked spreads and bid sizes—have displayed no notable signs of liquidity pressures over the past half-year. Moreover, Treasury auctions generally continued to be well received by investors. (See the box "Liquidity Conditions in the Bond Market" on pages 20–21 of the July 2015 *Monetary Policy Report*.)

As in the Treasury market, liquidity conditions in the agency MBS market were generally stable. Dollar-roll-implied financing rates for production-coupon MBS—an indicator of the scarcity of agency MBS for settlement—suggested limited settlement pressures in these markets over the first half of 2015.

. . . as were short-term funding markets

Conditions in short-term dollar funding markets also remained broadly stable during the first half of 2015. Both unsecured and secured money market rates have stayed at modestly higher levels since late 2014 but continued to be close to the average rates observed since the federal funds rate reached its effective lower bound. Secured money markets generally functioned smoothly, but rates in these markets experienced some volatility in the first half of 2015, particularly around quarter-ends, consistent with moderate quarter-end funding pressures. Unsecured offshore dollar funding markets generally did not exhibit signs of stress.

Money market participants continued to focus on the ongoing testing of the Federal Reserve's monetary policy tools. The overnight reverse repurchase agreement (ON RRP) operations have continued to provide a soft floor for money market rates, and the combination of term and ON RRP operations supported these rates around quarter-ends.

Broad equity price indexes and stock market volatility were both little changed, on net, and risk spreads on speculative-grade corporate bonds narrowed slightly

Despite higher interest rates and notable declines in Wall Street analysts' projections for corporate earnings, broad measures of U.S. equity prices were little changed, on balance, over the first half of the year. Stock prices for firms in the utilities sector, which are more sensitive to interest rates, fell substantially. Implied volatility for the S&P 500 index, as calculated from options prices, was little changed, on net, and remained below its historical median level.

Corporate bond spreads for investment-grade firms were little changed and stayed close to their historical average levels. Spreads for speculative-grade bonds narrowed modestly—in part because of improvements for energy firms—and are somewhat below their historical norms. (For further related discussion, see the box "Developments Related to Financial Stability" on pages 24–25 of the July 2015 *Monetary Policy Report*.)

Bank credit expanded and bank profitability improved slightly

Aggregate credit provided by commercial banks increased at a solid pace in the first quarter of 2015. The expansion in bank credit reflected moderate loan growth coupled with continued expansion of banks' holdings of securities. The growth of loans on banks' books was generally consistent with the SLOOS reports of increased loan demand for most loan categories and further easing of lending standards for real estate loans over the first quarter of 2015. Meanwhile, delinquency and charge-off rates continued to improve across most major loan types.

Measures of bank profitability remained below their historical averages but improved slightly in the first quarter of 2015. Several subcomponents of noninterest income increased, although declining net interest margins continued to put downward pressure on the profitability of banks. Equity prices of large domestic bank holding companies (BHCs) have increased modestly, on net, since the end of last year. Credit default swap (CDS) spreads for large BHCs were about unchanged on balance.

The M2 measure of the money stock has increased at an average annualized rate of about 6 percent since January, somewhat faster than the pace of nominal GDP growth. Demand for liquid deposits and currency has continued to boost M2 growth.

Municipal bond markets functioned smoothly, but some issuers remained strained

Credit conditions in municipal bond markets have generally remained stable since the end of last year. Over that period, the MCDX—an index of CDS spreads for a broad portfolio of municipal bonds—increased slightly, while ratios of yields on 20-year general obligation municipal bonds to those on comparable-maturity Treasury securities moved down a bit.

Nevertheless, significant financial strains were still evident for some issuers. In particular, Puerto Rico, which continued to face challenges from subdued economic performance, severe indebtedness, and other fiscal pressures, could reportedly seek to restructure at least part of its debt.

International Developments

Sovereign bond yields are higher . . .

After declining, on balance, during the first few months of the year, sovereign yields in the advanced foreign economies (AFEs) began to climb rapidly in late April. In Germany, long-term yields traded at record lows in mid-April, in part in response to the initiation of the public-sector purchase program of the European Central Bank (ECB). However, the 10-year government bond yield subsequently rose about 60 basis points. Most of this rise appeared to reflect an increase in the term premium, which had likely become very low earlier in the year. However, the timing of this increase has no clear explanation. The rise in German yields also appeared to reflect higher expected short-term rates, which rose, at least in part, in response to euro-area inflation data that came in higher than had been expected. (For more discussion, see the box "Monetary Policy and Interest Rates in Advanced Economies" on page 27 of the July 2015 *Monetary Policy Report*.) More recently, however, German yields have moved back down some in reaction to developments in Greece.

Sovereign yields rose even more in other euro-area countries, especially in Greece. Since the previous report, negotiations among the Greek government, other European authorities, and the International Monetary Fund (IMF) over official financial assistance to Greece have been protracted. In late June, Greek authorities decided to hold a referendum on their creditors' proposals, stalling negotiations and resulting in the cash-strapped Greek government missing a payment of €1½ billion in principal to the IMF. With fears of a potential exit from the euro area and acute problems at Greek banks accelerating withdrawals of Greek bank deposits, Greek authorities declared a bank holiday and imposed capital controls. Negotiations resumed after Greek citizens voted to reject the creditor proposals, but the closure of the banks contributed to a further deterioration of economic conditions in Greece. Over the previous weekend, Greece and its creditors reached a preliminary agreement to begin negotiations on a new financing and adjustment program, subject to Greece completing several prior actions. Greek sovereign spreads spiked at the end of June, and Italian and Spanish sovereign spreads rose modestly. These spreads have since retraced substantially; as a result, Greek spreads remain somewhat wider since mid-February, and Italian and Spanish spreads are little changed.

. . . and the dollar remains well above levels of a year ago

The foreign exchange value of the dollar rose appreciably in the second half of 2014 and early 2015. It has changed little, on balance, since then. The dollar is stronger against emerging market economy (EME) currencies since February, as U.S. yields have risen and concerns about economic prospects for the EMEs mounted.

Equities in Europe and Japan have moved higher this year, buoyed by encouraging macroeconomic data. The Nikkei increased roughly 15 percent, boosted by stronger-than-expected consumer price releases and strong corporate earnings in addition to continued quantitative easing. EME equity prices are also generally higher. Notably, the Shanghai Composite index has been unusually volatile. It soared 60 percent in the first five months of 2015, reportedly reflecting repeated monetary policy easing measures and increased investor leverage. However, since mid-June, the index has dropped about 20 percent, on net, even while Chinese authorities have introduced a number of measures to stem the decline, including the People's Bank of China providing direct liquidity support to fund stock purchases.

In numerous foreign economies, economic growth stepped down in the first quarter

Economic growth slowed in the first quarter in many of our main trading partners. In China, weakness in exports and the real estate sector led to a significant step-down in GDP growth in the first quarter. Weak exports also constrained growth in Mexico and the United Kingdom. GDP contracted around ½ percent in Brazil. And, in Canada, real GDP also contracted in the first quarter, in part because lower oil prices weighed on investment in the energy sector and severe winter weather depressed consumption. Recent economic data for the second quarter have been mixed.

By contrast, in the euro area and Japan, economic growth picked up during the first quarter of 2015, and data thus far point to solid growth during the second quarter. Growth in these economies continues to receive support from highly accommodative monetary policies and lower commodity prices. Nevertheless, the situation in Greece remains a concern for the euro area.

After falling significantly at the beginning of the year, foreign inflation began to recover but remained low

Largely reflecting the plunge in oil prices last year, headline inflation fell further early in the year in the AFEs and the EMEs. However, as energy prices rebounded during the first half of the year, monthly foreign inflation readings also began to turn up. Nevertheless, 12-month inflation in a number of major trading partners remained substantially below their central banks' target, including in the euro area, Japan, and the United Kingdom.

In response, foreign central banks maintained highly accommodative monetary policies

A number of foreign central banks eased monetary policy. Some central banks cut policy rates, including those in Canada, China, India, and Korea. In several cases, including in Denmark, Sweden, and Switzerland, these cuts included moves that left policy rates negative. In addition to cutting benchmark rates, the People's Bank of China also lowered the reserve requirement ratio. The ECB launched a program to purchase public-sector securities, and the Bank of Japan continued to purchase assets at a rapid pace. Meanwhile, the Bank of England kept its policy rate at the historically low level of 0.5 percent, where it has been since March 2009.

Part 2: Monetary Policy

To support further progress toward maximum employment and price stability, the Federal Open Market Committee (FOMC) has kept the target federal funds rate at its effective lower bound and maintained the Federal Reserve's holdings of longer-term securities at sizable levels. At its two most recent meetings, the Committee indicated that it will be appropriate to raise the target range for the federal funds rate when it has seen further improvement in the labor market and is reasonably confident that inflation will move back to its 2 percent objective over the medium term. The Federal Reserve has continued to plan for the eventual normalization of monetary policy, including by testing the operational readiness of the policy tools to be used.

To support further progress toward its statutory objectives, the FOMC has kept the target federal funds rate at its lower bound . . .

The FOMC has maintained the target range of 0 to ¼ percent for the federal funds rate to support continued progress toward its statutory objectives of maximum employment and price stability. The Committee has further reiterated that, in determining how long to maintain this target range, it will assess realized and expected progress toward its objectives. This assessment will continue to take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments. Based on its assessment of those factors, the Committee maintained the judgment at its January meeting that it could be patient in beginning to normalize the stance of monetary policy, and it stated at its March meeting that a start of the normalization process remained unlikely at its April meeting.[4] Chair Yellen indicated that, subsequent to the April meeting, the FOMC would determine the timing of the initial increase in the target federal funds rate on a meeting-by-meeting basis, depending on its assessment of incoming economic information and its implications for the economic outlook.[5]

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[4] See Board of Governors of the Federal Reserve System (2015), "Federal Reserve Issues FOMC Statement," press release, January 28, www.federalreserve.gov/newsevents/press/monetary/20150128a.htm; and Board of Governors of the Federal Reserve System (2015), "Federal Reserve Issues FOMC Statement," press release, March 18, www.federalreserve.gov/newsevents/press/monetary/20150318a.htm.

[5] See Board of Governors of the Federal Reserve System (2015), "Transcript of Chair Yellen's FOMC Press Conference,"

Specifically, the FOMC anticipates that it will be appropriate to raise the target range for the federal funds rate when it has seen further improvement in the labor market and is reasonably confident that inflation will move back to its 2 percent objective over the medium term. While the Committee has not decided on the timing of the initial increase in the target range for the federal funds rate, according to the June Summary of Economic Projections (SEP), 15 of the 17 policymakers anticipated that conditions may warrant a first increase in the federal funds rate target sometime this year. (The June SEP is included as Part 3 of the July 2015 *Monetary Policy Report* on pages 37–50; it is also included in section 9 of this annual report.)

The Committee has reiterated that, when it decides to begin to remove policy accommodation, it will take a balanced approach consistent with its longer-run goals of maximum employment and inflation of 2 percent. Even after the initial increase in the target federal funds rate, the Committee's policy is likely to remain highly accommodative in order to support continued progress toward its objectives of maximum employment and 2 percent inflation.

In addition, the Committee continues to anticipate that, even after employment and inflation are near mandate-consistent levels, economic conditions may, for some time, warrant keeping the target federal funds rate below levels the Committee views as normal in the longer run. As pointed out by Chair Yellen in her recent press conferences, FOMC participants provide a number of explanations for this view, with many citing the residual effects of the financial crisis.[6] These effects are expected to ease gradually, but they are seen as likely to continue to constrain spending and credit availability for some time.

. . . and stressed that its policy decisions will be data dependent

In her recent speeches and press conferences, Chair Yellen emphasized that, while the return of the federal funds rate to a more normal level is likely to be gradual, forecasts of the appropriate path of the federal funds rate are conditional on individual projections for economic output, inflation, and other factors, and the Committee's actual policy decisions over time will be data dependent. The FOMC does not intend to embark on any predetermined course of tightening following an initial decision to raise the federal funds rate target range. Accordingly, if the expansion proves to be more vigorous than currently anticipated and inflation moves higher than expected, then the appropriate path would likely follow a higher and steeper trajectory; conversely, if conditions were to prove weaker, then the appropriate trajectory would be lower and less steep.

The size of the Federal Reserve's balance sheet has remained stable

The Committee has maintained its existing policy of reinvesting principal payments from its holdings of agency debt and agency mortgage-backed securities (MBS) in agency MBS and of rolling over maturing Treasury securities at auction. This policy, by keeping the Federal Reserve's holdings of longer-term securities at sizable levels, is expected to help maintain accommodative financial conditions by putting downward pressure on longer-term interest rates and supporting mortgage markets. In turn, those effects are expected to contribute to progress toward both the maximum employment and price-stability objectives of the FOMC.

After the conclusion of the large-scale asset purchase program at the end of October 2014 and with the continuation of the Committee's reinvestment policy, the Federal Reserve's total assets have held steady at around $4.5 trillion. Holdings of U.S. Treasury securities in the System Open Market Account (SOMA) have remained at $2.5 trillion, and holdings of agency debt and agency MBS at $1.8 trillion. Consequently, total liabilities on the Federal Reserve's balance sheet were largely unchanged.

Given the Federal Reserve's large securities holdings, interest income on the SOMA portfolio has continued to support substantial remittances to the U.S. Treasury Department. The Federal Reserve provided $96.9 billion of such distributions to the Treasury in 2014 and $21.7 billion during the first quarter of 2015.[7] Remittances total over $500 billion on a cumulative basis since 2008.

March 18, www.federalreserve.gov/mediacenter/files/FOMCpresconf20150318.pdf; and Board of Governors of the Federal Reserve System (2015), "Transcript of Chair Yellen's Press Conference," June 17, www.federalreserve.gov/mediacenter/files/FOMCpresconf20150617.pdf.

[6] See Board of Governors, "Transcript of Chair Yellen's FOMC Press Conference," March 18, and Board of Governors, "Transcript of Chair Yellen's Press Conference," June 17, in note 5.

[7] See Board of Governors of the Federal Reserve System (2015), "Federal Reserve System Publishes Annual Financial Statements," press release, March 20, www.federalreserve.gov/newsevents/press/other/20150320a.htm; and Board of Governors of the Federal Reserve System (2015), *Quarterly Report on Federal Reserve Balance Sheet Developments* (Washington: Board of Governors, May), www.federalreserve.gov/

The FOMC continued to plan for the eventual normalization of monetary policy . . .

FOMC meeting participants have continued their discussions about the eventual normalization of the stance and conduct of monetary policy.[8] The participants emphasized that, during the early stages of policy normalization, it will be a priority to ensure appropriate control over the federal funds rate and other short-term interest rates. Consequently, the discussions involved various tools that could be used to control the level of short-term interest rates, even while the balance sheet of the Federal Reserve remains very large, as well as approaches to eventually normalizing the size and composition of the Federal Reserve's balance sheet.

As was the case before the crisis, the Committee intends to adjust the stance of monetary policy during normalization primarily through actions that influence the level of the federal funds rate and other short-term interest rates. The Committee indicated that, when economic conditions warrant the commencement of policy firming, the Federal Reserve intends to continue to target a range for the federal funds rate that is 25 basis points wide, set the interest rate it pays on excess reserves (the IOER rate) equal to the top of the target range for the federal funds rate, and set the offering rate associated with an overnight reverse repurchase agreement (ON RRP) facility equal to the bottom of the target range for the federal funds rate. The Committee will further allow aggregate capacity of the ON RRP facility to be temporarily elevated to support policy implementation and will use other tools, such as term operations, as necessary. The Committee expects that it will be appropriate to reduce the capacity of the facility fairly soon after it commences policy firming. Regarding the balance sheet, the Committee intends to reduce securities holdings in a gradual and predictable manner primarily by ceasing to reinvest repayments of principal on securities held in the SOMA. The Committee noted that economic and financial conditions could change, and that it was prepared to make adjustments to its normalization plans if warranted. (For more information, see the box "Policy Normalization Principles and Plans: Additional Details" on page 35 of the July 2015 *Monetary Policy Report*.)

. . . including by testing the policy tools to be used

The Federal Reserve continued to test the operational readiness of its policy tools, conducting daily ON RRP operations and a series of term RRP operations. At its March meeting, the Committee approved further tests of term RRP operations over quarter-ends through January 2016.[9] In addition, the Federal Reserve conducted two further series of Term Deposit Facility (TDF) operations. In these TDF operations, the Federal Reserve eliminated the three-day lag between the execution of an operation and settlement that existed in previous tests. These operations showed that bank demand for term deposits continues to be strong even for incremental increases in yield.

To date, testing has progressed smoothly, and, in particular, short-term market rates have generally traded above the ON RRP rate, which suggests that the facility will be a useful supplementary tool for the FOMC in addition to the IOER rate to control the federal funds rate during the normalization process. Overall, testing operations reinforced the Federal Reserve's confidence in its view that it has the tools necessary to tighten policy at the appropriate time.

monetarypolicy/files/quarterly_balance_sheet_developments_report_201505.pdf.

8 See Board of Governors of the Federal Reserve System (2015), "Minutes of the Federal Open Market Committee, March 17–18, 2015," press release, April 8, www.federalreserve.gov/newsevents/press/monetary/20150408a.htm; and Board of Governors of the Federal Reserve System (2015), "Minutes of the Federal Open Market Committee, April 28–29, 2015," press release, May 20, www.federalreserve.gov/newsevents/press/monetary/20150520a.htm.

9 See Board of Governors, "Minutes of the Federal Open Market Committee, March 17–18, 2015," in note 8.

3 Financial Stability

The Federal Reserve promotes financial stability through its supervision and regulation of financial institutions; coordination of activities with domestic agencies through the Financial Stability Oversight Council (FSOC) and directly; and efforts to engage the global community in monitoring, supervision, and regulation that limit the risk and consequences of financial instability domestically and abroad.

A central tenet of the Federal Reserve's efforts in this area is the adoption of a macroprudential approach to supervision and regulation. Whereas a traditional—or microprudential—approach to supervision and regulation focuses on the safety and soundness of individual institutions, the macroprudential approach centers on the stability of the financial system as a whole.

In particular, the macroprudential approach informs the supervision of systemically important financial institutions, including large bank holding companies (BHCs), the U.S. operations of certain foreign banking organizations (FBOs), and financial market utilities (FMUs). In addition, the Federal Reserve serves as a "consolidated supervisor" of nonbank financial companies that have been designated by the FSOC as institutions whose distress or failure could pose a threat to the stability of the U.S. financial system as a whole (see "Financial Stability Oversight Council Activities" later in this section).

Furthermore, the changing nature of risks and fluctuations in financial markets and the broader economy require timely monitoring of conditions in domestic and foreign financial markets, among financial institutions, and in the nonfinancial sector in order to identify the buildup of vulnerabilities that might require further study or policy action.

Promotion of financial stability strongly complements the primary goals of monetary policy—price stability and full employment. A smoothly operating financial system promotes the efficient allocation of saving and investment, facilitating economic growth and employment. And price stability contributes not only to the efficient allocation of resources in the real economy, but also to reduced uncertainty and efficient pricing in financial markets, thereby supporting financial stability.

This section discusses key financial stability activities undertaken by the Federal Reserve in 2015, which include monitoring risks to financial stability; macroprudential supervision and regulation of large, complex financial institutions; and domestic and international cooperation and coordination.

Some of these activities are also discussed elsewhere in this annual report. A broader set of economic and financial developments are discussed in section 2, "Monetary Policy and Economic Developments," with the discussion that follows concerning surveillance of economic and financial developments focused on financial stability. The full range of activities associated with supervision of systemically important financial institutions, designated nonbank companies, and designated FMUs is discussed in section 4, "Supervision and Regulation."

Monitoring Risks to Financial Stability

Financial institutions are linked together through a complex set of relationships, and their condition depends on the economic condition of the nonfinancial sector. In turn, the condition of the nonfinancial sector is linked to the strength of financial institutions' balance sheets because the nonfinancial sector borrows from the financial sector. Research on financial stability is aimed at better understanding these complex linkages and has been an important part of Federal Reserve efforts in pursuit of overall economic stability (see box 1 for information on recent research).

In order to understand the interaction among these factors and consider appropriate policy responses,

Box 1. 2015 Research on Financial Stability

The macroprudential approach to ensuring financial stability builds on a substantial and growing body of research on the factors that lead to vulnerabilities in the financial system and how policies can mitigate such risks.

It remains the case, however, that understanding of the array of factors important for financial stability is incomplete and evolving. As a result, the Federal Reserve engages actively in financial stability research. This research seeks to improve understanding of related issues, engages the broader research community in policy issues, and often involves collaboration with academia and researchers at other domestic and international institutions.

Finally, research efforts by Federal Reserve staff reflect their attempts to identify and grapple with topics of concern to the Federal Reserve, and the views expressed are those of the individual authors and not those of the Federal Reserve. Examples of research on financial stability in 2015 include the following:

- **Identifying and measuring threats to financial stability.** Three research notes and a working paper developing measurement aspects of a forward-looking monitoring program to identify and track time-varying sources of systemic risk. The program distinguishes between shocks, which are difficult to prevent, and the vulnerabilities that amplify shocks, which can be addressed. Drawing on a substantial body of research, the authors identify leverage, maturity transformation, interconnectedness, complexity, and the pricing of risk as the primary vulnerabilities in the financial system. The monitoring program tracks these vulnerabilities in four sectors of the economy: asset markets, the banking sector, shadow banking, and the nonfinancial sector. Developments in 2015 include a method that applies fixed criteria (that is, a static algorithm) to a medium-sized set of indicators covering a fairly wide range of financial activities, a taxonomy of measures of interconnectedness, and a more disaggregated analysis of the ratio of credit to gross domestic product for implementing macroprudential policies.[1]

(continued on next page)

[1] See David Aikman, Michael Kiley, Seung Jung Lee, Michael Palumbo, and Missaka Warusawitharana (2015), "Mapping Heat in the U.S. Financial System: A Summary," FEDS Notes (Washington: Board of Governors of the Federal Reserve System, August 5), www.federalreserve.gov/econresdata/notes/feds-notes/2015/mapping-heat-in-the-us-financial-system-a-summary-20150805.html; David Aikman, Michael T. Kiley, Seung Jung Lee, Michael G. Palumbo, and Missaka N. Warusawitharana (2015), "Mapping Heat in the U.S. Financial System," Finance and Economics Discussion Series 2015-059 (Washington: Board of Governors of the Federal Reserve System, June), http://dx.doi.org/10.17016/FEDS.2015.059; Gazi Kara, Mary Tian, and Margaret Yellen (2015), "Taxonomy of Studies on Interconnectedness," FEDS Notes (Washington: Board of Governors of the Federal Reserve System, July 31), www.federalreserve.gov/econresdata/notes/feds-notes/2015/taxonomy-of-studies-on-interconnectedness-20150731.html; and William Bassett, Ainsley Daigle, Rochelle Edge, and Gazi Kara (2015), "Credit-to-GDP Trends and Gaps by Lender- and Credit-Type," FEDS Notes (Washington: Board of Governors of the Federal Reserve System, December 3), www.federalreserve.gov/econresdata/notes/feds-notes/2015/credit-to-gdp-trends-and-gaps-by-lender-and-credit-type-20151203.html.

the Federal Reserve maintains a flexible, forward-looking financial stability monitoring program to help inform policymakers of the financial system's vulnerabilities to a range of potential adverse events or shocks. Such a monitoring program is a critical part of a broader program in the Federal Reserve System to assess and address vulnerabilities in the U.S. financial system.

Federal Reserve Board staff regularly assess a standard set of vulnerabilities relevant for financial stability: asset valuations and risk appetite, leverage in the financial system, liquidity risks and maturity transformation by the financial system, and borrowing by the nonfinancial sector (households and nonfinancial businesses). These monitoring efforts inform internal discussions concerning both macroprudential supervision and regulatory policies and monetary policy. They also inform Federal Reserve interactions with broader monitoring efforts, such as those by the FSOC and the Financial Stability Board (FSB).

The more specific discussion that follows focuses on a subset of the most important developments over the course of 2015 concerning specific indicators, including asset valuations and risk appetite, leverage, maturity and risk transformation, and nonfinancial-sector borrowing.

Asset Valuations and Risk Appetite

Overvalued assets constitute a fundamental vulnerability because the unwinding of high prices can be destabilizing, especially if the assets are widely held and the values are supported by excessive leverage, maturity transformation, or risk opacity. Moreover, stretched asset valuations may be an indicator of a broader buildup in risk-taking. Nonetheless, it is very

Box 1. 2015 Research on Financial Stability—*continued*

- **Quantifying the aggregate effects of banking-sector losses.** A working paper summarizing the results of a research program at the Federal Reserve using tools in macroeconomics to derive quantitative estimates of the effect of capital shortfalls in the financial sector on aggregate economic activity. The macro spillover effects of capital shortfalls in the financial-intermediation sector are compared across five dynamic equilibrium models for policy analysis. Although all of the models considered share antecedents and a methodological core, each model emphasizes different transmission channels. This research program delivers "model-based confidence intervals" for the real and financial effects of shocks originating in the financial sector.[2]
- **The interplay of monetary and macroprudential policies.** A working paper examining the relative contribution of monetary and macroprudential policies as tools to achieve financial stability by estimating a quantitative general-equilibrium model with nominal rigidities and financial intermediation.[3]
- **Interest rates, secondary-market liquidity, and firm access to debt markets.** Two working papers studying the implications of nonconventional monetary policies and secondary-market liquidity for firm debt-financing decisions.[4]
- **The real effect of credit contractions.** Two forthcoming journal articles studying empirically the effects of credit contractions on the broader economy.[5]

2 See Luca Guerrieri, Matteo Iacoviello, Francisco B. Covas, John C. Driscoll, Michael T. Kiley, Mohammad Jahan-Parvar, Albert Queralto Olive, and Jae W. Sim (2015), "Macroeconomic Effects of Banking Sector Losses across Structural Models," Finance and Economics Discussion Series 2015-044 (Washington: Board of Governors of the Federal Reserve System, June), http://dx.doi.org/10.17016/FEDS.2015.044.

3 See Michael T. Kiley and Jae Sim (2015), "Optimal Monetary and Macroprudential Policies: Gains and Pitfalls in a Model of Financial Intermediation," Finance and Economics Discussion Series 2015-078 (Washington: Board of Governors of the Federal Reserve System, September), http://dx.doi.org/10.17016/FEDS.2015.078.

4 See Sirio Aramonte, Seung Jung Lee, and Viktors Stebunovs (2015), "Risk Taking and Low Longer-Term Interest Rates: Evidence from the U.S. Syndicated Loan Market," Finance and Economics Discussion Series 2015-068 (Washington: Board of Governors of the Federal Reserve System, July), http://dx.doi.org/10.17016/FEDS.2015.068; and David M. Arseneau, David E. Rappoport, and Alexandros Vardoulakis (2015), "Secondary Market Liquidity and the Optimal Capital Structure," Finance and Economics Discussion Series 2015-031 (Washington: Board of Governors of the Federal Reserve System, May), http://dx.doi.org/10.17016/FEDS.2015.031.

5 See Antonio Falato and Nellie Liang (forthcoming), "Do Creditor Rights Increase Employment Risk? Evidence from Loan Covenants," *Journal of Finance*; and Rodney Ramcharan, Stephane Verani, and Skander J. Van Den Heuvel (forthcoming), "From Wall Street to Main Street: The Impact of the Financial Crisis on Consumer Credit Supply," *Journal of Finance*.

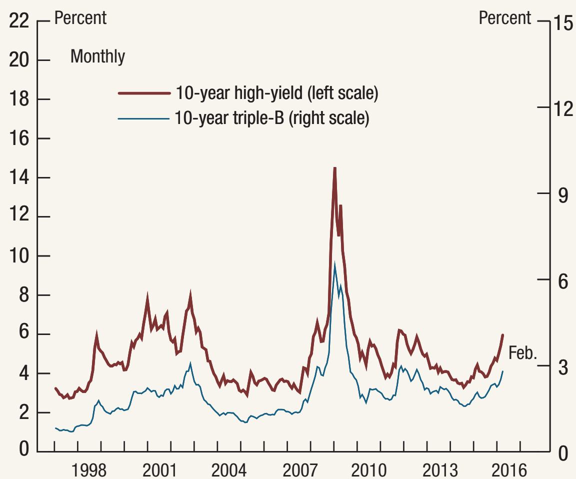
difficult to judge whether an asset price is overvalued relative to fundamentals. As a result, analysis typically considers a broad range of possible valuation metrics and tracks developments in areas in which asset prices are rising especially rapidly, into which investor flows have been considerable, or where volatility has been at unusually low or high levels.

Looking across markets, valuation pressures were more notable early in 2015, with a reduction in such pressures in some areas over the course of, and especially late in, the year. Throughout 2015, Treasury term premiums remained low. In private debt markets, valuation pressures eased through 2015. In the corporate bond market, spreads of high-yield and investment-grade bonds relative to comparable-maturity Treasury yields, a gauge of the compensation that investors demand for exposure to the credit risk of corporate borrowers, widened over the year, ending near the higher ends of their historical ranges (figure 1). Those spreads appear to have risen by more than the compensation required for higher expected losses, suggesting that risk premiums have also increased. Some of the widening in spreads, especially for high-yield borrowers, reflected increased concerns about the ability of firms in the energy sector to repay their borrowing as oil prices continued to decline over the course of the year.

Issuance of high-yield bonds declined steadily in 2015, particularly in the second half of the year, and issuance of leveraged loans remained stable (figure 2). As a result, issuance of risky debt in the fourth quarter of the year was close to the lowest level in recent years.

Despite these signs of easing valuation pressures, there were indications that the quality of corporate debt worsened. As described in more detail later, the level of risky debt ramped up in 2015, reaching

Figure 1. Corporate bond spreads to similar-maturity Treasury securities, 1997–2016

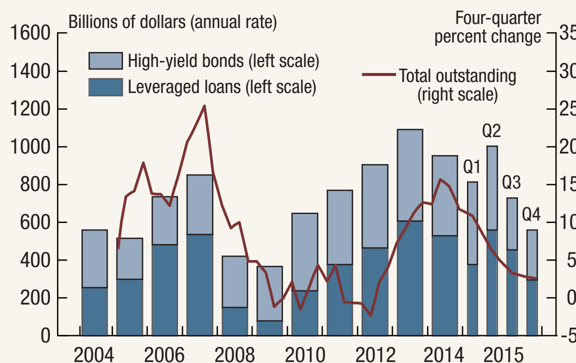


Note: The data extend through February 2016.

Source: Staff estimates based on corporate bond data from BofA Merrill Lynch Global Research (used with permission), computed using Nelson-Siegel yield curve model; semiannually compounded 10-year Treasury yield (par) estimated by Svensson term structure model.

record highs. Throughout the year, the volume of nonfinancial bonds that were downgraded by Moody's Investors Service significantly outpaced that of upgrades, and a measure of expected default of nonfinancial firms, Moody's KMV, rose steadily,

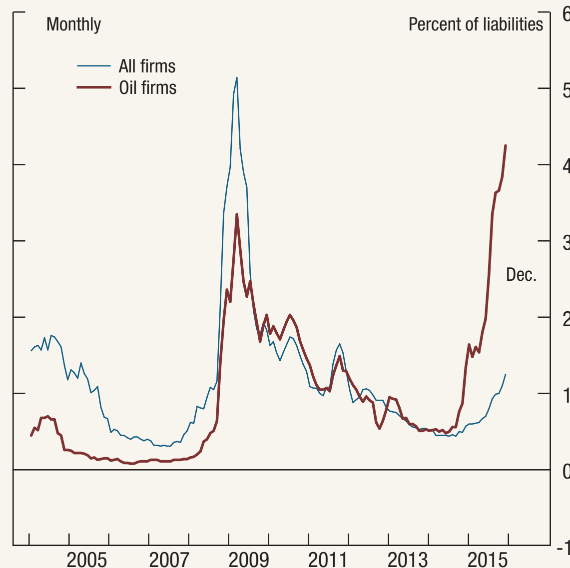
Figure 2. Leveraged loan and high-yield bond issuance, 2004–15



Note: Total outstanding is quarterly data, which start in 2005:Q1. Data include bonds and loans to both financial and nonfinancial companies, as well as unrated bonds and loans. For LCD and FISD, S&P and its third-party information providers expressly disclaim the accuracy and completeness of the information provided to the Board, as well as any errors or omissions arising from the use of such information. Further, the information provided herein does not constitute, and should not be used as, advice regarding the suitability of securities for investment purposes or any other type of investment advice.

Source: Standard & Poor's Leveraged Commentary & Data (LCD); Mergent Corporate Fixed Income (FISD).

Figure 3. Expected year-ahead defaults of nonfinancial firms, 2004–15



Note: The data extend through December 2015. Firm-level estimates of default weighted by firm liabilities as a percent of total liabilities, excluding defaulted firms.

Source: Moody's Analytics CreditEdge® (www.creditedge.com).

especially in the oil sector (figure 3). In addition, while indicators of the underwriting quality of leveraged loans showed a modest improvement, overall underwriting standards remained weak. Issuance of leveraged loans declined over the year but was robust in the first half. Market participants pointed to the leveraged lending guidance issued in 2013 as having affected the market.[1] Overall, despite the recent cooling of valuation pressures, the continued growth in debt among lower-rated corporations may place strains on these firms, especially if macroeconomic conditions turn out to be weaker than expected.

Forward price-to-earnings ratios were somewhat elevated over the year, although the equity premium, measured as the gap between the expected return on equity and the real long-term Treasury yield, is estimated to have remained near its historical norm. Although commercial real estate (CRE) lending standards did not ease, CRE prices rose and capitalization rates on CRE continued to decline, owing in

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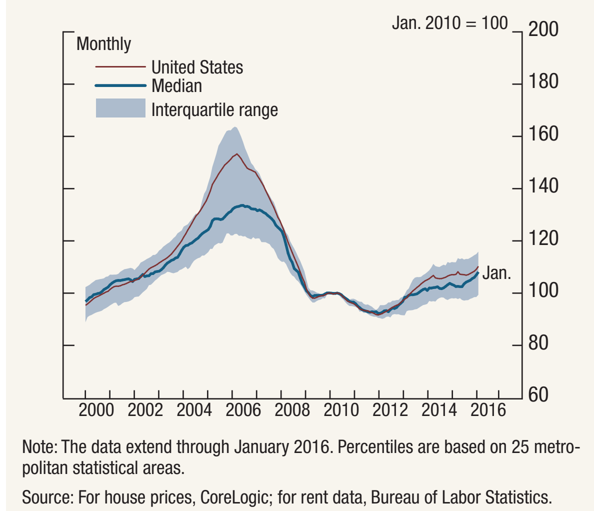
[1] For more details on the 2013 leveraged lending guidance, see Board of Governors of the Federal Reserve System (2013), "Interagency Guidance on Leveraged Lending," Supervision and Regulation Letter SR 13-3 (March 21; revised November 13, 2014), www.federalreserve.gov/bankinforeg/srletters/sr1303.htm.

Figure 4. Ratio of prices to rents, 2000–16



Note: The data extend through January 2016. Percentiles are based on 25 metropolitan statistical areas.

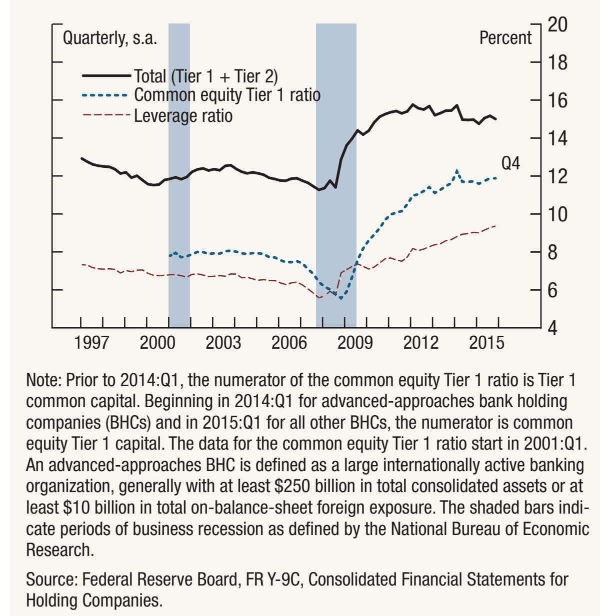
Source: For house prices, CoreLogic; for rent data, Bureau of Labor Statistics.

part to low interest rates.[2] In addition, residential real estate valuations appear within historical norms. For example, house prices relative to rents—one measure of valuations—have remained well within a typical range and continue to be far below the levels seen in the past decade across much of the country (figure 4).

Leverage in the Financial System

The financial strength of the banking sector continued to improve in 2015. Banks increased their capital ratios in order to meet the new stricter regulatory requirements set by Basel III. Both the ratio of Tier 1 common equity to risk-weighted assets and the leverage ratio have continued to rise and are far above the levels seen in the mid-2000s (figure 5). The increase in capital reflects the tougher standards implemented globally as part of the Basel III process and additional efforts implemented following the passage of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank Act), including more stringent standards and the annual stress tests for larger banking organizations. The Federal Reserve Board approved a final rule in July 2015 requiring the largest, most systemically important

Figure 5. Regulatory capital ratios, all BHCs, 1997–2015



Note: Prior to 2014:Q1, the numerator of the common equity Tier 1 ratio is Tier 1 common capital. Beginning in 2014:Q1 for advanced-approaches bank holding companies (BHCs) and in 2015:Q1 for all other BHCs, the numerator is common equity Tier 1 capital. The data for the common equity Tier 1 ratio start in 2001:Q1. An advanced-approaches BHC is defined as a large internationally active banking organization, generally with at least $250 billion in total consolidated assets or at least $10 billion in total on-balance-sheet foreign exposure. The shaded bars indicate periods of business recession as defined by the National Bureau of Economic Research.

Source: Federal Reserve Board, FR Y-9C, Consolidated Financial Statements for Holding Companies.

U.S. bank holding companies to further strengthen their capital positions. As discussed in more detail later, under the rule, a firm that is identified as a global systemically important bank holding company (G-SIB) will have to hold additional capital to increase its resilience in light of the greater threat it poses to the financial stability of the United States. Although delinquency rates on loans to the oil and gas industry have increased, these loans account for a small share of large banks' portfolios. Yet declining oil prices may pose a threat to the quality of the loan portfolio of small banks in some parts of the country with larger exposure to the oil industry. Overall, as a result of steady improvements in capital positions since the financial crisis, U.S. banks, in aggregate, appear to be better positioned to absorb potential shocks, such as those related to litigation, falling oil prices, and financial contagion stemming from abroad.

Securitization, which continues to be an important means of financing for several asset classes, remained relatively subdued—with issuance slowing notably in the second half of 2015, particularly for asset-backed securities (ABS)—and stayed muted through year-end, as more stringent issuance requirements became effective. New issuance also involved less maturity transformation than before the crisis, as there have been no notable volumes of asset-backed commercial paper programs and issuance of ABS collateralized debt obligations, with which pre-crisis maturity trans-

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[2] CRE lending standards remained the focus of bank supervision, as the federal banking agencies issued on December 18, 2015, a joint statement that reinforces existing guidance for prudent risk management of CRE lending activity. The statement is available at Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation, and Office of the Comptroller of the Currency (2015), "Agencies Issue Statement on Prudent Risk Management for Commercial Real Estate Lending," joint press release, December 18, www.federalreserve.gov/newsevents/press/bcreg/20151218a.htm.

formation was largely associated. Recent results from the Federal Reserve's Senior Credit Officer Opinion Survey on Dealer Financing Terms indicate that dealers somewhat tightened conditions for the use of financial leverage by their institutional investor clients to fund the purchases of securities in the last quarter of 2015.[3]

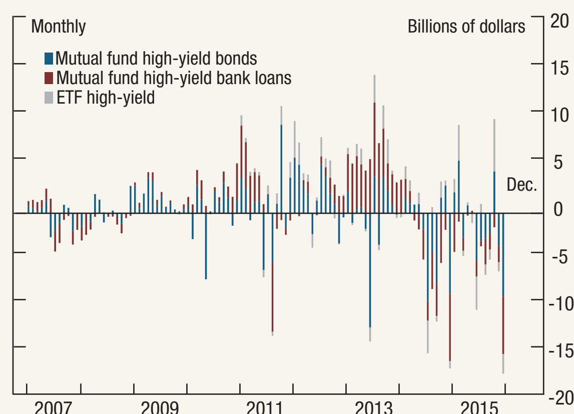
Liquidity Risks and Maturity Transformation by the Financial System

Bank balance sheets show that the quality of liquidity positions remained high in 2015 as the largest BHCs transitioned to Basel III liquidity requirements. The Basel III liquidity coverage ratio (LCR) requirement began phasing in for U.S. BHCs with greater than $250 billion in consolidated assets on January 1, 2015, and will take full effect in January 2017. In January 2016, a "modified" LCR requirement for BHCs with between $50 billion and $250 billion in assets began to be phased in. Against this backdrop, balance sheet data through 2015:Q3 show that the ratio of high-quality liquid assets to total assets at large- and medium-sized BHCs remained high and well above its pre-crisis levels.

Although short-term wholesale and dealer funding remained subdued throughout 2015, in line with recent years' trends, vulnerabilities from liquidity mismatches at high-yield bond and loan mutual funds have risen somewhat. These funds have grown rapidly in recent years and now hold a much higher fraction of the available stock of relatively less liquid assets—such as high-yield corporate debt, bank loans, and international debt—than they did before the financial crisis. It is possible that, because they may appear to offer greater liquidity than the markets in which they transact, these funds may pose a threat to financial stability if large forced sales in the underlying markets are triggered by outsized investor redemptions.

The surprise suspension of redemptions by a fixed-income fund that was liquidated in December 2015 highlighted concerns about liquidity mismatches at high-yield bond mutual funds that promise daily redemptions. While net outflows from high-yield and leveraged loan funds increased notably right after the suspension on December 9, the pace of outflows has steadily slowed in subsequent weeks, suggesting that

Figure 6. High-yield taxable bond mutual fund and ETF flows, 2007–15



Note: The data for exchange-traded fund (ETF) high-yield flows start in January 2011.

Source: Investment Company Institute (ICI), www.ici.org.

the event did not leave a lasting imprint on the broader corporate bond market (figure 6).

Borrowing by the Nonfinancial Sector

Excessive borrowing by the private nonfinancial sector has been an important contributor to financial crises in the past. Highly indebted households and nonfinancial businesses may have a difficult time withstanding negative shocks to incomes or asset values and may be forced to curtail spending in ways that amplify the effects of financial shocks. In turn, losses among households and businesses can lead to mounting losses at financial institutions, creating an "adverse feedback loop" in which weakness among households, nonfinancial businesses, and financial institutions causes further declines in income and financial losses, potentially leading to financial instability and a sharp contraction in economic activity.

Borrowing by households remained relatively subdued through 2015. At the same time, borrowing by the nonfinancial business sector grew moderately in the second half of the year. As a result, the ratio of household and nonfinancial business credit to nominal gross domestic product (GDP) has continued to grow at a rate roughly in line with nominal GDP and stayed significantly below the peak seen in the 2000s (figure 7). Nonetheless, this ratio remains above levels seen prior to the mid-2000s.

Within the household sector, the level of borrowing edged up among households with strong credit histo-

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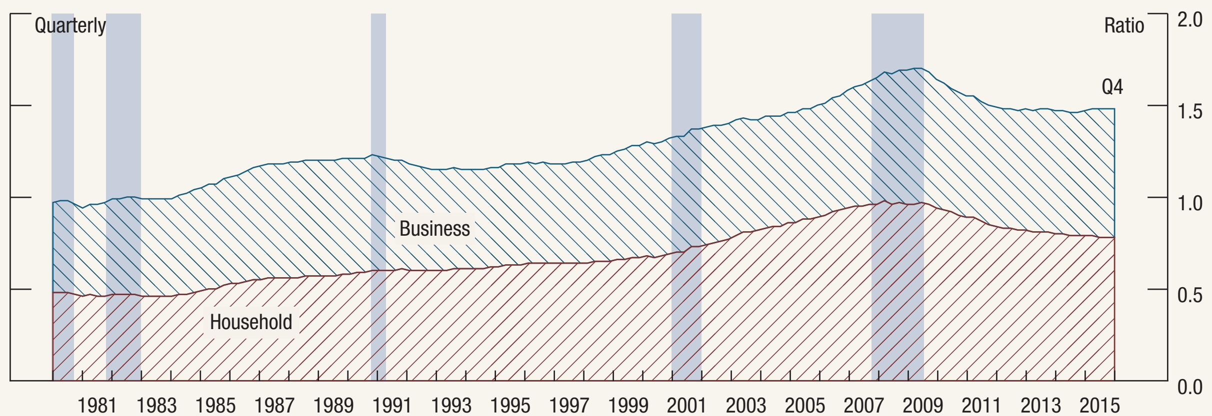
[3] The Senior Credit Officer Opinion Survey on Dealer Financing Terms is available on the Board's website at www.federalreserve.gov/econresdata/releases/scoos.htm.

Figure 7. Ratio of nonfinancial-sector credit to GDP, 1980–2015



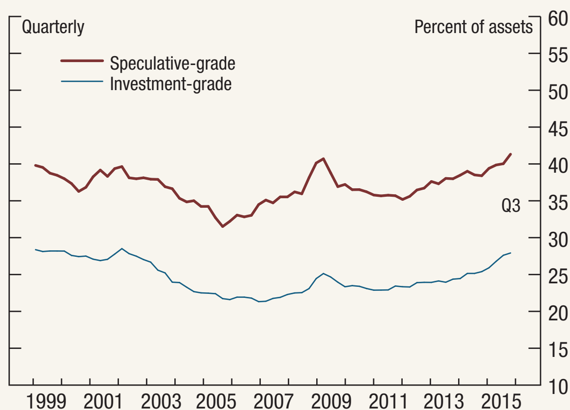
Note: GDP is gross domestic product. The shaded bars indicate periods of business recession as defined by the National Bureau of Economic Research.

Source: Federal Reserve Board, Statistical Release Z.1, "Financial Accounts of the United States."

ries, while borrowing by households with damaged credit histories—so-called subprime borrowing—contracted further, in the aggregate, in 2015. Although growth in residential real estate borrowing was moderate and driven by households with strong credit histories, there was continued and sizable growth in riskier credit segments—for example, in subprime auto lending—a trend that should be and is being monitored closely.

In the business sector, the rapid growth in borrowing in riskier segments of corporate debt markets, highlighted in the discussion of asset valuations earlier, led to a notable increase in leverage—that is, debt relative to book equity—among speculative-grade corporations, which now stands near or at multidecade highs (figure 8). The gross leverage ratio for speculative-grade firms rose spectacularly in the oil industry, as the book value of oil-related assets was written down. As noted in the earlier discussion, oil firms experienced sharp increases in expected year-ahead default probabilities amid increased leverage and heightened volatility of their assets. However, from an economy-wide perspective, firms in the oil industry account for only about 9 percent of the total speculative-grade debt outstanding, and the expected default rates of non-oil firms increased only modestly over the same period.

Figure 8. Gross leverage for investment-grade and speculative-grade firms, 1999–2015



Note: The data extend through 2015:Q3. Gross leverage is the ratio of the book value of total debt to total assets. For S&P, all rights reserved. For intended recipient only. No further distribution and/or reproduction permitted.

Source: Compustat North America © 2015 Standard & Poor's Financial Services LLC ("S&P").

Macroprudential Supervision and Regulation of Large, Complex Financial Institutions

Large, complex financial institutions interact with financial markets and the broader economy in a manner that may—during times of stress and in the absence of an appropriate regulatory framework and effective supervision—lead to financial instability.[4]

[4] For more on the Federal Reserve's supervision and regulation of large institutions, and especially related to the integration of the microprudential objective of safety and soundness of individual institutions with the macroprudential efforts outlined later in this section, see section 4, "Supervision and Regulation."

Key Supervisory Activities

One important element of enhanced supervision of large banking organizations is the stress-testing process, which includes the Dodd-Frank Act stress tests (DFAST) and the Comprehensive Capital Analysis and Review (CCAR). In addition to fostering the safety and soundness of the participating institutions, stress tests embed macroprudential elements by

- examining the loss-absorbing capacity of institutions under a common macroeconomic scenario that has features similar to the strains experienced in a severe recession and which includes, as appropriate, identified salient risks;
- conducting horizontal testing across large institutions to understand the potential correlated exposures; and
- considering the effects of counterparty distress on the largest, most interconnected firms.

The results from the 2015 supervisory stress tests conducted as part of DFAST and the related CCAR were both released in March 2015.[5] For DFAST 2015, the Federal Reserve conducted supervisory stress tests of 31 BHCs. The adverse and severely adverse supervisory scenarios that were used in 2015 feature U.S. and global recessions. In particular, the severely adverse scenario is characterized by a substantial global weakening in economic activity, including a severe recession in the United States, large reductions in asset prices, a significant widening of corporate bond spreads, and a sharp increase in equity market volatility. The adverse scenario is characterized by a global weakening in economic activity and an increase in U.S. inflationary pressures that, overall, result in a rapid increase in both short- and long-term U.S. Treasury rates. The results of the DFAST 2015 projections suggested that, in the aggregate, the 31 BHCs would experience substantial losses under both the adverse and the severely adverse scenarios. Over the nine quarters of the planning horizon, losses at the 31 BHCs under the severely adverse scenario were projected to be $490 billion. In CCAR 2015, the Federal Reserve did not object to the capital plan and intended capital distributions for 29 of the 31 BHCs.

Key Regulatory Activities

Over the course of 2015, the Federal Reserve has taken a number of steps to continue improving the resilience of financial institutions and the overall financial system, which are summarized as follows. First, in July, the Board finalized a rule that increases risk-based capital requirements for U.S. G-SIBs.[6] The final rule establishes the procedure for identifying a G-SIB and for calculating the appropriate bank-level G-SIB surcharge. The applicable surcharges are calibrated based on the systemic footprint of each U.S. G-SIB so that the amount of additional capital a firm must hold increases with the costs that its failure would impose in terms of U.S. financial stability. The G-SIB surcharge rule is designed to ensure that U.S. G-SIBs either hold substantially more capital, reducing the likelihood that they will fail, or choose to shrink their systemic footprint, reducing the harm that their failure would do to the financial system. G-SIBs will need to become compliant by January 2019 after a transition period that is set to begin on January 1, 2016.

Second, in December 2015, the Board announced it is seeking public comment on a proposed policy statement detailing the framework the Board would follow in setting the countercyclical capital buffer (CCyB) and voted to affirm the CCyB amount at the current level of 0 percent—consistent with the continued moderate level of financial vulnerabilities.[7] The buffer is a macroprudential tool that can be used to increase the resilience of the financial system by raising capital requirements on internationally active

[5] For additional information on DFAST, see Board of Governors of the Federal Reserve System (2015), *Dodd-Frank Act Stress Test 2015: Supervisory Stress Test Methodology and Results* (Washington: Board of Governors, March), www.federalreserve.gov/newsevents/press/bcreg/bcreg20150305a1.pdf.

For more details on CCAR, see Board of Governors of the Federal Reserve System (2015), *Comprehensive Capital Analysis and Review 2015: Assessment Framework and Results* (Washington: Board of Governors, March), www.federalreserve.gov/newsevents/press/bcreg/bcreg20150311a1.pdf.

[6] For more information, see Board of Governors of the Federal Reserve System (2015), "Federal Reserve Board Approves Final Rule Requiring the Largest, Most Systemically Important U.S. Bank Holding Companies to Further Strengthen Their Capital Positions," press release, July 20, www.federalreserve.gov/newsevents/press/bcreg/20150720a.htm. See also Board of Governors of the Federal Reserve System (2015), "Calibrating the GSIB Surcharge," white paper (Washington: Board of Governors, July), www.federalreserve.gov/aboutthefed/boardmeetings/gsib-methodology-paper-20150720.pdf.

[7] Details on the proposed framework are available at Board of Governors of the Federal Reserve System (2015), "Federal Reserve Board Seeks Public Comment on Proposed Policy Statement Detailing the Framework the Board Would Follow in Setting the Countercyclical Capital Buffer (CCyB)," press release, December 21, www.federalreserve.gov/newsevents/press/bcreg/20151221b.htm.

banking organizations when there is an elevated risk of above-normal losses in the future. The CCyB would then be available to help banking organizations absorb shocks associated with declining credit conditions. Implementation of the buffer could also help moderate fluctuations in the supply of credit. In releasing the framework for comment, the Board consulted with the Federal Deposit Insurance Corporation and the Office of the Comptroller of the Currency. Should the Board decide to increase the CCyB amount in the future, banking organizations would have 12 months before the change became effective, unless the Board established an earlier effective date.

Third, in October, the Board issued for public comment a proposed rule that would impose total loss-absorbing capacity and long-term debt requirements on U.S. G-SIBs and on the U.S. operations of certain foreign G-SIBs.[8] The proposal would require each covered firm to maintain a minimum amount of unsecured long-term debt that could be converted into equity in a resolution of the firm, thereby recapitalizing the firm without putting public money at risk. The proposal would diminish the threat that a G-SIB's failure would pose to financial stability and is an important step in addressing the perception that certain institutions are "too big to fail." Under the proposed rule, six banks would collectively need to raise an additional $120 billion, with full compliance not required until January 2022.

Finally, the Board, acting in conjunction with other federal regulatory agencies, issued a final rule imposing minimum margin requirements on certain derivatives transactions that are not centrally cleared.[9] The swap margin rule will reduce the risk that derivatives transactions would act as a channel for financial contagion and, by imposing higher margin requirements on uncleared swaps than apply to cleared swaps, will incentivize market participants to shift derivatives activity to central clearinghouses.

The enhanced prudential standards, together with stress testing and other regulatory safeguards, help ensure that large U.S. BHCs and FBOs operating in the United States have robust levels of capital and liquidity and strong risk management. Together, these efforts not only help guarantee that these firms are financially robust individually, but also limit the risk that financial distress at these firms could cause negative spillovers to the financial sector and the broader economy. Improvements in resolution planning will mitigate adverse effects from perceptions of "too big to fail" and contribute to more orderly conditions in the financial system if institutions face strains. For more information on recovery and resolution planning activity, see section 4, "Supervision and Regulation."

Domestic and International Cooperation and Coordination

The Federal Reserve cooperated or coordinated with both domestic and international institutions in 2015 to promote financial stability.

Financial Stability Oversight Council Activities

As mandated by the Dodd-Frank Act, the FSOC was created in 2010 and is chaired by the Treasury Secretary (box 2). It establishes an institutional framework for identifying and responding to sources of systemic risk. The Federal Reserve Chairman is a member of the FSOC.

Through collaborative participation in the FSOC, U.S. financial regulators monitor not only institutions, but the financial system as a whole. The Federal Reserve plays an important role in this macroprudential framework: It assists in monitoring financial risks, analyzes the implications of those risks for financial stability, and identifies steps that can be taken to mitigate those risks. In addition, when an institution is designated by the FSOC as systemically important, the Federal Reserve assumes responsibility for supervising that institution.

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8 See Board of Governors of the Federal Reserve System (2015), "Federal Reserve Board Proposes New Rule to Strengthen the Ability of Largest Domestic and Foreign Banks Operating in the United States to Be Resolved without Extraordinary Government Support or Taxpayer Assistance," press release, October 30, www.federalreserve.gov/newsevents/press/bcreg/20151030a.htm. For additional information, see Board of Governors of the Federal Reserve System (2015), "Total Loss-Absorbing Capacity, Long-Term Debt, and Clean Holding Company Requirements for Systemically Important U.S. Bank Holding Companies and Intermediate Holding Companies of Systemically Important Foreign Banking Organizations; Regulatory Capital Deduction for Investments in Certain Unsecured Debt of Systemically Important U.S. Bank Holding Companies," notice of proposed rulemaking (Docket No. R-1523), *Federal Register,* vol. 80 (November 30), pp. 74926–64, www.gpo.gov/fdsys/pkg/FR-2015-11-30/pdf/2015-29740.pdf.

9 See Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation, Office of the Comptroller of the Currency, Farm Credit Administration, and Federal Housing Finance Agency (2015), "Agencies Finalize Swap Margin Rule," joint press release, October 30, www.federalreserve.gov/newsevents/press/bcreg/20151030b.htm.

Box 2. Regular Reporting on Financial Stability Oversight Council Activities

The Financial Stability Oversight Council (FSOC), created under the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 and chaired by the Secretary of the Treasury Department, meets regularly to coordinate on financial stability topics that potentially affect the U.S. economy and discloses its activities.

Monthly meeting minutes. In 2015, the FSOC met monthly, and the minutes for each meeting are available on the U.S. Treasury website (www.treasury.gov/initiatives/fsoc/council-meetings/Pages/meeting-minutes.aspx).

FSOC annual report. On May 19, 2015, the FSOC released its fifth annual report (www.treasury.gov/initiatives/fsoc/studies-reports/Pages/2015-Annual-Report.aspx), which includes a review of key developments through the beginning of 2015 and a set of recommended actions that could be taken to ensure financial stability and to mitigate systemic risks that affect the economy.

For more on the FSOC, see www.treasury.gov/initiatives/fsoc/pages/home.aspx.

In 2015, the Federal Reserve worked, in conjunction with other FSOC participants, on the following major initiatives:

- **Following up on earlier public initiatives.** Such initiatives included the conference examining the asset management industry on May 19, 2014, and the request for public comments on asset management industry risks on December 18, 2014. The FSOC reviewed comment letters in response to the request for public comments, and the Federal Reserve has continued its ongoing analysis of potential risks to the financial system posed by the asset management industry. Specifically, the analysis has been focused on understanding the potential risks to the system associated with certain products and activities in the asset management industry relating to liquidity and redemptions, leverage, operational functions, and resolution.
- **Adoption of changes to nonbank designations process.** On February 4, 2015, the FSOC announced that it adopted changes and formalized practices relating to its process for reviewing nonbank financial companies for potential designation.[10] The changes adopted fall into three broad categories:

1. engagement with companies under consideration by the FSOC, which will be informed earlier when they come under review and will be provided with additional opportunities to engage with the council;
2. transparency to the broader public regarding the designations process; and
3. engagement during the FSOC's annual reevaluation of designations, with changes to the process for the council's annual reviews of its designations aimed at enabling more engagement between designated companies and the council and providing ample opportunity for companies to present information and to understand the council's analysis.

Financial Stability Board Activities

The Federal Reserve participates in international bodies, such as the FSB, given the interconnected global financial system and the global activities of large U.S. financial institutions.

The FSB is an international body that monitors the global financial system and promotes financial stability through the adoption of sound policies across countries. The Federal Reserve participates in the FSB, along with the Securities and Exchange Commission and the U.S. Treasury.[11]

In 2015, the Federal Reserve continued its active participation in the FSB. The FSB is engaged in several issues, including shadow banking, supervision of global systemically important financial institutions, and the development of effective resolution regimes for large financial institutions. In July, the FSB announced that it is delaying completion of the methodologies for designation of asset managers while it conducts more work on evaluating systemic risks from marketwide activities and assesses whether existing regulation is sufficient to address these risks.

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[10] For more information, see U.S. Department of the Treasury (2015), "Financial Stability Oversight Council Announces Changes to Nonbank Designations Process," press release, February 4, www.treasury.gov/press-center/press-releases/Pages/jl9766.aspx.

[11] See the Financial Stability Board website at www.financialstabilityboard.org.

4 Supervision and Regulation

The Federal Reserve has supervisory and regulatory authority over a variety of financial institutions and activities with the goal of promoting a safe, sound, and stable financial system that supports the growth and stability of the U.S. economy. As described in this report, the Federal Reserve carries out its supervisory and regulatory responsibilities and supporting functions primarily by

- promoting the safety and soundness of individual financial institutions supervised by the Federal Reserve;
- taking a macroprudential approach to the supervision of the largest, most systemically important financial institutions (SIFIs);[1]
- developing supervisory policy (rulemakings, supervision and regulation letters (SR letters), policy statements, and guidance);
- identifying requirements and setting priorities for supervisory information technology initiatives;
- ensuring ongoing staff development to meet evolving supervisory responsibilities;
- regulating the U.S. banking and financial structure by acting on a variety of proposals; and
- enforcing other laws and regulations.

2015 Developments

During 2015, the U.S. banking system and financial markets continued to improve following their recovery from the financial crisis that started in mid-2007.

Performance of bank holding companies. An improvement in bank holding companies' (BHCs) performance was evident during 2015. U.S. BHCs, in aggregate, reported earnings reaching an all-time high of $160 billion for 2015, up from $139 billion for the year ending December 31, 2014. The proportion of unprofitable BHCs continued to decline, reaching 2 percent, down from 4 percent in 2014, the lowest level since 1998. However, assets from unprofitable BHCs increased to 2.1 percent in 2015, up from 0.7 percent in 2014. Net interest margin continued to decline, reaching 2.1 percent, the lowest level in over 20 years. While provisions increased to 0.23 percent of average assets, up from 0.19 percent in 2014, they remained in line with historical lows. Nonperforming assets continued to decline, but remained elevated relative to historical levels at 2.8 percent of loans and foreclosed assets, down from 3.4 percent as of year-end 2014. (Also see "Bank Holding Companies" later in this section.)

Performance of state member banks. The performance at state member banks in 2015 improved from 2014. In aggregate, state member banks reported profits of $21.8 billion for 2015, up 15.3 percent from $18.9 billion in 2014. Return-on-assets (ROA) and return-on-equity (ROE) also improved, but both measures still lagged pre-crisis levels. The percent of profitable state member banks continued to increase and now exceeds pre-crisis levels, as only 2.4 percent of firms reported a loss for the year, down from 3.6 percent in 2014. Problem loans continued to decline from 1.8 percent of total loans in 2014 to 1.6 percent in 2015, and are now in line with pre-crisis levels. However, problem loans increased in state member bank commercial & industrial and agricultural loan portfolios due to increases in nonaccrual loans. Provisions (as a percent of revenue) increased to 2.7 percent after falling five consecutive years from a high of 32.4 percent in 2009 to a low of 2.2 percent in 2014. The risk-based capital ratios for state member banks slipped 32 basis points from 14.83 percent in 2014 to 14.51 percent in 2015, however the percent of banks deemed well capitalized under prompt corrective action standards increased slightly to 99.5 percent. In 2015, one state member bank, with $31.7 million in assets, failed. (Also see "State Member Banks" later in this section.)

[1] For a detailed discussion of macroprudential supervision and regulation, refer to section 3, "Financial Stability."

Box 1. Regulation of Global Systemically Important Banking Institutions

In 2015, the Board continued to advance its macroprudential regulatory program for global systemically important banking institutions (G-SIBs), the banking firms whose failure would cause the most harm to the U.S. financial system and the broader economy. In keeping with the Dodd-Frank Act's objective of protecting the financial stability of the United States by ending "too big to fail," the Board's rules for G-SIBs pursue two complementary goals: reducing the probability that a G-SIB will fail, and reducing the harm that a G-SIB's failure would cause.

G-SIB surcharge rule. In July 2015, the Board finalized a rule that raises the risk-based capital requirements for U.S. G-SIBs. The rule establishes a test for determining whether a BHC is a G-SIB based on an evaluation of its systemic footprint—that is, the amount of harm that its failure would do to the financial stability of the United States. This evaluation looks to quantitative measures in five broad categories: size, interconnectedness, substitutability, complexity, and cross-jurisdictional activity. Under this test, the eight U.S. BHCs that currently qualify as G-SIBs are Bank of America Corporation; The Bank of New York Mellon Corporation; Citigroup, Inc.; Goldman Sachs Group, Inc.; JP Morgan Chase & Co.; Morgan Stanley; State Street Corporation; and Wells Fargo & Company.

Under the rule, each U.S. G-SIB is assigned a capital surcharge that applies on top of the generally applicable capital requirements for BHCs. The surcharges are graduated based on each G-SIB's attributes in the five categories listed above and its reliance on runnable short-term wholesale funding. The Board has estimated that the surcharges will range from 1 percent to 4.5 percent of risk-weighted assets if the attributes of the U.S. G-SIBs remain the same as when the rule was issued. These surcharges will be phased in from 2016 to 2019.

The systemic footprint scores are recalculated regularly, meaning that a firm can reduce its surcharge going forward by reducing the harm to the financial system that its failure would cause. The rule thus confronts the U.S. G-SIBs with a choice to either hold substantially more capital, thereby reducing the likelihood that it will fail, or shrink its systemic footprint, reducing the impact of its failure. Either outcome would enhance U.S. financial stability.

Proposed TLAC rule. In October 2015, the Board issued for public comment a proposed rule to require the top-tier BHCs of U.S. G-SIBs and the U.S. intermediate holding companies of foreign G-SIBs to maintain minimum levels of unsecured, long-term debt and "total loss-absorbing capacity" (TLAC), which is made up of both capital and long-term debt. The proposal also prohibits covered holding companies (but not their operating subsidiaries) from engaging in certain financial activities, such as short-term debt issuance and derivatives contracts with third parties, that would pose a substantial risk to financial stability if the holding company were to fail.

If a covered holding company were to fail and enter resolution, its unsecured, long-term debt could be converted into equity to recapitalize the firm's critical operations. The TLAC proposal would particularly improve a G-SIB's resolvability under a "single-point-of-entry" strategy, pursuant to which the failed firm's recapitalized subsidiaries would continue to operate normally—limiting disruption to the financial system—while only the top-tier holding company would enter a resolution proceeding (such as bankruptcy). The TLAC proposal constitutes an important step forward in addressing the "too big to fail" problem by substantially reducing the harm a G-SIB's failure would do to U.S. financial stability.

Enhanced prudential standards. The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank Act) directs the Board, in part, to establish prudential standards in order to prevent or mitigate risks to U.S. financial stability that could arise from the material financial distress or failure, or ongoing activities of, large, interconnected financial institutions. In 2015, the Board established or proposed to establish a variety of enhanced prudential standards. (See "Enhanced Prudential Standards" later in this section for details.)

Regulation of global systemically important banking institutions (G-SIBs). The Board continued to advance its macroprudential regulatory program for G-SIBs, the banking firms whose failure would cause the most harm to the U.S. financial system and the broader economy. In this regard, the Board in 2015 issued a final rule that raises the risk-based capital requirements for G-SIBs, and issued for public comment a proposed rule to require the top-tier BHCs of U.S. G-SIBs and the U.S. intermediate holding companies of foreign G-SIBs to maintain minimum levels of unsecured, long-term debt and "total loss-absorbing capacity" (TLAC), which is made up of both capital and long-term debt. (See box 1 for more information).

Federal Reserve supervision of insurance companies. The Board is the consolidated supervisor of all BHCs, savings and loan holding companies (SLHCs), and nonbank financial companies that the

Financial Stability Oversight Council (FSOC) has determined should be subject to Federal Reserve supervision and prudential standards (nonbank financial companies). During 2015, the Board continued to develop and enhance its supervision of nonbank financial companies, SLHCs, and banking organizations, including those engaged in insurance activities, with a focus on consolidated risk exposures, financial strength, capital adequacy, and liquidity. (See box 2 for more information.)

Supervision

The Federal Reserve is the federal supervisor and regulator of all U.S. BHCs, including financial holding companies, and state-chartered commercial banks that are members of the Federal Reserve System. The Federal Reserve also has responsibility for supervising the operations of all Edge Act and agreement corporations, the international operations of state member banks and U.S. BHCs, and the U.S. operations of foreign banking organizations. Furthermore, through the Dodd-Frank Act, the Federal Reserve has been assigned responsibilities for nonbank financial firms and financial market utilities (FMUs) designated by the FSOC as systemically important. In addition, the Dodd-Frank Act transferred authority for consolidated supervision of more than 400 SLHCs and their non-depository subsidiaries from the former Office of Thrift Supervision (OTS) to the Federal Reserve.

In overseeing the institutions under its authority, the Federal Reserve seeks primarily to promote safety and soundness, including compliance with laws and regulations.

Safety and Soundness

The Federal Reserve uses a range of supervisory activities to promote the safety and soundness of financial institutions and maintain a comprehensive understanding and assessment of each firm. These activities include horizontal reviews, firm-specific examinations and inspections, continuous monitoring and surveillance activities, and implementation of enforcement or other supervisory actions as necessary. The Federal Reserve also provides training and technical assistance to foreign supervisors and minority-owned and de novo depository institutions.

Examinations and Inspections

The Federal Reserve conducts examinations of state member banks, FMUs, the U.S. branches and agencies of foreign banks, and Edge Act and agreement corporations. In a process distinct from examinations, it conducts inspections of holding companies and their nonbank subsidiaries. Whether an examination or an inspection is being conducted, the review of operations entails

- an evaluation of the adequacy of governance provided by the board and senior management, including an assessment of internal policies, procedures, controls, and operations;
- an assessment of the quality of the risk-management and internal control processes in place to identify, measure, monitor, and control risks;
- an assessment of the key financial factors of capital, asset quality, earnings, and liquidity; and
- a review for compliance with applicable laws and regulations.

Table 1 provides information on examinations and inspections conducted by the Federal Reserve during the past five years.

Consolidated Supervision

Consolidated supervision, a method of supervision that encompasses the parent company and its subsidiaries, allows the Federal Reserve to understand the organization's structure, activities, resources, risks, and financial and operational resilience. Working with other relevant supervisors and regulators, the Federal Reserve seeks to ensure that financial, operational, or other deficiencies are addressed before they pose a danger to the consolidated organization, its banking offices, or the broader economy.[2]

Large financial institutions increasingly operate and manage their integrated businesses across corporate boundaries. Financial trouble in one part of a financial institution can spread rapidly to other parts of the institution. Risks that cross legal entities or that are managed on a consolidated basis cannot be monitored properly through supervision that is directed at any one of the legal entity subsidiaries within the overall organization.

To strengthen its supervision of the largest, most complex financial institutions, the Federal Reserve created a centralized, multidisciplinary body called the Large Institution Supervision Coordinating

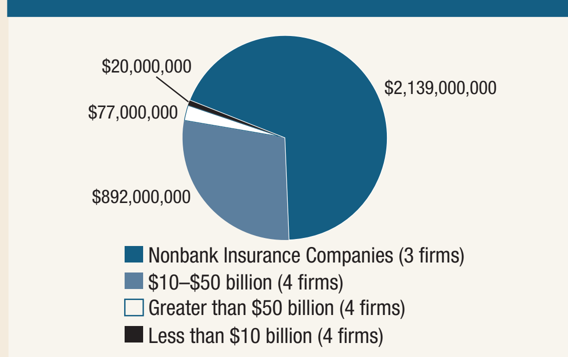
[2] "Banking offices" are defined as U.S. depository institution subsidiaries, as well as the U.S. branches and agencies of foreign banking organizations.

Box 2. Federal Reserve Supervision of Insurance Companies in 2015

The Board's supervision of banking organizations, including those engaged directly or indirectly in insurance activities, is focused on consolidated risk exposures, financial strength, capital adequacy, and liquidity. The Board's authority to supervise these companies is provided in the Bank Holding Company Act of 1956, the Home Owners' Loan Act, the International Banking Act, and the Dodd-Frank Act. Similar to its authorities related to large BHCs, the Board's authorities concerning nonbank financial companies include power to impose capital, liquidity, and risk-management requirements; conduct examinations and inspections; require the creation of intermediate holding companies; and take enforcement action, among other things.

In 2015, the Board supervised insurance firms representing approximately $3.1 trillion in total assets, illustrated in figure A. The Board supervised three nonbank financial companies with significant insurance activities—American International Group, Inc.; Prudential Financial, Inc.; and MetLife, Inc.[1] These companies have approximately $2.1 trillion in combined total assets. In addition, there are 12 insurance SLHCs (ISLHCs) with approximately $989 billion in combined total assets. For most of these ISLHCs, subsidiary savings associations account for less than 20 percent of their combined assets.

Figure A. Insurance company assets by portfolio
In thousands



Supervisory approach. The Board's supervisory approach to the three nonbank financial companies is generally consistent with the approach used for the largest BHCs but is tailored to account for different material characteristics of the firms. Specifically, the scope of consolidated supervision for nonbank financial companies is focused on enhancing the resiliency of the firm to lower the probability of its failure or inability to serve as a financial intermediary, reducing the impact that the firm's failure or material weakness could have on the financial stability of the United States. Additionally, the Board monitors developments at the nonbank financial companies and exercises its supervisory authority to foster safe and sound practices and to promote financial stability. For ISLHCs, one of the primary goals of the Board's consolidated supervision is to protect the depository institution subsidiaries from potential risks posed by the holding company and other affiliates.

The primary supervisors of the insurance activities of BHCs, SLHCs, state member banks, foreign banking organizations, and nonbank financial companies are the state or foreign authorities where the activities are conducted. Consistent with U.S. legal and regulatory frameworks, the Board works closely with other appropriate state, federal, and foreign regulators, through consultation, and reliance to the fullest extent possible on the examinations and reports of other regulators relating to supervised entities.

Enhanced prudential standards. The Dodd-Frank Act requires the Board to apply enhanced prudential standards and early remediation requirements to BHCs with at least $50 billion in consolidated assets and to nonbank financial companies. The Dodd-Frank Act authorizes the Board to tailor the application of these standards and requirements to different companies on an individual basis or by category. The Board is developing enhanced prudential standards, including standards regarding capital, for nonbank financial companies. These standards will be appropriately tailored and applied to the firms after a process of notice and comment.

Participation in the International Association of Insurance Supervisors (IAIS). The Board remains committed to tailoring insurance supervision to reflect the different business models and systemic footprints of insurers as compared to the other firms supervised by the Board. The Board's consolidated supervision supplements and complements the existing state-based legal-entity supervision, which focuses on policyholder protection, with a perspective that considers the risks across the entire enterprise. In addition, the Federal Reserve participates in the IAIS along with the U.S. Federal Insurance Office and National Association of Insurance Commissioners, working together to ensure that any international standard put forward by the IAIS best meets the needs of the U.S. insurance market, insurers, and consumers.

[1] In March 2016, the U.S. District Court in Washington, D.C. rescinded the FSOC designation of MetLife as a systemically important firm subject to Federal Reserve supervision. The effect of the court's action is that MetLife is no longer subject to Federal Reserve supervision.

Table 1. State member banks and bank holding companies, 2011–15

Entity/item	2015	2014	2013	2012	2011
State member banks					
Total number	839	858	850	843	828
Total assets (billions of dollars)	2,356	2,233	2,060	2,005	1,891
Number of examinations	698	723	745	769	809
By Federal Reserve System	392	438	459	487	507
By state banking agency	306	285	286	282	302
Top-tier bank holding companies					
Large (assets of more than $1 billion)					
Total number	547	522	505	508	491
Total assets (billions of dollars)	16,961	16,642	16,269	16,112	16,443
Number of inspections	709	738	716	712	672
By Federal Reserve System[1]	669	706	695	691	642
On site	458	501	509	514	461
Off site	211	205	186	177	181
By state banking agency	40	32	21	21	30
Small (assets of $1 billion or less)					
Total number	3,719	3,902	4,036	4,124	4,251
Total assets (billions of dollars)	938	953	953	983	982
Number of inspections	2,783	2,824	3,131	3,329	3,306
By Federal Reserve System	2,709	2,737	2,962	3,150	3,160
On site	123	142	148	200	163
Off site	2,586	2,595	2,814	2,950	2,997
By state banking agency	74	87	169	179	146
Financial holding companies					
Domestic	442	426	420	408	417
Foreign	40	40	39	38	40

[1] For large bank holding companies subject to continuous, risk-focused supervision, includes multiple targeted reviews.

Committee (LISCC) to oversee the supervision and evaluate conditions of supervised firms. The committee also develops cross-firm perspectives and monitors interconnectedness and common practices that could lead to systemic risk.

The framework for the consolidated supervision of LISCC firms and other large financial institutions was issued in December 2012.[3] This framework strengthens traditional microprudential supervision and regulation to enhance the safety and soundness of individual firms and incorporates macroprudential considerations to reduce potential threats to the stability of the financial system. The framework has two primary objectives:

1. **Enhancing resiliency of a firm to lower the probability of its failure or inability to serve as a financial intermediary.** Each firm is expected to ensure that the consolidated organization (or the combined U.S. operations in the case of foreign banking organizations) and its core business lines can survive under a broad range of internal or external stresses. This requires financial resilience by maintaining sufficient capital and liquidity, and operational resilience by maintaining effective corporate governance, risk management, and recovery planning.
2. **Reducing the impact on the financial system and the broader economy in the event of a firm's failure or material weakness.** Each firm is expected to ensure the sustainability of its critical operations and banking offices under a broad range of internal or external stresses. This requires, among other things, effective resolution planning that addresses the complexity and the interconnectivity of the firm's operations.

The framework is designed to support a tailored supervisory approach that accounts for the unique risk characteristics of each firm, including the nature and degree of potential systemic risk inherent in a

[3] For more information about the supervisory framework, see the Board's press release and SR letter 12-17/CA 12-14 at www.federalreserve.gov/newsevents/press/bcreg/20121217a.htm.

firm's activities and operations, and is being implemented in a multi-stage approach.

The Federal Reserve uses a range of supervisory activities to maintain a comprehensive understanding and assessment of each large financial institution:

- **Coordinated horizontal reviews**. These reviews involve examining several institutions simultaneously and encompass firm-specific supervision and the development of cross-firm perspectives. In addition, the Federal Reserve uses a multidisciplinary approach to draw on a wide range of perspectives, including those from supervisors, examiners, economists, financial experts, payments systems analysts, and other specialists. Examples include analysis of capital adequacy and planning through the Comprehensive Capital Analysis and Review (CCAR), as well as horizontal evaluations of resolution plans and incentive compensation practices.
- **Firm-specific examinations and/or inspections and continuous monitoring activities**. These activities are designed to maintain an understanding and assessment across the core areas of supervisory focus. These activities include review and assessment of changes in strategy, inherent risks, control processes, and key personnel, and follow-up on previously identified concerns (for example, areas subject to enforcement actions), or emerging vulnerabilities.
- **Interagency information sharing and coordination**. In developing and executing a detailed supervisory plan for each firm, the Federal Reserve generally relies to the fullest extent possible on the information and assessments provided by other relevant supervisors and functional regulators. The Federal Reserve actively participates in interagency information sharing and coordination, consistent with applicable laws, to promote comprehensive and effective supervision and limit unnecessary duplication of information requests. Supervisory agencies continue to enhance formal and informal discussions to jointly identify and address key vulnerabilities and to coordinate supervisory strategies for large financial institutions.
- **Internal audit and control functions**. In certain instances, supervisors may be able to rely on a firm's internal audit or internal control functions in developing a comprehensive understanding and assessment.

The Federal Reserve uses a risk-focused approach to supervision, with activities directed toward identifying the areas of greatest risk to financial institutions and assessing the ability of institutions' management processes to identify, measure, monitor, and control those risks. For medium- and small-sized financial institutions, the risk-focused consolidated supervision program provides that examination and inspection procedures are tailored to each organization's size, complexity, risk profile, and condition. The supervisory program for an institution, regardless of its asset size, entails both off-site and on-site work, including development of supervisory plans, pre-examination visits, detailed documentation, and preparation of examination reports tailored to the scope and findings of the examination.

Capital Planning and Stress Tests

Since the financial crisis, the Board has led a series of initiatives to strengthen the capital positions of the largest banking organizations. Two related initiatives are the CCAR and the Dodd-Frank Act stress tests (DFAST).

CCAR is a horizontal exercise to evaluate capital adequacy, internal capital planning processes, and planned capital distributions at large BHCs. In CCAR, the Federal Reserve assesses whether these BHCs have sufficient capital to withstand highly stressful operating environments and be able to continue operations, maintain ready access to funding, meet obligations to creditors and counterparties, and serve as credit intermediaries. Capital is central to a BHC's ability to absorb losses and continue to lend to creditworthy businesses and consumers. Through CCAR, a BHC's capital adequacy is evaluated on a forward-looking, post-stress basis as the BHCs are required to demonstrate in their capital plans how they will maintain, throughout a very stressful period, capital above minimum regulatory capital requirements. From a microprudential perspective, CCAR provides a structured means for supervisors to assess not only whether these BHCs hold enough capital, but also whether they are able to rapidly and accurately determine their risk exposures, including how those might evolve under stress, which is an essential element of effective risk management. From a macroprudential perspective, the use of a common scenario allows us to assess how a particular risk or combination of risks might affect the banking system as a whole under stressful conditions—not just individual institutions. The 2015 CCAR results are avail-

able at www.federalreserve.gov/newsevents/press/bcreg/bcreg20150311a1.pdf.

DFAST is a supervisory stress test conducted by the Federal Reserve to evaluate whether large BHCs and all nonbank financial companies designated by the FSOC have sufficient capital to absorb losses resulting from stressful economic and financial market conditions. The Dodd-Frank Act also requires BHCs and other financial companies supervised by the Federal Reserve to conduct their own stress tests. Together, the Dodd-Frank Act supervisory stress tests and the company-run stress tests are intended to provide company management and boards of directors, the public, and supervisors with forward-looking information to help gauge the potential effect of stressful conditions on the capital adequacy of these large banking organizations. The 2015 DFAST results are available at www.federalreserve.gov/newsevents/press/bcreg/bcreg20150305a1.pdf.

State Member Banks

At the end of 2015, a total of 1,829 banks (excluding nondepository trust companies and private banks) were members of the Federal Reserve System, of which 839 were state chartered. Federal Reserve System member banks operated 56,669 branches, and accounted for 34 percent of all commercial banks in the United States and for 71 percent of all commercial banking offices. State-chartered commercial banks that are members of the Federal Reserve, commonly referred to as state member banks, represented approximately 15 percent of all insured U.S. commercial banks and held approximately 16 percent of all insured commercial bank assets in the United States.

Under section 10 of the Federal Deposit Insurance Act, as amended by section 111 of the Federal Deposit Insurance Corporation Improvement Act of 1991 and by the Riegle Community Development and Regulatory Improvement Act of 1994, the Federal Reserve must conduct a full-scope, on-site examination of state member banks at least once a year,[4] although certain well-capitalized, well-managed organizations with total assets of less than $500 million may be examined once every 18 months.[5] The Federal Reserve conducted 392 exams of state member banks in 2015.

Bank Holding Companies

At year-end 2015, a total of 4,739 U.S. BHCs were in operation, of which 4,266 were top-tier BHCs. These organizations controlled 4,508 insured commercial banks and held approximately 97 percent of all insured commercial bank assets in the United States.

Federal Reserve guidelines call for annual inspections of large BHCs and complex smaller companies. In judging the financial condition of the subsidiary banks owned by holding companies, Federal Reserve examiners consult examination reports prepared by the federal and state banking authorities that have primary responsibility for the supervision of those banks, thereby minimizing duplication of effort and reducing the supervisory burden on banking organizations.

Inspections of BHCs, including financial holding companies, are built around a rating system introduced in early January of 2005. The system reflects the shift in supervisory practices away from a historical analysis of financial condition toward a more dynamic, forward-looking assessment of risk-management practices and financial factors. Under the system, known as RFI but more fully termed RFI/C(D), holding companies are assigned a composite rating (C) that is based on assessments of three components: Risk Management (R), Financial Condition (F), and the potential Impact (I) of the parent company and its nondepository subsidiaries on the subsidiary depository institution. The fourth component, Depository Institution (D), is intended to mirror the primary supervisor's rating of the subsidiary depository institution.[6] Noncomplex BHCs with consolidated assets of $1 billion or less are subject to a special supervisory program that permits a more flexible approach.[7] In 2015, the Federal Reserve

4 The Office of the Comptroller of the Currency examines nationally chartered banks, and the Federal Deposit Insurance Corporation examines state-chartered banks that are not members of the Federal Reserve.

5 The Financial Services Regulatory Relief Act of 2006, which became effective in October 2006, authorized the federal banking agencies to raise the threshold from $250 million to $500 million, and final rules incorporating the change into existing regulations were issued on September 21, 2007. Section 83001 of the FAST Act became effective on December 4, 2015, which raised the threshold from $500 million to $1 billion. The federal banking agencies initiated changes to rules to incorporate the change into existing regulations shortly thereafter to be effective for 2016 examinations.

6 Each of the first two components has four subcomponents: **Risk Management**—(1) Board and Senior Management Oversight; (2) Policies, Procedures, and Limits; (3) Risk Monitoring and Management Information Systems; and (4) Internal Controls. **Financial Condition**—(1) Capital, (2) Asset Quality, (3) Earnings, and (4) Liquidity.

7 The special supervisory program was implemented in 1997, most recently modified in 2013. See SR letter 13-21 for a discussion of the factors considered in determining whether a BHC is com-

Table 2. Savings and loan holding companies, 2011–15

Entity/item	2015	2014	2013	2012	2011[1]
Top-tier savings and loan holding companies					
Large (assets of more than $1 billion)[2]					
Total number	67	76	81	94	n/a
Total assets (billions of dollars)	1,525	1,493	1,500	1,715	n/a
Number of inspections	58	83	72	82	n/a
By Federal Reserve System[1]	57	82	71	80	n/a
On site	31	45	58	53	n/a
Off site	26	37	13	27	n/a
By states' Department of Insurance	1	1	1	2	n/a
Small (assets of $1 billion or less)					
Total number	194	221	251	272	n/a
Total assets (billions of dollars)	55	65	76	82	n/a
Number of inspections	187	212	258	229	n/a
By Federal Reserve System	187	212	258	229	n/a
On site	13	10	21	46	n/a
Off site	174	202	237	183	n/a

[1] Responsibility for SLHCs was transferred to the Board in 2011. Asset data are not available for year-end 2011 due to transition.
[2] Excludes SIFI SLHCs (AIG and GE).
n/a Not applicable.

conducted 669 inspections of large BHCs and 2,709 inspections of small, noncomplex BHCs.

Financial Holding Companies

Under the Gramm-Leach-Bliley Act, BHCs that meet certain capital, managerial, and other requirements may elect to become financial holding companies and thereby engage in a wider range of financial activities, including full-scope securities underwriting, merchant banking, and insurance underwriting and sales. As of year-end 2015, a total of 442 domestic BHCs and 40 foreign banking organizations had financial holding company status. Of the domestic financial holding companies, 25 had consolidated assets of $50 billion or more; 31, between $10 billion and $50 billion; 129, between $1 billion and $10 billion; and 257, less than $1 billion.

Savings and Loan Holding Companies

The Dodd-Frank Act transferred responsibility for supervision and regulation of SLHCs from the OTS to the Federal Reserve in July 2011. At year-end 2015, a total of 470 SLHCs were in operation, of which 261 were top tier SLHCs. These SLHCs control 266 thrift institutions and include 21 companies engaged primarily in nonbanking activities, such as insurance underwriting (12 SLHCs), securities brokerage (4 SLHCs), and commercial activities (5 SLHCs). Excluding nonbank SIFI SLHCs, the 25 largest SLHCs accounted for more than $1.4 trillion of total combined assets. Approximately 90 percent of SLHCs engage primarily in depository activities. These firms hold approximately 16 percent ($251 billion) of the total combined assets of all SLHCs. The Office of the Comptroller of the Currency (OCC) is the primary regulator for most of the subsidiary savings associations of the firms engaged primarily in depository activities. Table 2 provides information on examinations of SLHCs for the past five years.

Board staff continues to work on operational, policy, and supervisory issues while engaging the industry, Reserve Banks, and other regulatory agencies. Nearly all of the SLHCs are now filing all required Federal Reserve regulatory reports. Significant milestones achieved include the formal incorporation of Federal Reserve policies into the SLHC supervision program. Several complex policy issues continue to be addressed by the Board, including those related to consolidated capital requirements for insurance SLHCs (see box 2 for information about the Board's supervisory approach for insurance SLHCs), issues pertaining to intermediate holding companies for commercial SLHCs, and the adoption of formal rating systems.

Financial Market Utilities

FMUs manage or operate multilateral systems for the purpose of transferring, clearing, or settling payments, securities, or other financial transactions

plex or noncomplex (www.federalreserve.gov/bankinforeg/srletters/sr1321.htm).

among financial institutions or between financial institutions and the FMU. Under the Federal Reserve Act, the Federal Reserve supervises FMUs that are chartered as member banks or Edge Act corporations and coordinates with other federal banking supervisors to supervise FMUs considered bank service providers under the Bank Service Company Act.

In July 2012, the FSOC voted to designate eight FMUs as systemically important under title VIII of the Dodd-Frank Act. As a result of these designations, the Board assumed an expanded set of responsibilities related to these designated FMUs that include promoting uniform risk-management standards, playing an enhanced role in the supervision of designated FMUs, reducing systemic risk, and supporting the stability of the broader financial system. For certain designated FMUs, the Board established risk-management standards and expectations that are articulated in Board Regulation HH. In addition to setting minimum risk-management standards, Regulation HH establishes requirements for the advance notice of proposed material changes to the rules, procedures, or operations of a designated FMU for which the Board is the supervisory agency under title VIII. Finally, Regulation HH also establishes minimum conditions and requirements for a Federal Reserve Bank to establish and maintain an account for, and provide services to, a designated FMU. The Federal Reserve Banks maintain accounts for and provide services to several designated FMUs.

The Federal Reserve's risk-based supervision program for FMUs is administered by the FMU Supervision Committee (FMU-SC). The FMU-SC is a multidisciplinary committee of senior supervision, payment policy, and legal staff at the Board of Governors and Reserve Banks who are responsible for, and knowledgeable about, supervisory issues for FMUs. The FMU-SC's primary objective is to provide senior level oversight, consistency, and direction to the Federal Reserve's supervisory process for FMUs. The FMU-SC coordinates with the LISCC on issues related to the roles of LISCC firms in FMUs; the payment, clearing, and settlement activities of LISCC firms; and the FMU activities and implications for financial institutions in the LISCC portfolio.

In an effort to promote greater financial market stability and mitigate systemic risk, the Board works closely with the Securities and Exchange Commission (SEC) and the Commodity Futures Trading Commission (CFTC), both of which also have supervisory authority for certain FMUs. The Federal Reserve's work with these agencies under title VIII, including the sharing of appropriate information and participation in designated FMU examinations, aims to improve consistency in FMU supervision, promote robust FMU risk management, and improve regulators' ability to monitor and mitigate systemic risks.

Designated Nonfinancial Companies

Since 2013, the FSOC has designated four nonbank financial companies for supervision by the Board: American International Group, Inc.; General Electric Capital Corporation, Inc. (GECC); Prudential Financial, Inc.; and MetLife, Inc.[8]

The Federal Reserve's supervisory approach for designated companies is consistent with the approach used for the largest BHCs, tailored to account for different material characteristics of each firm. The Dodd-Frank Act requires the Board to apply enhanced prudential standards to the nonbank financial companies designated by the FSOC for supervision by the Board. The act authorizes the Board to tailor the application of these standards and requirements to different companies on an individual basis or by category. In July 2015, the Board issued a final order that established enhanced prudential standards for GECC. In the case of the remaining nonbank financial companies, which are primarily in the business of insurance, the Federal Reserve is developing enhanced prudential standards, including standards regarding capital. These standards will be appropriately tailored and applied to the firms after a process of notice and comment. Additionally, the Federal Reserve monitors developments at the designated nonbank financial companies and exercises its supervisory authority to foster safe and sound practices and to promote financial stability. (See box 2 for more information about the Board's supervisory approach for insurance firms.)

International Activities

The Federal Reserve supervises the foreign branches and overseas investments of member banks, Edge Act and agreement corporations, and BHCs (including the investments by BHCs in export trading companies). In addition, it supervises the activities that foreign banking organizations conduct through enti-

[8] In March 2016, the U.S. District Court in Washington, D.C., rescinded the FSOC's designation of MetLife as a systemically important firm subject to Federal Reserve supervision.The effect of the court's action is that MetLife is no longer subject to supervision by the Federal Reserve.

ties in the United States, including branches, agencies, representative offices, and subsidiaries.

Foreign operations of U.S. banking organizations. In supervising the international operations of state member banks, Edge Act and agreement corporations, and BHCs, the Federal Reserve generally conducts its examinations or inspections at the U.S. head offices of these organizations, where the ultimate responsibility for the foreign offices resides. Examiners also visit the overseas offices of U.S. banking organizations to obtain financial and operating information and, in some instances, to test their adherence to safe and sound banking practices and compliance with rules and regulations. Examinations abroad are conducted with the cooperation of the supervisory authorities of the countries in which they take place; for national banks, the examinations are coordinated with the OCC.

At the end of 2015, a total of 35 member banks were operating 429 branches in foreign countries and overseas areas of the United States; 19 national banks were operating 377 of these branches, and 16 state member banks were operating the remaining 52. In addition, 8 nonmember banks were operating 15 branches in foreign countries and overseas areas of the United States.

Edge Act and agreement corporations. Edge Act corporations are international banking organizations chartered by the Board to provide all segments of the U.S. economy with a means of financing international business, especially exports. Agreement corporations are similar organizations, state or federally chartered, that enter into agreements with the Board to refrain from exercising any power that is not permissible for an Edge Act corporation. Sections 25 and 25A of the Federal Reserve Act grant Edge Act and agreement corporations permission to engage in international banking and foreign financial transactions. These corporations, most of which are subsidiaries of member banks, may (1) conduct a deposit and loan business in states other than that of the parent, provided that the business is strictly related to international transactions and (2) make foreign investments that are broader than those permissible for member banks.

At year-end 2015, out of 41 banking organizations chartered as Edge Act or agreement corporations, 3 operated 7 Edge Act and agreement branches. These corporations are examined annually.

U.S. activities of foreign banks. Foreign banks continue to be significant participants in the U.S. banking system. As of year-end 2015, a total of 154 foreign banks from 49 countries operated 176 state-licensed branches and agencies, of which 6 were insured by the Federal Deposit Insurance Corporation (FDIC), and 49 OCC-licensed branches and agencies, of which 4 were insured by the FDIC. These foreign banks also owned 9 Edge Act and agreement corporations and 1 commercial lending company. In addition, they held a controlling interest in 46 U.S. commercial banks. Altogether, the U.S. offices of these foreign banks controlled approximately 20 percent of U.S. commercial banking assets. These 154 foreign banks also operated 91 representative offices; an additional 41 foreign banks operated in the United States through a representative office. The Federal Reserve—in coordination with appropriate state regulatory authorities—examines state-licensed, non-FDIC-insured branches and agencies of foreign banks on-site at least once every 18 months.[9] In most cases, on-site examinations are conducted at least once every 12 months, but the period may be extended to 18 months if the branch or agency meets certain criteria. As part of the supervisory process, a review of the financial and operational profile of each organization is conducted to assess the organization's ability to support its U.S. operations and to determine what risks, if any, the organization poses to the banking system through its U.S. operations. The Federal Reserve conducted or participated with state and federal regulatory authorities in 452 examinations of foreign banks in 2015.

Compliance with Regulatory Requirements

The Federal Reserve examines institutions for compliance with a broad range of legal requirements, including anti-money-laundering (AML) and consumer protection laws and regulations, and other laws pertaining to certain banking and financial activities. Most compliance supervision is conducted under the oversight of the Board's Division of Banking Supervision and Regulation (BS&R), but consumer compliance supervision is conducted under the oversight of the Division of Consumer and Community Affairs (DCCA).[10] The two divisions coordinate their efforts with each other and also with the Board's Legal Division to ensure consistent and comprehensive Federal Reserve supervision for compliance with legal requirements.

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[9] The OCC examines federally licensed branches and agencies, and the FDIC examines state-licensed FDIC-insured branches in coordination with the appropriate state regulatory authority.

[10] For a detailed discussion of consumer compliance supervision, refer to section 5, "Consumer and Community Affairs."

Anti-Money-Laundering Examinations

The Treasury regulations implementing the Bank Secrecy Act (BSA) generally require banks and other types of financial institutions to file certain reports and maintain certain records that are useful in criminal, tax, or regulatory proceedings. The BSA and separate Board regulations require banking organizations supervised by the Board to file reports on suspicious activity related to possible violations of federal law, including money laundering, terrorism financing, and other financial crimes. In addition, BSA and Board regulations require that banks develop written BSA compliance programs and that the programs be formally approved by bank boards of directors. The Federal Reserve is responsible for examining institutions for compliance with applicable AML laws and regulations and conducts such examinations in accordance with the Federal Financial Institutions Examination Council's (FFIEC) *Bank Secrecy Act/Anti-Money Laundering Examination Manual*.[11]

Specialized Examinations

The Federal Reserve conducts specialized examinations of supervised financial institutions in the areas of information technology, fiduciary activities, transfer agent activities, and government and municipal securities dealing and brokering. The Federal Reserve also conducts specialized examinations of certain nonbank entities that extend credit subject to the Board's margin regulations.

Information Technology Activities

In recognition of the importance of information technology to safe and sound operations in the financial industry, the Federal Reserve reviews the information technology activities of supervised financial institutions, as well as certain service providers that provide information technology services to these organizations. All safety-and-soundness examinations conducted by the Federal Reserve include a risk-focused review of information technology risk-management activities. During 2015, the Federal Reserve continued as the lead supervisory agency for 6 of the 16 large, multiregional data processing servicers recognized on an interagency basis.

During 2015, the Federal Reserve contributed to updates to the FFIEC Information Technology Examination Handbook (IT Handbook), which provides guidance to examiners, financial institutions, and technology service providers. The Management Booklet was substantially revised to reflect the importance of incorporating technology operations management into an institution's enterprise risk management program. The updated booklet addresses how changes in technology could introduce new sources of risk to the institution and emphasizes how IT risk management is an essential component of effective governance and operational risk management.

In addition, the Business Continuity Planning Booklet was updated with Appendix J, "Strengthening the Resilience of Outsourced Technology Services," to explain the components of an effective third-party management program to identify, measure, monitor, and control the risks associated with outsourcing. The appendix highlights the importance of business continuity planning at technology service providers that perform or support critical operations for financial institutions.

Fiduciary Activities

The Federal Reserve has supervisory responsibility for state member banks and state member nondepository trust companies, which hold assets in various fiduciary and custodial capacities. On-site examinations of fiduciary and custodial activities are risk-focused and entail the review of an organization's compliance with laws, regulations, and general fiduciary principles, including effective management of conflicts of interest; management of legal, operational, and reputational risk exposures; and audit and control procedures. In 2015, Federal Reserve examiners conducted 103 fiduciary examinations, excluding transfer agent examinations, of state member banks.

Transfer Agents

As directed by the Securities Exchange Act of 1934, the Federal Reserve conducts specialized examinations of those state member banks and BHCs that are registered with the Board as transfer agents. Among other things, transfer agents countersign and monitor the issuance of securities, register the transfer of securities, and exchange or convert securities. On-site examinations focus on the effectiveness of an organization's operations and its compliance with relevant securities regulations. During 2015, the Federal Reserve conducted transfer agent examinations

[11] The FFIEC is an interagency body of financial regulatory agencies established to prescribe uniform principles, standards, and report forms and to promote uniformity in the supervision of financial institutions. The council has six voting members: the Board of Governors of the Federal Reserve System, the FDIC, the National Credit Union Administration, the OCC, the Consumer Financial Protection Bureau, and the chair of the State Liaison Committee.

at nine state member banks that were registered as transfer agents.

Government and Municipal Securities Dealers and Brokers

The Federal Reserve is responsible for examining state member banks and foreign banks for compliance with the Government Securities Act of 1986 and with the Treasury regulations governing dealing and brokering in government securities. Fourteen state member banks and six state branches of foreign banks have notified the Board that they are government securities dealers or brokers not exempt from the Treasury's regulations. During 2015, the Federal Reserve conducted six examinations of broker–dealer activities in government securities at these organizations. These examinations are generally conducted concurrently with the Federal Reserve's examination of the state member bank or branch.

The Federal Reserve is also responsible for ensuring that state member banks and BHCs that act as municipal securities dealers comply with the Securities Act Amendments of 1975. Municipal securities dealers are examined, pursuant to the Municipal Securities Rulemaking Board's rule G-16, at least once every two calendar years. Four entities supervised by the Federal Reserve that dealt in municipal securities were examined during 2015.

Securities Credit Lenders

Under the Securities Exchange Act of 1934, the Board is responsible for regulating credit in certain transactions involving the purchasing or carrying of securities. As part of its general examination program, the Federal Reserve examines the banks under its jurisdiction for compliance with Board Regulation U (Credit by Banks and Persons other than Brokers or Dealers for the Purpose of Purchasing or Carrying Margin Stock). In addition, the Federal Reserve maintains a registry of persons other than banks, brokers, and dealers who extend credit subject to Regulation U. The Federal Reserve may conduct specialized examinations of these lenders if they are not already subject to supervision by the Farm Credit Administration (FCA) or the National Credit Union Administration (NCUA).

Cybersecurity and Critical Infrastructure

The Federal Reserve is actively engaged in raising financial institution awareness of supervisory expectations relative to cybersecurity risk assessment and risk mitigation. In 2015, Federal Reserve examiners continued to conduct targeted cybersecurity assessments at a select group of large financial institutions and FMUs. The Federal Reserve also contributed to the FFIEC joint statements on cyber attacks involving extortion, cyber attacks compromising credentials, and destructive malware. These statements and other resources are available on the FFIEC cybersecurity awareness web page, which is a central repository for FFIEC-related materials on cybersecurity (www.ffiec.gov/cybersecurity.htm).

The Federal Reserve continued to contribute to interagency groups such as the Financial and Banking Information Infrastructure Committee, the Cybersecurity Forum for Independent and Executive Branch Regulators, and the FFIEC's Cybersecurity and Critical Infrastructure Working Group (CCIWG) to share information and collaborate on cyber- and critical infrastructure-related issues impacting the financial services sector. In 2015, the CCIWG released a Cybersecurity Assessment Tool to help institutions identify their risks and determine their cybersecurity preparedness. The assessment tool provides a repeatable and measurable process for financial institutions to measure their cybersecurity preparedness over time.

The Federal Reserve also collaborated with the U.S. Treasury to plan and execute several financial services sector-wide tabletop exercises in 2015. The exercises focused on strategic, operational, and tactical considerations that tested both government and private sector processes and capabilities for addressing cyber incidents across the financial services sector. In addition, the Board coordinated with the U.S. Treasury and the Bank of England to plan the first international financial services sector cybersecurity tabletop exercise. The Resilient Shield exercise was a collaborative public–private initiative with an international dimension, focused on responding to a significant cyber-incident impacting the financial services sectors in both the United States and the United Kingdom (U.K.). The exercise focused on enhancing processes and mechanisms for maintaining a shared awareness of cybersecurity threats between the U.S. and U.K. governments and furthering a mutual understanding of each country's cybersecurity information-sharing processes and incident response coordination structures.

The Federal Reserve also announced an expansion of its Emergency Communications System (ECS) to include contact information of employees at Federal Reserve-supervised financial institutions who are capable of acting upon cyber emergencies. The Fed-

eral Reserve previously issued guidance to highlight the supervisory practices that the Federal Reserve can employ when financial institutions and their customers are affected by a major disaster or emergency. The Federal Reserve enhanced its communications capabilities by expanding the ECS contact information in response to heightened efforts by cyber criminals to penetrate financial institutions.

Enforcement Actions

The Federal Reserve has enforcement authority over the financial institutions it supervises and their affiliated parties. Enforcement actions may be taken to address unsafe and unsound practices or violations of any law or regulation. Formal enforcement actions include cease and desist orders, written agreements, prompt corrective action directives, removal and prohibition orders, and civil money penalties. In 2015, the Federal Reserve completed 51 formal enforcement actions. Civil money penalties totaling $2,197,656,265 were assessed. As directed by statute, all civil money penalties are remitted to either the Treasury or the Federal Emergency Management Agency. Enforcement orders and prompt corrective action directives, which are issued by the Board, and written agreements, which are executed by the Reserve Banks, are made public and are posted on the Board's website (www.federalreserve.gov/apps/enforcementactions/).

In 2015, the Reserve Banks completed 90 informal enforcement actions. Informal enforcement actions include memoranda of understanding (MOU), commitment letters, and board of directors' resolutions.

Surveillance and Off-Site Monitoring

The Federal Reserve uses automated screening systems to monitor the financial condition and performance of state member banks and BHCs in the period between on-site examinations. Such monitoring and analysis helps direct examination resources to institutions that have higher risk profiles. Screening systems also assist in the planning of examinations by identifying companies that are engaging in new or complex activities.

The primary off-site monitoring tool used by the Federal Reserve is the Supervision and Regulation Statistical Assessment of Bank Risk model (SR-SABR). Drawing mainly on the financial data that banks report on their Reports of Condition and Income (Call Reports), SR-SABR uses econometric techniques to identify banks that report financial characteristics weaker than those of other banks assigned similar supervisory ratings. To supplement the SR-SABR screening, the Federal Reserve also monitors various market data, including equity prices, debt spreads, agency ratings, and measures of expected default frequency, to gauge market perceptions of the risk in banking organizations. In addition, the Federal Reserve prepares quarterly Bank Holding Company Performance Reports (BHCPRs) for use in monitoring and inspecting supervised banking organizations. The BHCPRs, which are compiled from data provided by large BHCs in quarterly regulatory reports (FR Y-9C and FR Y-9LP), contain, for individual companies, financial statistics and comparisons with peer companies. BHCPRs are made available to the public on the National Information Center (NIC) website, which can be accessed at www.ffiec.gov.

Federal Reserve analysts use Performance Report Information and Surveillance Monitoring (PRISM), a querying tool, to access and display financial, surveillance, and examination data. In the analytical module, users can customize the presentation of institutional financial information drawn from Call Reports, Uniform Bank Performance Reports, FR Y-9 statements, BHCPRs, and other regulatory reports. In the surveillance module, users can generate reports summarizing the results of surveillance screening for banks and BHCs. During 2015, two major and two minor upgrades to the web-based PRISM application were completed to enhance the user's experience and provide the latest technology.

The Federal Reserve works through the FFIEC Task Force on Surveillance Systems to coordinate surveillance activities with the other federal banking agencies.

Training and Technical Assistance

The Federal Reserve provides training and technical assistance to foreign supervisors and minority-owned depository institutions.

International Training and Technical Assistance

In 2015, the Federal Reserve continued to provide technical assistance on bank supervisory matters to foreign central banks and supervisory authorities. Technical assistance involves visits by Federal Reserve staff members to foreign authorities as well as consultations with foreign supervisors who visit the Board of Governors or the Reserve Banks.

The Federal Reserve offered a number of training courses exclusively for foreign supervisory authori-

ties, both in the United States and in many foreign jurisdictions. Federal Reserve staff also took part in technical assistance and training assignments led by the International Monetary Fund, the World Bank, and the Financial Stability Institute. The Federal Reserve also contributed to the regional training provision under the Asia Pacific Economic Cooperation Financial Regulator's Training Initiative.

Training partners that collaborated with the Federal Reserve during 2015 to organize regional training programs also included The South East Asian Central Banks Research and Training Centre, The Caribbean Group of Bank Supervisors, Banque de France, the Central Bank of the United Arab Emirates, the Union of Arab Banks, and Banco de Portugal.

The Federal Reserve is an associate member of the Association of Supervisors of Banks of the Americas (ASBA), an umbrella group of bank supervisors from countries in the Western Hemisphere. The Federal Reserve contributes significantly to ASBA's organizational management and to its training and technical assistance activities. The group, headquartered in Mexico,

- promotes communication and cooperation among bank supervisors in the region;
- coordinates training programs throughout the region with the help of national banking supervisors and international agencies; and
- aims to help members develop banking laws, regulations, and supervisory practices that conform to international best practices.

Efforts to Support Minority-Owned Depository Institutions

The Federal Reserve System implements its responsibilities under section 367 of the Dodd-Frank Act primarily through its Partnership for Progress (PFP) program. Established in 2008, this program promotes the viability of minority depository institutions (MDIs) by facilitating activities designed to strengthen their business strategies, maximize their resources, and increase their awareness and understanding of regulatory topics. In addition, the Federal Reserve continues to maintain the PFP website, which supports MDIs by providing them with technical information and links to useful resources (www.fedpartnership.gov). Representatives from each of the 12 Reserve Bank districts, along with staff from the Board of Governors, continue to offer technical assistance tailored to MDIs by providing targeted supervisory guidance, identifying additional resources, and fostering mutually beneficial partnerships between MDIs and community organizations. As of year-end 2015, the Federal Reserve's MDI portfolio included 18 state member banks.

Throughout 2015, the Federal Reserve System continued to support MDIs through the following activities:

- co-organized the bi-annual 2015 Interagency Minority Depository Institutions and Community Development Financial Institutions (CDFI) Bank Conference. PFP staff at the Board of Governors and Federal Reserve Banks co-hosted this meeting with staff from the OCC and FDIC. The theme was "Celebrating 150 Years of MDIs: Changes, Challenges, and Opportunities," with over 200 people in attendance;
- formalized a partnership between the Board's DCCA and BS&R divisions to share management of the PFP program and diversify the resources and programing available to MDIs in 2016;
- participated in the 88th annual National Bankers Association (NBA) convention;
- provided technical assistance to MDIs on a wide variety of topics, including topics focused on improving regulatory ratings, navigating the regulatory applications process, the Community Reinvestment Act, and refining capital-planning practices;
- created formal procedures related to monitoring MDI-related proposals and continuing to offer pre-review of MDI applications to support early identification and resolution of issues that could create delays in the review process;
- in conjunction with DCCA, conducted joint outreach efforts to educate MDIs on community reinvestment and supervisory topics; and
- participated in an interagency task force to consider and address supervisory challenges facing MDIs.

Throughout 2015, PFP representatives hosted and participated in numerous banking workshops and seminars aimed at promoting and preserving MDIs, including the NBA's Legislative and Regulatory Conference. Further, program representatives continued to collaborate with community leaders, trade groups, the CDFI Fund, and other organizations to seek support for MDIs.

Supervisory Policy

The Federal Reserve's supervisory policy function, carried out by the Board, is responsible for developing regulations and guidance for financial institutions under the Federal Reserve's supervision, as well as guidance for examiners. The Board, often in concert with the OCC and the FDIC (together, the federal banking agencies), issues rulemakings, public SR letters, and other policy statements and guidance in order to carry out its supervisory policies. Federal Reserve staff also take part in supervisory and regulatory forums, provide support for the work of the FFIEC, and participate in international policymaking forums, including the Basel Committee on Banking Supervision (BCBS), the Financial Stability Board, the Joint Forum, and the International Association of Insurance Supervisors (IAIS).[12]

Consistent with the Federal Reserve's risk-focused approach to supervision and when permitted by law, the Federal Reserve tailors supervisory rules and guidance in a way that applies the most stringent requirements to the largest, most complex banking organizations that pose the greatest risk to the financial system.

Enhanced Prudential Standards

The Board is responsible for issuing a number of rules and guidance statements under the Dodd-Frank Act, sometimes in conjunction with other agencies. Listed below are the initiatives undertaken by the Board in 2015.

- In July, the Board issued a final rule requiring the largest, most systemically important U.S. BHCs to further strengthen their capital positions. Under the rule, a firm identified as a global systemically important bank holding company is required to hold additional capital to increase its resiliency in light of the greater threat it poses to U.S. financial stability. The final rule establishes the method for identifying whether a U.S. BHC is a G-SIB, and establishes a surcharge requirement that is calibrated to each firm's overall systemic risk. The final rule builds on a G-SIB capital surcharge framework agreed to by the BCBS and is augmented to address the risk arising from the overreliance on short-term wholesale funding. The G-SIB surcharge will generally be higher than under the BCBS approach. Failure to maintain the capital surcharge will subject the G-SIB to restrictions on capital distributions and certain discretionary bonus payments. The final rule is available at www.gpo.gov/fdsys/pkg/FR-2015-08-14/pdf/2015-18702.pdf.
- In July, the Board issued a final order establishing enhanced prudential standards for GECC, a nonbank financial company designated by the FSOC for supervision by the Board (also see "Designated Nonfinancial Companies" earlier in this section). Because of the substantial similarity of GECC's current activities and risk profile to that of a large BHC, the enhanced prudential standards are similar to those applied to large BHCs. To take into account General Electric's announced timeline to substantially shrink GECC's systemic footprint and retain only those business lines that support General Electric's core industrial businesses, the final order provides for application of enhanced prudential standards in two phases. The final order is available at https://federalregister.gov/a/2015-18124.
- In October, the Board proposed a rule that would strengthen the ability of the largest domestic and foreign banks operating in the United States to be resolved without extraordinary government support or taxpayer assistance. The proposed rule would apply to firms identified by the Board as G-SIBs and to U.S. operations of foreign G-SIBs, and would require these firms to meet a new long-term debt requirement and a new TLAC requirement. The proposed requirements will bolster financial stability by improving the ability of banking organizations covered by the rule to withstand financial stress and failure without imposing losses on taxpayers. In addition, the proposed rule would require the parent holding company of a U.S. G-SIB to avoid entering into certain financial arrangements that would create obstacles to an orderly resolution. The proposed rule is available at www.gpo.gov/fdsys/pkg/FR-2015-11-30/pdf/2015-29740.pdf.
- In November, the Board issued a final rule modifying its capital plan and stress testing rules that will take effect for the 2016 capital plan and stress testing cycle. Specifically, the final rule makes targeted amendments that delay and/or modify the application of certain rules to BHCs and SLHCs based on the amount of total consolidated assets held by such firms. The final rule is available at www.gpo.gov/fdsys/pkg/FR-2015-12-02/pdf/FR-2015-12-02.pdf.
- Additionally in 2015, the enhanced prudential standards rule (Regulation YY) and the liquidity cover-

[12] See box 2 for more information on the Board's participation in the IAIS.

age ratio rule (Regulation WW) became effective for certain large U.S. banking organizations. The complementary liquidity standards required by these regulations build upon the Board's overall supervisory framework for liquidity adequacy and liquidity risk supervision. The enhanced prudential standards rule ensures that BHCs with total consolidated assets of $50 billion or more maintain robust liquidity risk management practices, including liquidity stress testing for determining the adequacy of their liquidity resources. The liquidity coverage ratio rule establishes, for the first time, a quantitative minimum liquidity requirement for large U.S. banking organizations that will be fully phased in by January 2017. The rule requires the largest and most internationally active U.S. banking organizations to maintain an amount of unencumbered high-quality liquid assets that is no less than the expected net cash outflows of the organization over a 30-day period of liquidity stress. Requiring these banking organizations to hold high-quality liquid assets that they can use to meet their short-term obligations in a time of stress will help strengthen the resilience of these organizations and the broader U.S. financial system.

Other Capital Adequacy Standards

In 2015, the Board issued several rulemakings and guidance documents related to capital adequacy, including joint rulemakings with the other federal banking agencies that would implement certain revisions to the Basel capital framework.

- In March and September, the Board and the OCC permitted certain banking organizations to exit from the parallel run stage of the agencies' advanced approaches risk-based capital framework, and henceforth, to use the advanced approaches rule to determine their risk-based capital requirements.
- In April, the Board published a final rule to expand the applicability of its Small Bank Holding Company Policy Statement and also apply it to certain SLHCs. The final rule raises the asset threshold of the policy statement from $500 million to $1 billion in total consolidated assets and also expands the application of the policy statement to certain SLHCs. Holding companies that meet the qualification requirements of the policy statement, including those pertaining to nonbanking activities, off-balance sheet activities, and publicly registered debt and equity, are excluded from consolidated regulatory capital requirements. The final rule is available at www.gpo.gov/fdsys/pkg/FR-2015-04-15/pdf/2015-08513.pdf.
- In June, the federal banking agencies issued a final rule modifying the capital rules applicable to advanced approaches banking organizations. The revisions correct technical and typographical errors and clarify certain requirements of the advanced approaches rule based on observations made by the agencies during the parallel run review, while simultaneously enhancing the consistency of the advanced approaches rule with relevant international standards. The final rule is available at www.gpo.gov/fdsys/pkg/FR-2015-07-15/pdf/2015-15748.pdf.
- In November, the federal banking agencies issued a supervisory guidance statement, SR letter 15-13, to clarify the interaction between the regulatory capital rule and the Volcker rule with respect to the appropriate capital treatment for investments in certain private equity funds and hedge funds (covered funds). Specifically, the guidance clarifies supervisory expectations on how a banking organization's regulatory capital deductions of investments in covered funds made pursuant to the Volcker rule relate to deductions of these investments pursuant to the regulatory capital rule. The supervisory guidance is available at www.federalreserve.gov/bankinforeg/srletters/sr1513.htm.
- In December, the Board issued a final rule providing information regarding the application of the Board's regulatory capital framework to depository institution holding companies that have nontraditional capital structures (such as depository institution holding companies that are not organized as traditional stock corporations). The final rule is available at www.gpo.gov/fdsys/pkg/FR-2015-12-09/pdf/2015-31013.pdf.
- In December, the Board proposed a policy statement detailing the framework for setting the countercyclical capital buffer (CCyB), which would apply only to banking organizations subject to the advanced approaches rule. The proposed policy statement provides background on the range of factors the Board could take into account in setting the buffer. Once fully phased in, the CCyB could range from 0 percent of risk-weighted assets in times of moderate financial-system vulnerabilities to a maximum of 2.5 percent when vulnerabilities are significantly elevated. Banks that fail to meet the CCyB requirement would face restrictions on

capital distributions and certain discretionary bonus payments. The proposed policy statement is available at www.gpo.gov/fdsys/pkg/FR-2016-02-03/pdf/2016-01934.pdf.

International Coordination on Supervisory Policies

As a member of the BCBS, the Federal Reserve actively participates in efforts to advance sound supervisory policies for internationally active banking organizations and to enhance the strength and stability of the international banking system.

Basel Committee on Banking Supervision

During 2015, the Federal Reserve participated in ongoing international initiatives to track the progress of implementation of the BCBS framework in member countries.

The Federal Reserve contributed to supervisory policy recommendations, reports, and papers issued for consultative purposes or finalized by the BCBS that are designed to improve the supervision of banking organizations' practices and to address specific issues that emerged during the financial crisis. The list below includes key final and consultative papers issued in 2015.

Final papers:

- *Revised Pillar 3 disclosure requirements* (issued in January and available at www.bis.org/bcbs/publ/d309.htm).
- *Margin requirements for non-centrally cleared derivatives* (issued in March and available at www.bis.org/bcbs/publ/d317.htm).
- *Net Stable Funding Ratio disclosure standards* (issued in June and available at www.bis.org/bcbs/publ/d324.htm).
- *Frequently asked questions on the Basel III leverage ratio framework* (issued in July and available at www.bis.org/bcbs/publ/d327.htm).
- *Criteria for identifying simple, transparent and comparable securitisations* (issued in July and available at www.bis.org/bcbs/publ/d332.htm).
- *Basel III: The standardised approach for measuring counterparty credit risk exposures: Frequently asked questions* (issued in August and available at www.bis.org/bcbs/publ/d333.htm).
- *Frequently asked questions on the Basel III Countercyclical Capital Buffer* (issued in October and available at www.bis.org/bcbs/publ/d339.htm).
- *Fundamental review of the trading book – interim impact analysis* (issued in November and available at www.bis.org/bcbs/publ/d346.htm).

Consultative papers:

- *Interest rate risk in the banking book – consultative document* (issued in June and available at www.bis.org/bcbs/publ/d319.htm).
- *Review of the Credit Valuation Adjustment (CVA) risk framework – consultative document* (issued in July and available at www.bis.org/bcbs/publ/d325.htm).
- *Haircut floors for non-centrally cleared securities financing transactions – consultative document* (issued in November and available at www.bis.org/bcbs/publ/d340.htm).
- *TLAC Holdings – consultative document* (issued in November and available at www.bis.org/bcbs/publ/d342.htm).
- *Capital treatment for "simple, transparent and comparable" securitisations – consultative document* (issued in November and available at www.bis.org/bcbs/publ/d343.htm).
- *Revisions to the Standardised Approach for credit risk – second consultative document* (issued in December and available at www.bis.org/bcbs/publ/d347.htm).
- *Identification and measurement of step-in risk – consultative document* (issued in December and available at www.bis.org/bcbs/publ/d349.htm).

Financial Stability Board

In 2015, the Federal Reserve continued its active participation in the activities of the Financial Stability Board, an international group that helps coordinate the work of national financial authorities and international standard-setting bodies, and develops and promotes the implementation of financial sector policies in the interest of financial stability.

For more information on the work of the Financial Stability Board, refer to section 3, "Financial Stability."

Joint Forum

In 2015, the Federal Reserve continued its participation in the Joint Forum—an international group of supervisors of the banking, securities, and insurance industries established to address various cross-sector issues, including the regulation of financial conglomerates. The Joint Forum operates under the aegis of

the BCBS, the International Organization of Securities Commissions, and the IAIS. One final paper was issued by the Joint Forum in 2015:

- *Developments in credit risk management across sectors: current practices and recommendations* (issued in June and available at www.bis.org/bcbs/publ/joint38.htm).

Accounting Policy

The Federal Reserve supports sound corporate governance and effective accounting and auditing practices for all regulated financial institutions. Accordingly, the Federal Reserve's accounting policy function is responsible for providing expertise in policy development and implementation efforts, both within and outside the Federal Reserve System, on issues affecting the banking and insurance industries in the areas of accounting, auditing, internal controls over financial reporting, financial disclosure, and supervisory financial reporting.

Federal Reserve staff regularly consult with key constituents in the accounting and auditing professions, including domestic and international standard-setters, accounting firms, accounting and financial sector trade groups, and other financial sector regulators to facilitate the Board's understanding of domestic and international practices; proposed accounting, auditing, and regulatory standards; and the interactions between accounting standards and regulatory reform efforts. The Federal Reserve also participates in various accounting, auditing, and regulatory forums in order to both formulate and communicate its views.

During 2015, Federal Reserve staff addressed numerous issues including accounting for transfers of financial instruments, troubled debt restructurings, accounting alternatives for private companies, financial instrument accounting and reporting, consolidation of structured entities, securitizations, securities financing transactions, and external and internal audit processes.

The Federal Reserve shared its views with accounting and auditing standard-setters through informal discussions and public comment letters. A comment letter on the Financial Accounting Foundation's proposal related to revisions to the operating procedures of the Private Company Council was issued during the past year.

Federal Reserve staff also participated in meetings of the BCBS Accounting Experts Group and the IAIS Accounting and Auditing Working Group. These groups represent their respective organizations at international meetings on accounting, auditing, and disclosure issues affecting global banking and insurance organizations. Working with international bank supervisors, Federal Reserve staff contributed to the development of publications that were issued by the BCBS, including guidance on accounting for expected credit losses. In collaboration with international insurance supervisors, Federal Reserve staff also made contributions to work related to enhancing IAIS standards on valuation, disclosures, and expectations for external audit-related matters.

In 2015, the Federal Reserve issued supervisory guidance to financial institutions and supervisory staff on accounting matters, as appropriate, and participated in a number of supervisory-related activities. For example, Federal Reserve staff

- developed and participated in a number of domestic and international supervisory training programs and sessions to educate supervisors and bankers about new and emerging accounting and reporting topics affecting financial institutions and
- supported the efforts of the Reserve Banks in financial institution supervisory activities through participation in examinations and provision of expert guidance on specific questions related to financial accounting, auditing, reporting, and disclosures.

Federal Reserve System staff also provided their accounting and business expertise through participation in other supervisory activities during the past year. These activities included supporting Dodd-Frank Act initiatives related to stress testing of banks as well as various Basel capital-related issues.

Credit-Risk Management

The Federal Reserve works with the other federal banking agencies to develop guidance on the management of credit risk; to coordinate the assessment of regulated institutions' credit-risk management practices; and to ensure that institutions properly identify, measure, and manage credit risk.

Shared National Credit Program

In November, the Federal Reserve and the other banking agencies released summary results of the 2015 annual review of the Shared National Credit (SNC) program, a long-standing program to further sound credit risk management, gain insight into

credit trends, and promote an efficient and consistent review and classification of shared national credits.

A SNC is any loan or formal loan commitment—and any asset, such as other real estate, stocks, notes, bonds, and debentures taken as debts previously contracted—extended to borrowers by a supervised institution, its subsidiaries, and affiliates, which has the following characteristics: an original loan amount that aggregates to $20 million or more and either (1) is shared by three or more unaffiliated supervised institutions under a formal lending agreement, or (2) a portion of which is sold to two or more unaffiliated supervised institutions with the purchasing institutions assuming their pro rata share of the credit risk.

The 2015 SNC review was prepared in the second quarter of 2015 using data as of December 31, 2014. The 2015 SNC portfolio totaled $3.9 trillion, with 10,675 credit facilities to approximately 6,600 borrowers.

The SNC examination found that the volume of criticized assets increased 9.4 percent to $372.6 billion. As a percentage of total commitments, the overall criticized asset rate remained elevated at 9.5 percent, and is historically high when compared to SNC portfolios at this stage of the economic cycle.

Leveraged lending, which accounts for approximately one quarter of the SNC portfolio, remained a focus of the agencies as they continue to evaluate the safety and soundness of bank underwriting and risk-management practices relative to expectations articulated in the 2013 Interagency Guidance on Leveraged Lending (guidance) and subsequent Frequently Asked Questions documents. The review found that risk in the overall SNC portfolio continues to be centered in the leveraged portfolio. Leveraged loans make up 82.8 percent of all SNC special mention commitments, 65.2 percent of all substandard loans, 65.1 percent of all doubtful loans, and 59.3 percent of all nonaccrual loans. The prevalence of leveraged lending is the primary contributor to the overall SNC special mention and classified rate of 9.5 percent.

This year's review found that banks are making progress in aligning their underwriting practices with the guidance as the incidence of non-pass loan originations to new borrowers (to either hold or distribute) fell in the second half of 2014. However, the review highlighted continuing gaps between industry practices and the expectations for safe and sound banking. Leveraged transactions originated within the past year continued to exhibit structures that were cited as weak by examiners. The persistent structural deficiencies found in loan underwriting by the agencies warrant continued attention.

The review also noted an increase in weakness among credits related to oil and gas exploration, production, and energy services following the decline in energy prices since mid-2014. Aggressive acquisition and exploration strategies from 2010 through 2014 led to increases in leverage, making many borrowers more susceptible to a protracted decline in commodity prices. Oil and gas commitments to the exploration and production sector and the services sector totaled $276.5 billion, or 7.1 percent, of the SNC portfolio. Classified commitments among oil and gas borrowers totaled $34.2 billion, or 15.0 percent, of total classified commitments, compared with $6.9 billion, or 3.6 percent, in 2014. Classified commitments are defined as substandard, doubtful, or loss.

Refinancing risk decreased in the SNC portfolio as 22.3 percent of SNC commitments will mature in 2016 and 2017, compared with 25.0 percent for the same period in the 2014 SNC Review. During 2014 and into 2015, syndicators continued to refinance and modify loan agreements to extend maturities. These transactions had the effect of relieving near-term refinancing risk, but, in many instances, did not improve borrowers' ability to repay their debts in the longer term.

For more information on the 2015 SNC review, visit the Board's website at www.federalreserve.gov/newsevents/press/bcreg/20151105a.htm.

Compliance Risk Management

The Federal Reserve works with international and domestic supervisors to develop guidance that promotes compliance with Bank Secrecy Act and anti-money-laundering compliance (BSA/AML) and counter-terrorism laws.

Bank Secrecy Act and Anti-Money-Laundering Compliance

In 2015, the Federal Reserve continued to actively promote the development and maintenance of effective BSA/AML compliance risk-management programs, including developing supervisory strategies and providing guidance to the industry on trends in BSA/AML compliance. For example, the Federal Reserve supervisory staff participated in a number of industry conferences to continue to communicate

regulatory expectations and policy interpretations for financial institutions.

The Federal Reserve is a member of the Treasury-led BSA Advisory Group, which includes representatives of regulatory agencies, law enforcement, and the financial services industry and covers all aspects of the BSA. The Federal Reserve also participated in several Treasury-led private/public sector dialogues with Mexican, Chinese, U.K., and Gulf State financial institutions, regulators, and supervisors. These dialogues are designed to promote information sharing and understanding of issues surrounding correspondent banking relations between U.S. and country-specific financial sectors. In addition, the Federal Reserve participated in meetings during the year to discuss BSA/AML issues with delegations from China and Mexico regarding managing and reporting on AML risk, customer due diligence, and emerging payments. The Federal Reserve also participates in the FFIEC BSA/AML working group, a monthly forum for the discussion of pending BSA policy and regulatory matters. In addition to the FFIEC agencies, the BSA/AML working group includes the Financial Crimes Enforcement Network (FinCEN) and, on a quarterly basis, the SEC, the CFTC, the Internal Revenue Service, and the Office of Foreign Assets Control (OFAC). The chairmanship rotates among its members and in 2015, the Federal Reserve assumed the position of Chairman of the working group for the next two years.

The FFIEC BSA/AML working group is responsible for updating the FFIEC *Bank Secrecy Act/Anti-Money Laundering Examination Manual*. The FFIEC developed this manual as part of its ongoing commitment to provide current and consistent interagency guidance on risk-based policies, procedures, and processes for financial institutions to comply with the BSA and safeguard their operations from money laundering and terrorist financing.

Throughout 2015, the Federal Reserve and other federal banking agencies continued to regularly share examination findings and enforcement proceedings with FinCEN as well as with OFAC under the interagency MOUs finalized in 2004 and 2006.

International Coordination on Sanctions, Anti-Money-Laundering, and Counter-Terrorism Financing

The Federal Reserve participates in a number of international coordination initiatives related to sanctions, money laundering, and terrorism financing. The Federal Reserve has a long-standing role in the U.S. delegation to the intergovernmental Financial Action Task Force (FATF) and its working groups, contributing a banking supervisory perspective to formulation of international standards. The Federal Reserve contributed to the guidance issued in October 2015 by FATF to more fully understand effective AML supervision and enforcement. Throughout 2015, the Federal Reserve also assisted in preparation for the 2016 FATF mutual evaluation of the United States. The FATF mutual evaluation assesses the U.S. AML and counter-terrorist financing framework against the FATF recommendations and includes a review of the U.S. legal, law enforcement, and supervisory structures.

The Federal Reserve also continues to participate in committees and subcommittees through the Bank for International Settlements. Specifically, the Federal Reserve actively participates in the AML Experts Group under the BCBS that focuses on AML/counter-terrorism financing issues, as well as the Committee on Payments and Market Infrastructures (CPMI). With respect to the AML Experts Group, the Federal Reserve contributed to updating and revising a consultative paper on the general guide to account opening, originally issued in 2003. Also, the Federal Reserve participated in drafting a consultative report on Correspondent Banking (October 2015). The report, issued by the CPMI Correspondent Banking Working Group, made recommendations which could potentially alleviate some of the costs and concerns associated with the reduction of foreign correspondent banking services.

Incentive Compensation

To foster improved incentive compensation practices in the financial industry, the Federal Reserve along with the other federal banking agencies has adopted interagency guidance oriented to the risk-taking incentives created by incentive compensation arrangements.[13] The guidance is principles-based, recognizing that the methods used to achieve appropriately risk-sensitive compensation arrangements likely will differ significantly across and within firms. Three principles are at the core of the guidance:

- Incentive compensation arrangements should balance risk and financial results in a manner that does not encourage employees to expose their organizations to imprudent risks.

[13] See "Guidance on Sound Incentive Compensation Policies," 75 Fed. Reg. 36,395–36,414 (June 25, 2010).

- A banking organization's risk-management processes and internal controls should reinforce and support the development and maintenance of balanced incentive compensation arrangements, and incentive compensation should not hinder risk management and controls.
- Banking organizations should have strong and effective corporate governance of incentive compensation.

Section 956 of the Dodd-Frank Act requires the financial regulatory agencies to prohibit incentive-based arrangements which the agencies determine to encourage inappropriate risks by covered institutions. The Federal Reserve continues to work with five federal agencies (OCC, FDIC, SEC, NCUA, and Federal Housing Finance Agency (FHFA)) on a Dodd-Frank rulemaking on incentive compensation. The number of agencies, the complexity of the subject, and scope of firms covered by the potential rulemaking (all over $1 billion in assets) have resulted in an ongoing multiyear effort. Additionally, through our ongoing supervision, the Federal Reserve continues to help improve incentive compensation practices at the largest firms.

Other Policymaking Initiatives

- In February, the federal banking agencies issued a supervisory guidance statement, SR letter 15-4, which presents an automated tool developed by the agencies to assist financial institutions subject to the regulatory capital rule in calculating risk-based capital requirements for individual securitization exposures. Specifically, institutions that use the regulatory capital rule's Simplified Supervisory Formula Approach to calculate risk-based capital requirements for securitization exposures may use the tool to calculate capital requirements for such exposures. The guidance is available at www.federalreserve.gov/bankinforeg/srletters/SR1504.htm.
- In April, the federal banking agencies issued a supervisory guidance statement, SR letter 15-6, which responds to frequently asked questions from regulated institutions about the agencies' regulatory capital rule. The guidance provides responses to questions on a variety of topics, including, but not limited to, the definition of capital, high-volatility commercial real estate exposures, and credit valuation adjustments. The guidance is available at www.federalreserve.gov/bankinforeg/srletters/sr1506.htm.
- In October, the federal banking agencies, together with the FCA and the FHFA, issued a final rule to establish capital and margin requirements for swap dealers, major swap participants, security-based swap dealers, and major security-based swap participants regulated by one of these prudential regulators. Specifically, the margin requirements mandate the collection and posting of initial and variation margin for non-cleared swap activity (that is, not cleared through a clearinghouse), subject to certain exemptions, with the amount of margin varying based on the relative riskiness of the non-cleared swap activity. The requirements are intended to help ensure the safety and soundness of non-cleared swap trading by reducing risk to the financial system, increasing transparency, and promoting market integrity. The final rule is available at www.gpo.gov/fdsys/pkg/FR-2015-11-30/pdf/2015-28671.pdf.
- In December, the federal banking agencies issued a supervisory guidance statement, SR letter 15-17, which reminds financial institutions of existing regulatory guidance on prudent risk-management practices for commercial real estate (CRE) lending activity through economic cycles. Specifically, in light of substantial growth in many CRE assets and lending markets, financial institutions should maintain underwriting discipline and exercise prudent risk-management practices as well as develop risk-management practices commensurate with the level and nature of their CRE concentration risk. The guidance is available at www.federalreserve.gov/bankinforeg/srletters/sr1517.htm.
- In December, the Board issued two supervisory guidance statements, SR letter 15-18 and SR letter 15-19, to explain its supervisory expectations for capital planning at (1) U.S. BHCs and intermediate holding companies of foreign banking organizations that are subject to the Federal Reserve's LISCC framework, or that have total consolidated assets of $250 billion or more or consolidated total on-balance-sheet foreign exposure of $10 billion or more; and (2) U.S. BHCs and intermediate holding companies of foreign banking organizations that have total consolidated assets of at least $50 billion but less than $250 billion, have consolidated total on-balance sheet foreign exposures of less than $10 billion, and are not otherwise subject to the Board's LISCC framework. The Board has different expectations for sound capital planning and capital adequacy depending on the size, scope of operations, activities, and systemic importance of a firm. Accordingly, the guidance provides the

Board's core capital planning expectations for the respective firms. SR 15-18 is available at www.federalreserve.gov/bankinforeg/srletters/sr1518.htm and SR 15-19 is available at www.federalreserve.gov/bankinforeg/srletters/sr1519.htm.

Regulatory Reports

The Federal Reserve's risk, surveillance, and data function is responsible for developing, coordinating, and implementing regulatory reporting requirements for various financial reporting forms filed by domestic and foreign financial institutions subject to Federal Reserve supervision. Federal Reserve staff members interact with other federal agencies and relevant state supervisors, including foreign bank supervisors as needed, to recommend and implement appropriate and timely revisions to the reporting forms and the attendant instructions.

Holding Company Regulatory Reports

The Federal Reserve requires that U.S. holding companies (HCs) periodically submit reports that provide information about their financial condition and structure.[14] This information is essential to formulating and conducting bank regulation and supervision. It is also used in responding to requests by Congress and the public for information about HCs and their nonbank subsidiaries. Foreign banking organizations also are required to periodically submit reports to the Federal Reserve. For more information on the various reporting forms, see www.federalreserve.gov/apps/reportforms/default.aspx.

During 2015, the following reporting forms were revised:

- **FR Y-9C, FR Y-9LP, and FR Y-9SP**—to reflect changes related to a law passed by the Congress in December 2014 (Public Law 113-250) and associated changes to the Board's Small Bank Holding Company Policy Statement and regulatory capital rules. The changes to implement the law increased the asset threshold of the policy statement from $500 million to $1 billion and applied the policy statement to SLHCs (also see "Other Capital Adequacy Standards" earlier in this section). Concurrent with this change, the Board took steps to relieve regulatory reporting burden for the BHCs and SLHCs that also meet the qualitative requirements of the policy statement. Specifically, the Board eliminated quarterly and more complex consolidated financial reporting requirements (FR Y-9C) and parent-only statements (FR Y-9LP) for approximately 470 of these institutions, and instead required semiannual parent-only financial statements (FR Y-9SP). The Board also eliminated all FR Y-9SP regulatory capital reporting items for approximately 240 SLHCs with less than $500 million in total consolidated assets. The Board made these changes effective March 31, 2015, for the FR Y-9C and FR Y-9LP, and June 30, 2015, for the FR Y-9SP. Also, the FR Y-9C was revised, effective March 31, 2015, to implement changes related to the regulatory capital rules.
- **FR 2052a**—to provide additional data items to facilitate a more sophisticated approach to monitoring liquidity risk. Additionally, the revisions to the FR 2052a allow the Federal Reserve to monitor compliance with the liquidity coverage ratio rule. The revisions tailor the FR 2052a data items and frequency of reporting to the size and complexity of the firms. Less data and maturity granularity are required for smaller, less-complex firms. Also, the Federal Reserve revised the FR 2052b reporting panel by modifying the firms that are required to respond and the applicable asset threshold, as well as eliminating monthly reporting.
- **FR Y-6, FR Y-7, and FR Y-10**—to collect the Legal Entity Identifier (LEI) for all banking and nonbanking legal entities reportable on the Banking, Non-Banking, SLHC, and 4K schedules (excluding Branch schedules) of the FR Y-10 and on the Organization Chart section of the FR Y-6 and FR Y-7, if an LEI has already been obtained (effective December 31, 2015). The Federal Reserve did not require an LEI to be obtained for the sole purpose of reporting the LEI on the FR Y-6, FR Y-7, and FR Y-10.
- **FR Y-14**—to shift the FR Y-14A as-of date by one quarter in accordance with the modifications to the Federal Reserve capital plan and stress test rules (effective December 31, 2015). The Federal Reserve also aligned the reports with changes in the regulatory capital rule by removing certain items related to tier 1 common capital, implemented the FR Y-14A Business Plan Changes schedule, and eliminated an FR Y-14Q Securities sub-schedule.
- **FR Y-15**—to add a new schedule to capture short-term wholesale funding, new data items on total exposures and intra-financial system liabilities, and more dimensions of a firm's systemic footprint (effective December 31, 2015). The Federal Reserve also aligned definitions with international stan-

[14] HCs are defined as BHCs, SLHCs, and securities holding companies.

dards published by the BCBS and expanded the scope of the reporting panel to include SLHCs. These changes allow the Federal Reserve to monitor, on an ongoing basis, the systemic risk profile of the institutions that are subject to enhanced prudential standards under section 165 of the Dodd-Frank Act.

- **FR Y-16**—to change the report as-of date from September 30 to December 31, and in effect, change the corresponding report due date from March to July (effective December 31, 2015). The Federal Reserve also modified the reporting instructions to make technical changes related to final implementation of the Basel capital requirements, and clarified the instructions in coordination with the other federal regulatory agencies.

FFIEC Regulatory Reports

The law establishing the FFIEC and defining its functions requires the FFIEC to develop uniform reporting systems for federally supervised financial institutions. The Federal Reserve, along with the other member FFIEC agencies, requires banks to submit various uniform regulatory reports. This information is essential to formulating and conducting bank regulation and supervision and for the ongoing assessment of the overall soundness of the nation's banking system. During 2015, the following FFIEC reporting forms were implemented or revised.

- FFIEC 102 was implemented as of March 31, 2015, to collect information from insured depository institutions and HCs subject to the market risk rule. The report collects key information from these institutions on how they measure and calculate market risk under these revised rules.
- FFIEC 030 and FFIEC 030S were revised to include a change to the officer declaration requirement, eliminate the requirement for a branch to submit the cover page of the applicable report if it is consolidated into the report for the institution's principal branch in a country, and add a new field on the FFIEC 030 cover page for an institution to indicate whether the branch meets the criteria for annual or quarterly filing when submitting a year-end report (effective December 31, 2015). These data are used to plan examinations and to analyze the foreign operations of domestic banks. Additionally, growth trends can be measured by bank, by country, and by bank within country.
- FFIEC 031 and FFIEC 041 (Call Reports) were revised (Schedule RC-R, Regulatory Capital) effective March 31, 2015, to implement changes related to the banking agencies' regulatory capital rules. Information from the Call Reports provide the most current statistical data available for evaluating institutions' corporate applications, for identifying areas of focus for both on-site and off-site examinations, and for considering monetary and other public policy issues.

Call Report Burden Reduction Initiative for Community Institutions

In September 2015, the FFIEC announced detailed steps regulators are taking to streamline and simplify regulatory reporting requirements for community banks and reduce their reporting burden. The objectives of the community bank burden-reduction initiative are consistent with the early feedback the FFIEC received as part of the regulatory review currently being conducted under the Economic Growth and Regulatory Paperwork Reduction Act of 1996.

As an initial step to streamline some reporting requirements, the federal banking agencies, under the auspices of the FFIEC, sought comment on proposals to, in part, eliminate or revise several Call Report data items. These changes would simplify the reporting requirements for banks and savings associations.

In evaluating changes to the Call Reports, the FFIEC sought to balance reporting burden against regulators' need for reliable data to ensure banks and savings associations operate in a safe and sound manner and are able to meet the financial needs of the communities they serve.

In addition to the reporting changes proposed, the FFIEC also focused on four other areas:

- Accelerating the start of a statutorily required review of the continued appropriateness of the data items collected in the Call Reports, which was scheduled to commence in 2017;[15]
- Evaluating the feasibility and merits of creating a streamlined version of the quarterly Call Report for community institutions;
- Continuing dialogue with community institutions to identify additional opportunities to reduce reporting burden by revising or redefining Call Report data items; and
- Reaching out to banks and savings associations through teleconferences and webinars to explain

[15] This review is mandated by section 604 of the Financial Services Regulatory Relief Act of 2006 (12 USC 1817(a)(11)).

upcoming reporting changes and clarify technical reporting requirements.

While this initiative will span several years, progress made during 2015 by the FFIEC included:

- publishing a *Federal Register* notice with several proposed burden-reducing changes to the Call Reports,
- visiting a limited number of institutions to gather additional information on challenges related to Call Report preparation, and
- holding two teleconferences to train bankers on recent changes to regulatory capital data items.

Finally, as a foundation for the actions it is undertaking, the FFIEC has developed a set of guiding principles for use in evaluating potential additions and deletions of Call Report data items and other revisions to the Call Reports. In general, any Call Report changes must meet three guiding principles for the data items to be collected:

- The data items serve a long-term regulatory or public policy purpose by assisting the FFIEC's member entities in fulfilling their missions of ensuring the safety and soundness of financial institutions and the financial system and protecting consumers, as well as entity-specific missions affecting national and state-chartered institutions;
- The data items maximize practical utility and minimize, to the extent practicable and appropriate, burden on financial institutions; and
- Equivalent data items are not readily available through other means.

Supervisory Information Technology

The Federal Reserve's supervisory information technology function (SIT), under the guidance of the Subcommittee on Supervisory Administration and Technology, works to deliver information technology solutions within the supervision and regulation business line. The services provided to the business line include the development and maintenance of applications and tools to assist with the examination of supervised institutions, data collection and storage, development and deployment of collaboration tools, provisioning and support of quantitative analysis and data visualization software, and information security. SIT also provides IT project management support to several critical national business applications supporting the supervisory business line.

Large bank and foreign bank supervision. In 2015, SIT helped to improve the supervision of large financial institutions and foreign banking organizations through the integration of document repositories for continuous monitoring and point-in-time examinations. In addition, a key accomplishment was the integration of platforms and tools used for sharing and collaborating on supervisory information between Reserve Banks, the Board of Governors, and other federal agencies, which better aligns the large financial institution supervisory documents available to authorized users, and improves the quality and consistency of reports being filed.

Community and regional bank supervision. For banking institutions with less than $50 billion in assets, SIT worked with bank examiners, the FDIC, and the Conference of State Banking Supervisors to deploy new functionality, which improves usability, process standardization, examiner efficiency, and supervisory effectiveness. In line with efforts to improve standardization and efficiency, SIT standardized examination documentation and supported an interagency platform providing states with electronic loan review tools to prepare for the automation of production and maintenance of loan line sheets in 2016.

Supervisory support tools. To support examiners and other supervisory staff, SIT deployed tools to support the collection, use, and storage of supervisory data. SIT integrated supervisory planning and collection tools with a task and resource management program allowing management to better track and align resources. Additionally, a new user front-end to the Consolidated Supervision Comparative Analysis, Planning and Execution (C-SCAPE) program was implemented to provide simpler access to key reports. On the analysis side, SIT also provides and supports software to analyze the data gathered through the supervisory process. Quantitative analysis and data visualization software allow supervisory analysts to glean insights from supervisory data.

Content, collaboration and mobility. The SIT provides applications and programs designed to be used across the supervisory function to enhance efficiency and increase collaboration and mobility. As part of SIT's effort to enhance collaboration between agencies and examiners, the team completed a targeted review of

connectivity options to move to an "always connected" posture where examiners working remotely have solutions for situations when network connectivity is limited.

Streamlined data access and improved security. In addition to data collection and collaboration, SIT continued to streamline ease of data access for the supervisory function, while enhancing overall information security. SIT provides access to data through a central area for all access-related responsibilities, and establishes effective prevention and detection controls to limit information security threats. In addition to data access provisioning, the team provides information security measures through routine procedures to check and verify users with access to information.

The National Information Center

The NIC is the Federal Reserve's comprehensive repository for supervisory, financial, and banking structure data, as well as supervisory documents. The NIC includes (1) data on banking structure throughout the United States and foreign banking concerns; (2) the National Examination Data, an application that enables Federal Reserve supervisory personnel and federal and state banking authorities to access NIC data; (3) the Banking Organization National Desktop, an application that facilitates secure, real-time electronic information sharing and collaboration among federal and state banking regulators for the supervision of banking organizations; and (4) the Central Document and Text Repository, an application that contains documents supporting the supervisory process.

Information sharing and external collaboration. In 2015, the NIC prioritized the review of all existing data exchange relationships with state agencies, federal government agencies, and internal applications within the Federal Reserve System. The review ensured all data being shared is accurate, used in a consistent and secure manner, and within the bounds specified in the user agreement. NIC broadened the scope and focus of information provided to the public in 2015 through the NIC public website. Additionally, the NIC made strides in improving efficiencies and reducing redundancies in national applications utilized throughout the Federal Reserve System and by the other federal and state regulators.

Document management. A high priority for the NIC was to improve document tracking, storage, and access through the implementation of document management software. The newly deployed software eliminates point-to-point interfaces between document management systems and systems uploading or referencing documents. The software also moves and tracks documents between management systems as the documents progress through their life cycle.

Data quality and usability. Due to the constant acquisition of new data sets, the data housed in NIC is continuously changing. The NIC continues to ensure that the underlying data is consistent, readily available, and easily accessible for authorized use. The NIC also works to ensure that all NIC data is easily understood and integrated in a flexible manner.

Staff Development

The Federal Reserve's staff development program supports the ongoing development of about 3,100 professional supervisory staff, ensuring that they have the requisite skills necessary to meet their evolving supervisory responsibilities. The Federal Reserve also provides course offerings to staff at state banking agencies. Training activities in 2015 are summarized in table 3.

Examiner Commissioning Program

The Federal Reserve System's examiner commissioning program for assistant examiners is set forth in the Examiner Commissioning Program (SR letter 98-2).[16] Examiners choose from one of two specialty tracks—(1) safety and soundness or (2) consumer compliance. In 2015, 103 examiners passed the proficiency examination (77 in safety and soundness and 26 in consumer compliance).

On average, individuals move through a combination of classroom offerings, self-paced learning, virtual instruction, and on-the-job training over a period of three years. Achievement is measured by completing the required course content, demonstrating adequate on-the-job knowledge, and passing a professionally validated proficiency examination.

In 2015, The Federal Reserve completed a major initiative to modernize its Community Bank Examiner Commissioning Program. Additionally, learning units were released for the Large Financial Institutions Examiner Commissioning Program (LFI ECP). The LFI ECP program will continue to be developed and deployed over the course of 2016 and 2017.

[16] SR letter 98-2 is available at www.federalreserve.gov/boarddocs/srletters/1998/sr9802.htm.

Table 3. Training for banking supervision and regulation, 2015

Course sponsor or type	Number of enrollments		Instructional time (approximate training days)[1]	Number of course offerings
	Federal Reserve personnel	State and federal banking agency personnel		
Federal Reserve System	2,117	456	720	195
FFIEC	703	307	392	98
Rapid Response[2]	19,421	2,966	10	83

1 Training days are approximate. System courses were calculated using five days as an average, with FFIEC courses calculated using four days as an average.

2 Rapid Response® is a virtual program created by the Federal Reserve System as a means of providing information on emerging topics to Federal Reserve and state bank examiners.

Continuing Professional Development

Throughout the course of 2015, the Federal Reserve System made enhancements to the continuing professional development (CPD) program for examiners through the addition and modernization of several courses, tools, job aids, and learning programs. Most notably, the Federal Reserve developed a multi-layered Capital Markets Specialty Track to develop varying degrees of capital markets expertise across the System. The Federal Reserve System CPD programs are also available to state and federal banking agency personnel.

Regulation

The Federal Reserve exercises important regulatory influence over entry into the U.S. banking system structure through its administration of several federal statutes. The Federal Reserve is also responsible for imposing margin requirements on securities transactions. In carrying out its responsibilities, the Federal Reserve coordinates supervisory activities with the other federal banking agencies, state agencies, functional regulators (that is, regulators for insurance, securities, and commodities firms), and foreign bank regulatory agencies.

Regulation of the U.S. Banking Structure

The Federal Reserve administers six federal statutes that apply to BHCs, financial holding companies, member banks, SLHCs, and foreign banking organizations: the BHC Act, the Bank Merger Act, the Change in Bank Control Act, the Federal Reserve Act, section 10 of the Home Owners Loan Act (HOLA), and the International Banking Act.

In administering these statutes, the Federal Reserve acts on a variety of applications and notices that directly or indirectly affect the structure of the U.S. banking system at the local, regional, and national levels; the international operations of domestic banking organizations; or the U.S. banking operations of foreign banks. The applications and notices concern BHC and SLHC formations and acquisitions, bank mergers, and other transactions involving banks and savings associations or nonbank firms. In 2015, the Federal Reserve acted on 1,014 applications filed under the six statutes.

In 2015, the Federal Reserve released its second and third *Semiannual Report on Banking Applications Activity*, which provides aggregate information on proposals filed by banking organizations and reviewed by the Federal Reserve. The report includes statistics on the number of proposals that have been approved, denied, withdrawn, mooted or returned, as well as general information about the length of time taken to process proposals. Additionally, the report discusses common reasons that proposals have been withdrawn from consideration. The reports are available at www.federalreserve.gov/bankinforeg/semiannual-reports-banking-applications-activity.htm.

Bank Holding Company Act Applications

Under the BHC Act, a corporation or similar legal entity must obtain the Federal Reserve's approval before forming a BHC through the acquisition of one or more banks in the United States. Once formed, a BHC must receive Federal Reserve approval before acquiring or establishing additional banks. Also, BHCs generally may engage in only those nonbanking activities that the Board has previ-

ously determined to be closely related to banking under section 4(c)(8) of the BHC Act. Depending on the circumstances, these activities may or may not require Federal Reserve approval in advance of their commencement.[17]

When reviewing a BHC application or notice that requires approval, the Federal Reserve considers the financial and managerial resources of the applicant, the future prospects of both the applicant and the firm to be acquired, financial stability factors, the convenience and needs of the community to be served, the potential public benefits, the competitive effects of the application, and the applicant's ability to make available to the Federal Reserve information deemed necessary to ensure compliance with applicable law. The Federal Reserve also must consider the views of the U.S. Department of Justice regarding the competitive aspects of any proposed BHC acquisition involving unaffiliated insured depository institutions. In the case of a foreign banking organization seeking to acquire control of a U.S. bank, the Federal Reserve also considers whether the foreign bank is subject to comprehensive supervision or regulation on a consolidated basis by its home-country supervisor. In 2015, the Federal Reserve acted on 299 applications and notices filed by BHCs to acquire a bank or a nonbank firm, or to otherwise expand their activities.

A BHC may repurchase its own shares from its shareholders. Certain stock redemptions require prior Federal Reserve approval. The Federal Reserve may object to stock repurchases by holding companies that fail to meet certain standards, including the Board's capital adequacy guidelines. In 2015, the Federal Reserve acted on four stock repurchase applications by BHCs.

The Federal Reserve also reviews elections submitted by BHCs seeking financial holding company status under the authority granted by the Gramm-Leach-Bliley Act. BHCs seeking financial holding company status must file a written declaration with the Federal Reserve. In 2015, 40 domestic and two foreign financial holding company declarations were approved.

[17] Since 1996, the BHC Act has provided an expedited prior notice procedure for certain permissible nonbank activities and for acquisitions of small banks and nonbank entities. Since that time, the BHC Act has also permitted well-run BHCs that satisfy certain criteria to commence certain other nonbank activities on a de novo basis without first obtaining Federal Reserve approval.

Bank Merger Act Applications

The Bank Merger Act requires that all applications involving the merger of insured depository institutions be acted on by the relevant federal banking agency. The Federal Reserve has primary jurisdiction if the institution surviving the merger is a state member bank. In acting on a merger application, the Federal Reserve considers the financial and managerial resources of the applicant, the future prospects of the existing and combined organizations, financial stability factors, the convenience and needs of the communities to be served, and the competitive effects of the proposed merger. The Federal Reserve also must consider the views of the U.S. Department of Justice regarding the competitive aspects of any proposed bank merger involving unaffiliated insured depository institutions. In 2015, the Federal Reserve approved 73 merger applications under the Bank Merger Act.

Change in Bank Control Act Applications

The Change in Bank Control Act requires individuals and certain other parties that seek control of a U.S. bank, BHC, or SLHC to obtain approval from the relevant federal banking agency before completing the transaction. The Federal Reserve is responsible for reviewing changes in the control of state member banks, BHCs, and SLHCs. In its review, the Federal Reserve considers the financial position, competence, experience, and integrity of the acquiring person; the effect of the proposed change on the financial condition of the bank, BHC, or SLHC being acquired; the future prospects of the institution to be acquired; the effect of the proposed change on competition in any relevant market; the completeness of the information submitted by the acquiring person; and whether the proposed change would have an adverse effect on the Deposit Insurance Fund. A proposed transaction should not jeopardize the stability of the institution or the interests of depositors. During its review of a proposed transaction, the Federal Reserve also may contact other regulatory or law enforcement agencies for information about relevant individuals. In 2015, the Federal Reserve approved 152 change in control notices.

Federal Reserve Act Applications

Under the Federal Reserve Act, a bank must seek Federal Reserve approval to become a member bank. A member bank may be required to seek Federal Reserve approval before expanding its operations domestically or internationally. State member banks must obtain Federal Reserve approval to establish

domestic branches, and all member banks (including national banks) must obtain Federal Reserve approval to establish foreign branches. When reviewing applications for membership, the Federal Reserve considers, among other things, the bank's financial condition and its record of compliance with banking laws and regulations. When reviewing applications to establish domestic branches, the Federal Reserve considers, among other things, the scope and nature of the banking activities to be conducted. When reviewing applications for foreign branches, the Federal Reserve considers, among other things, the condition of the bank and the bank's experience in international banking. In 2015, the Federal Reserve acted on 31 membership applications, 360 new and merger-related domestic branch applications, and no foreign branch applications.

State member banks also must obtain Federal Reserve approval to establish financial subsidiaries. These subsidiaries may engage in activities that are financial in nature or incidental to financial activities, including securities-related and insurance agency-related activities. In 2015, one financial subsidiary application was approved.

Home Owners' Loan Act Applications

Under HOLA, a corporation or similar legal entity must obtain the Federal Reserve's approval before forming an SLHC through the acquisition of one or more savings associations in the United States. Once formed, an SLHC must receive Federal Reserve approval before acquiring or establishing additional savings associations. Also, SLHCs generally may engage in only those nonbanking activities that are specifically enumerated in HOLA or that the Board has previously determined to be closely related to banking under section 4(c)(8) of the BHC Act. Depending on the circumstances, these activities may or may not require Federal Reserve approval in advance of their commencement. In 2015, the Federal Reserve acted on 12 applications filed by SLHCs to acquire a bank or a nonbank firm, or to otherwise expand their activities.

Under HOLA, a savings association reorganizing to a mutual holding company (MHC) structure must receive Federal Reserve approval prior to its reorganization. In addition, an MHC must receive Federal Reserve approval before converting to stock form, and MHCs must receive Federal Reserve approval before waiving dividends declared by the MHC's subsidiary. In 2015, the Federal Reserve acted on two applications for MHC reorganizations. In 2015, the Federal Reserve acted on six applications filed by MHCs to convert to stock form, and seven applications to waive dividends.

When reviewing an SLHC application or notice that requires approval, the Federal Reserve considers the financial and managerial resources of the applicant, the future prospects of both the applicant and the firm to be acquired, the convenience and needs of the community to be served, the potential public benefits, the competitive effects of the application, and the applicant's ability to make available to the Federal Reserve information deemed necessary to ensure compliance with applicable law. The Federal Reserve also must consider the views of the U.S. Department of Justice regarding the competitive aspects of any SLHC proposal involving the acquisition or merger of unaffiliated insured depository institutions.

The Federal Reserve also reviews elections submitted by SLHCs seeking status as financial holding companies under the authority granted by the Dodd-Frank Act. SLHCs seeking financial holding company status must file a written declaration with the Federal Reserve. In 2015, no SLHC financial holding company declarations were received.

Overseas Investment Applications by U.S. Banking Organizations

U.S. banking organizations may engage in a broad range of activities overseas. Many of the activities are conducted indirectly through Edge Act and agreement corporation subsidiaries. Although most foreign investments are made under general consent procedures that involve only after-the-fact notification to the Federal Reserve, large and other significant investments require prior approval. In 2015, the Federal Reserve approved 20 applications and notices for overseas investments by U.S. banking organizations, many of which represented investments through an Edge Act or agreement corporation.

International Banking Act Applications

The International Banking Act, as amended by the Foreign Bank Supervision Enhancement Act of 1991, requires foreign banks to obtain Federal Reserve approval before establishing branches, agencies, commercial lending company subsidiaries, or representative offices in the United States.

In reviewing applications, the Federal Reserve generally considers whether the foreign bank is subject to comprehensive supervision or regulation on a consolidated basis by its home-country supervisor. It

also considers whether the home-country supervisor has consented to the establishment of the U.S. office; the financial condition and resources of the foreign bank and its existing U.S. operations; the managerial resources of the foreign bank; whether the home-country supervisor shares information regarding the operations of the foreign bank with other supervisory authorities; whether the foreign bank has provided adequate assurances that information concerning its operations and activities will be made available to the Federal Reserve, if deemed necessary to determine and enforce compliance with applicable law; whether the foreign bank has adopted and implemented procedures to combat money laundering and whether the home country of the foreign bank is developing a legal regime to address money laundering or is participating in multilateral efforts to combat money laundering; and the record of the foreign bank with respect to compliance with U.S. law. In 2015, the Federal Reserve approved five applications by foreign banks to establish branches, agencies, or representative offices in the United States.

Public Notice of Federal Reserve Decisions

Certain decisions by the Federal Reserve that involve an acquisition by a BHC, a bank merger, a change in control, or the establishment of a new U.S. banking presence by a foreign bank are made known to the public by an order or an announcement. Orders state the decision, the essential facts of the application or notice, and the basis for the decision; announcements state only the decision. All orders and announcements are made public immediately and are subsequently reported in the Board's weekly H.2 statistical release. The H.2 release also contains announcements of applications and notices received by the Federal Reserve upon which action has not yet been taken. For each pending application and notice, the related H.2A release gives the deadline for comments. The Board's website provides information on orders and announcements (www.federalreserve.gov/newsevents/press/orders/2015orders.htm) as well as a guide for U.S. and foreign banking organizations that wish to submit applications (www.federalreserve.gov/bankinforeg/afi/afi.htm).

Enforcement of Other Laws and Regulations

The Federal Reserve's enforcement responsibilities also extend to the disclosure of financial information by state member banks and the use of credit to purchase and carry securities.

Financial Disclosures by State Member Banks

Under the Securities Exchange Act of 1934 and Federal Reserve's Regulation H, certain state member banks are required to make financial disclosures to the Federal Reserve using the same reporting forms (such as Form 10K—annual report and Schedule 14A—proxy statement) that are normally used by publicly held entities to submit information to the SEC.[18] As most of the publicly held banking organizations are BHCs and the reporting threshold was recently raised, only two state member banks were required to submit data to the Federal Reserve in 2015. The information submitted by these two small state member banks is available to the public upon request and is primarily used for disclosure to the bank's shareholders and public investors.

Assessments for Supervision and Regulation

The Dodd-Frank Act directs the Board to collect assessments, fees, or other charges equal to the total expenses the Board estimates are necessary or appropriate to carry out the supervisory and regulatory responsibilities of the Board for BHCs and SLHCs with total consolidated assets of $50 billion or more and nonbank financial companies designated for Board supervision by the FSOC. As a collecting entity, the Board does not recognize the supervision and regulation assessments as revenue nor does the Board use the collections to fund Board expenses; the funds are transferred to the Treasury. The Board collected and transferred $443,068,345 for the 2014 supervision and regulation assessment in 2015.

Securities Credit

Under the Securities Exchange Act of 1934, the Board is responsible for regulating credit in certain transactions involving the purchasing or carrying of securities. The Board's Regulation T limits the amount of credit that may be provided by securities brokers and dealers when the credit is used to purchase debt and equity securities. The Board's Regulation U limits the amount of credit that may be provided by lenders other than brokers and dealers when the credit is used to purchase or carry publicly held

[18] Under section 12(g) of the Securities Exchange Act, certain companies that have issued securities are subject to SEC registration and filing requirements that are similar to those imposed on public companies. Per section 12(i) of the Securities Exchange Act, the powers of the SEC over banking entities that fall under section 12(g) are vested with the appropriate banking regulator. Specifically, state member banks with 2,000 or more shareholders and more than $10 million in total assets are required to register with, and submit data to, the Federal Reserve. These thresholds reflect the recent amendments by the Jumpstart Our Business Startups Act (JOBS Act).

equity securities if the loan is secured by those or other publicly held equity securities. The Board's Regulation X applies these credit limitations, or margin requirements, to certain borrowers and to certain credit extensions, such as credit obtained from foreign lenders by U.S. citizens.

Several regulatory agencies enforce the Board's securities credit regulations. The SEC, the Financial Industry Regulatory Authority, and the Chicago Board Options Exchange examine brokers and dealers for compliance with Regulation T. With respect to compliance with Regulation U, the federal banking agencies examine banks under their respective jurisdictions; the FCA and the NCUA examine lenders under their respective jurisdictions; and the Federal Reserve examines other Regulation U lenders.

5 Consumer and Community Affairs

The Division of Consumer and Community Affairs (DCCA) has primary responsibility for carrying out the Board of Governors' role in consumer financial protection and community development. DCCA conducts consumer and community development-focused supervision, research, and policy analysis, as well as implements relevant statutory requirements for community reinvestment. Through these efforts, the division works to ensure that consumer and community perspectives inform Federal Reserve policy, research, and actions that advance DCCA's mission to promote a fair and transparent consumer financial services marketplace and effective community reinvestment.

Throughout 2015, the division engaged in numerous consumer and community-related functions and policy activities in the following areas:

- **Formulating consumer-focused supervision and examination policy to ensure that financial institutions for which the Federal Reserve has authority comply with consumer protection laws and regulations and meet requirements of community reinvestment laws and regulations.** The division provided oversight for the Reserve Bank consumer compliance supervision and examination programs in state member banks and bank holding companies (BHCs) through its policy development, examiner training, and supervision oversight programs, which include evaluation of state member banks' implementation of the Community Reinvestment Act (CRA), enforcement of a wide range of consumer protection laws and regulations including those related to fair lending, unfair or deceptive acts or practices (UDAP), and flood insurance; analysis of bank and BHC applications in regard to consumer protection, convenience and needs and the CRA; and processing of consumer complaints.
- **Conducting rigorous research, analysis, and data collection to inform Federal Reserve and other policymakers about consumer protection risks and community economic development issues and opportunities.** The division analyzed longstanding and emerging consumer financial services and community risks, practices, issues, and opportunities in order to understand and act on their implications for the economic and supervisory policies that are core to the central bank's functions, as well as to gain insight into consumer decisionmaking related to financial services, implications of the financial crisis on young workers, and access to credit for small businesses.
- **Engaging, convening, and informing key stakeholders to identify emerging issues and advance what works in community reinvestment and consumer protection.** The division continued to promote fair and informed access to financial markets for all consumers, particularly underserved populations, by engaging lenders, government officials, and community leaders. Throughout the year, DCCA convened programs to share information and research on effective community development policies and strategies.
- **Writing and reviewing regulations that effectively implement consumer protection and community reinvestment laws.** The division manages the Board's regulatory responsibilities with respect to certain entities and specific statutory provisions of the consumer financial services and fair lending laws. In 2015, DCCA participated in drafting interagency regulations, interpretations and compliance guidance for the industry and the Reserve Banks.

Supervision and Examinations

DCCA develops and supports supervisory policy and examination procedures for consumer protection laws and regulations, as well as the CRA, as part of its supervision of the organizations for which the Board has authority, including holding companies, state member banks,[1] and foreign banking organiza-

[1] The Federal Reserve has examination and enforcement authority for federal consumer financial laws and regulations for

tions. The division also administers the Federal Reserve System's risk-focused program for assessing consumer compliance risk at the largest bank and financial holding companies in the System, with division staff ensuring that consumer compliance risk is effectively integrated into the consolidated supervision oversight of the holding company. The division oversees the efforts of the 12 Reserve Banks to ensure that consumer protection laws and regulations are rigorously and consistently enforced for the approximately 840 state member banks that the Federal Reserve supervises for compliance with consumer protection and community reinvestment laws and regulations. Division staff provide guidance and expertise to the Reserve Banks on consumer protection laws and regulations, bank and BHC application analysis and processing, examination and enforcement techniques and policy matters, examiner training, and emerging issues. Finally, staff members participate in interagency activities that promote consistency in examination principles, standards, and processes.

Examinations are one of the Federal Reserve's methods of ensuring compliance with consumer protection laws and assessing the adequacy of consumer compliance risk-management systems within regulated entities. During 2015, the Reserve Banks completed 253 consumer compliance examinations of state member banks and 42 examinations of foreign banking organizations, two examinations of Edge Act corporations, and two examinations of agreement corporations.[2]

insured depository institutions with $10 billion or less that are state member banks and not affiliates of covered institutions, as well as for conducting CRA examinations for all state member banks regardless of size. The Federal Reserve Board also has examination and enforcement authority for certain federal consumer financial laws and regulations for insured depository institutions that are state member banks with over $10 billion in assets, while the Consumer Financial Protection Bureau has examination and enforcement authority for many federal consumer financial laws and regulations for insured depository institutions with over $10 billion in assets and their affiliates (covered institutions), as mandated by the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank Act).

2 Agency and branch offices of foreign banking organizations, Edge Act corporations, and agreement corporations fall under the Federal Reserve's purview for consumer compliance activities. An agreement corporation is a type of bank chartered by a state to engage in international banking. The bank agrees with the Federal Reserve Board to limit its activities to those allowed by an Edge Act corporation. An Edge Act corporation is a banking institution with a special charter from the Federal Reserve to conduct international banking operations and certain other forms of business without complying with state-by-state banking laws. By setting up or investing in Edge Act corporations, U.S. banks are able to gain portfolio exposure to financial investing operations not available under standard banking laws.

Bank Holding Company Consolidated Supervision

During 2015, staff reviewed 119 bank and financial holding companies to ensure consumer compliance risk was appropriately incorporated into the consolidated risk-management program of the organization. Division staff participated with staff from the Board's Division of Banking Supervision and Regulation on numerous projects related to ongoing implementation of the Dodd-Frank Act, including standards for assessing corporate governance and continued integration of savings and loan holding companies (SLHCs) under Federal Reserve supervision.[3]

Mortgage Servicing and Foreclosure

Payment Agreement Status

Throughout 2015, Board staff continued to work to oversee and implement the enforcement actions against 16 mortgage loan servicers that were issued by the Federal Reserve and the Office of the Comptroller of the Currency (OCC) between April 2011 and April 2012. At the time of the enforcement actions, along with other requirements, the two regulators directed servicers to retain independent consultants to conduct comprehensive reviews of foreclosure activity to determine whether eligible[4] borrowers suffered financial injury because of servicer errors, misrepresentations, or other deficiencies. The file review initiated by the independent consultants, combined with a significant borrower outreach process, was referred to as the Independent Foreclosure Review (IFR).

In 2013, the regulators entered into agreements with 15 of the mortgage loan servicers to replace the IFR with direct cash payments to all eligible borrowers and other assistance (the Payment Agreement).[5] The

3 In November 2014, the Federal Reserve issued a detailed listing of Federal Reserve supervisory guidance documents that are applicable to SLHCs. The listing is supplemental to previously issued guidance that informed SLHCs to comply with Federal Reserve guidance and not Office of Thrift Supervision (OTS) guidance issued prior to July 21, 2011—the date that supervision and regulation of SLHCs transferred from the OTS to the Federal Reserve.

4 Borrowers were eligible if their primary residence was in a foreclosure action with one of the sixteen mortgage loan servicers at any time in 2009 or 2010.

5 One OCC-regulated servicer elected to complete the Independent Foreclosure Review, and did not, therefore, enter into the Payment Agreement.

participating servicers agreed to pay an estimated $3.9 billion to 4.4 million borrowers whose primary residence was in a foreclosure process in 2009 or 2010. The Payment Agreement also required the servicers to contribute an additional $5.8 billion dollars in other foreclosure prevention assistance, such as loan modifications and forgiveness of deficiency judgments. For the participating servicers, fulfillment of the agreement will satisfy the foreclosure review requirements of the enforcement actions issued by the regulators in 2011 and 2012. The Payment Agreement did not affect the servicers' continuing obligations under the enforcement actions to address deficiencies in their mortgage servicing and foreclosure policies and procedures.

A paying agent, Rust Consulting, Inc., (Rust) was retained to administer payments to borrowers on behalf of the participating servicers. Beginning in April 2013, a letter with an enclosed check was sent to borrowers who had a foreclosure action initiated, pending, or completed in 2009 or 2010 with any of the participating servicers. Letters with checks were mailed to eligible borrowers throughout 2013, 2014, and 2015, including checks that were reissued upon the borrower's request due to expiration, a request for a change in payee, or a request by borrowers to split the check amongst the borrowers on the loan. For checks that have not been cashed or were returned undeliverable, the agencies directed Rust to expand its efforts to locate more-current address information for the unpaid borrowers. For nearly all borrowers, by December 31, 2015, at least two years have passed since their initial checks were mailed. During that two-year period, at least two and in most cases, three attempts have been made to reach each borrower.

As of December 31, 2015, $3.5 billion has been distributed through 3.9 million checks, representing nearly 91 percent of the total value of the funds. Receiving a payment under the agreement will not prevent borrowers from taking any action they may wish to pursue related to their foreclosure. Servicers are not permitted to ask borrowers to sign a waiver of any legal claims they may have against their servicer in connection with receiving payment.[6]

In November, Board members approved the key elements of a plan to end the implementation of the Payment Agreement. On November 19, 2015, the Federal Reserve directed Rust to redistribute any funds remaining after all outstanding checks expire on March 31, 2016, to eligible borrowers of Federal Reserve-supervised servicers who have cashed or deposited their checks. This direction applied only to funds related to mortgage servicers supervised by the Federal Reserve, and the redistribution of remaining funds is expected to occur in mid-2016. The Federal Reserve intends to distribute the maximum amount of funds to borrowers affected by deficient servicing and foreclosure practices.

Foreclosure Prevention Actions

The Payment Agreement also required servicers to undertake well-structured loss-mitigation efforts focused on foreclosure prevention, with preference given to activities designed to keep borrowers in their homes through affordable, sustainable, and meaningful home preservation actions within two years from the date the agreement in principle was reached. The foreclosure prevention actions are expected to provide significant and meaningful relief or assistance to qualified borrowers and, as stated in the agreement, "should not disfavor a specific geography within or among states, nor disfavor low and/or moderate income borrowers, and not discriminate against any protected class."

Servicers may fulfill their obligations through three specific consumer-relief activities set forth in the National Mortgage Settlement, including first-lien loan modifications, second-lien loan modifications, and short sales or deeds-in-lieu of foreclosure. Servicers were given the option, subject to non-objection from their regulator, to meet their foreclosure prevention assistance requirements by paying additional cash into the qualified settlement funds to be used for direct payments to consumers or by providing cash or other resource commitments to borrower counseling or education. Several of the participating servicers chose this option and have met their foreclosure prevention obligations.

All servicers were required to submit reports detailing the consumer-relief actions they had taken to satisfy these requirements. The foreclosure prevention assistance actions reported included loan modifications, short sales, deeds-in-lieu of foreclosure, debt cancellation, and lien extinguishment. In order to receive credit toward the servicer's total foreclosure prevention obligation, the actions submitted must be validated by the regulators. As of December 31, 2015, a third party is in the process of completing this validation and ensuring that the foreclosure-

[6] For more information, see www.federalreserve.gov/consumerinfo/independent-foreclosure-review-payment-agreement.htm.

prevention assistance amounts meet the requirements of the amendments to the enforcement actions.

Servicer Efforts to Address Deficiencies

In addition to the foreclosure review requirements, the enforcement actions required mortgage servicers to submit acceptable written plans to address various mortgage loan servicing and foreclosure processing deficiencies. In the time since the enforcement actions were issued, the banking organizations have been implementing the action plans, including enhanced controls, and improving systems and processes. To date, the supervisory review of the mortgage servicers' action plans has shown that the banking organizations under the enforcement actions have implemented significant corrective actions with regard to their mortgage servicing and foreclosure processes, but additional actions need to be taken for some servicers. Federal Reserve supervisory teams will continue to monitor and evaluate the servicers' progress on implementing the action plans to address unsafe and unsound mortgage servicing and foreclosure practices as required by the enforcement actions.

Supervisory Matters

Enforcement Activities

Fair Lending and UDAP Enforcement

With respect to fair lending, the Consumer Financial Protection Bureau (CFPB) supervises state member banks with assets of more than $10 billion for compliance with the Equal Credit Opportunity Act (ECOA). The Board also has supervisory authority for compliance with the Fair Housing Act. For the 829 state member banks with assets of $10 billion or less, the Board retains the authority to enforce both the ECOA and the Fair Housing Act. With respect to the Federal Trade Commission Act, which prohibits unfair or deceptive acts or practices (UDAP), the Board has supervisory authority over state member banks, regardless of asset size.

Fair lending and UDAP reviews are conducted regularly within the supervisory cycle. Additionally, examiners may conduct fair lending and UDAP reviews outside of the usual supervisory cycle, if warranted by fair lending and UDAP risk. When examiners find evidence of potential discrimination or potential UDAP violations, they work closely with DCCA's Fair Lending and UDAP Enforcement Sections, which provide additional legal and statistical expertise and ensure that fair lending and UDAP laws are enforced consistently and rigorously throughout the Federal Reserve System.

With respect to fair lending, pursuant to the ECOA, if the Board has reason to believe that a creditor has engaged in a pattern or practice of discrimination in violation of the ECOA, the matter must be referred to the Department of Justice (DOJ). The DOJ reviews the referral and determines whether further investigation is warranted. A DOJ investigation may result in a public civil enforcement action or settlement. Alternatively, the DOJ may decide to return the matter to the Board for administrative enforcement. When a matter is returned to the Board, staff ensure that the institution takes all appropriate corrective action.

During 2015, the Federal Reserve referred the following four matters to the DOJ:

- One referral involved discrimination on the basis of race and national origin in violation of the ECOA and the FHA. For secondary market mortgage loans, the lender charged African American and Hispanic borrowers higher prices than similarly situated non-Hispanic white borrowers. Legitimate pricing factors failed to explain the pricing disparities.
- Two referrals involved discrimination on the basis of national origin, in violation of the ECOA. The lenders charged Hispanic borrowers higher interest rates than non-Hispanic borrowers for direct automobile loans. Legitimate pricing factors failed to explain the pricing disparities.
- One referral involved discrimination on the basis of marital status, in violation of the ECOA. The banks improperly required spousal guarantees on mortgage loans, in violation of Regulation B.

In 2015, the Board issued a consent order to cease and desist, required restitution of approximately $24 million, and assessed a civil money penalty of $2.2 million against a non-bank agent for deceptive practices associated with an account that was in violation of the Federal Trade Commission Act. The actions addressed in this order involved several practices that, at various points in the financial aid refund selection process, misled students about significant aspects of the account, including terms and fees.[7]

[7] For more information, see www.federalreserve.gov/newsevents/press/enforcement/20151223a.htm.

If there is a fair lending violation that does not constitute a pattern or practice under ECOA or a UDAP violation, the Federal Reserve takes action to ensure that the violation is remedied by the bank. Most lenders readily agree to correct fair lending and UDAP violations, often taking corrective action as soon as they become aware of a problem. Thus, the Federal Reserve frequently uses informal supervisory tools (such as memoranda of understanding between banks' boards of directors and the Reserve Banks, or board resolutions) to ensure that violations are corrected. When necessary, the Board can bring public enforcement actions.

Given the complexity of this area of supervision, the Federal Reserve seeks to provide clarity on its perspectives and processes to the industry and the public. Fair Lending and UDAP Enforcement staff meet regularly with consumer advocates, supervised institutions, and industry representatives to discuss fair lending and UDAP issues and receive feedback. Through this outreach, the Board is able to address emerging fair lending and UDAP issues and promote sound fair lending and UDAP compliance. For example, in 2015, the Board sponsored a free interagency webinar on fair lending supervision through Compliance Outlook Live, which was attended by more than 6,000 registrants, most of which were community banks.[8] In addition, DCCA staff participate in numerous meetings, conferences, and trainings sponsored by consumer advocates, industry representatives, and interagency groups.

Flood Insurance

The National Flood Insurance Act imposes certain requirements on loans secured by buildings or mobile homes located in, or to be located in, areas determined to have special flood hazards. Under the Federal Reserve's Regulation H, which implements the act, state member banks are generally prohibited from making, extending, increasing, or renewing any such loan unless the building or mobile home, as well as any personal property securing the loan, are covered by flood insurance for the term of the loan. The law requires the Board and other federal financial institution regulatory agencies to impose civil money penalties when they find a pattern or practice of violations of the regulation. The civil money penalties are payable to the Federal Emergency Management Agency (FEMA) for deposit into the National Flood Mitigation Fund.

In 2015, the Federal Reserve issued eight formal consent orders and assessed $125,015 in civil money penalties against state member banks to address violations of the flood regulations. These statutorily mandated penalties were forwarded to the National Flood Mitigation Fund held by the Department of the Treasury for the benefit of FEMA.

The enactment of two statutes, the Biggert-Waters Flood Insurance Reform Act of 2012 and the Homeowner Flood Insurance Affordability Act of 2014, requires the federal financial institution supervisory agencies to update certain provisions of the federal flood insurance regulations. To that end, the Board and four other federal agencies issued a final rule in July 2015 to incorporate provisions regarding the escrow of flood insurance payments, and the forced placement of flood insurance (see "Consumer Laws and Regulations" later in this section). To assist lenders in understanding and complying with these new regulations, the Federal Reserve hosted in October 2015 an interagency webinar, attended by over 5,000 participants, entitled "Interagency Flood Insurance Regulation Update." The agencies continue work to finalize additional regulations to implement provisions of these statutes related to lenders' acceptance of private flood insurance.

Community Reinvestment Act

The CRA requires that the Federal Reserve and other federal banking and thrift regulatory agencies encourage financial institutions to help meet the credit needs of the local communities in which they do business, consistent with safe and sound operations. To carry out this mandate, the Federal Reserve

- examines state member banks to assess their performance under the CRA;
- considers state member banks' and bank holding companies' CRA performance in context with other supervisory information when analyzing applications for mergers and acquisitions; and
- disseminates information about community development techniques to bankers and the public through Community Development offices at the Reserve Banks.

The Federal Reserve assesses and rates the CRA performance of state member banks in the course of examinations conducted by staff at the 12 Reserve

[8] For more information and to obtain the webcast, see https://consumercomplianceoutlook.org/outlook-live/2015/interagency-fair-lending-hot-topics/.

Banks. During the 2015 reporting period, the Reserve Banks completed 195 CRA examinations of state member banks. Of those banks examined, 14 were rated "Outstanding," 178 were rated "Satisfactory," 3 were rated "Needs to Improve," and none were rated "Substantial Non-Compliance."

During the 2015 review period, the Board, the Federal Deposit Insurance Corporation (FDIC), and the OCC reviewed public comments received in response to proposed additional revisions to the Interagency Questions and Answers Regarding Community Reinvestment (Interagency Questions and Answers) that were issued in September 2014.[9] The proposed revisions focus on issues such as alternative systems for delivering retail banking services; community development, including economic development; and the consideration of qualitative factors such as innovative and flexible lending practices. The agencies have reviewed comments received in response to the proposed revisions and expect to publish revised Interagency Questions and Answers during 2016.

Mergers and Acquisitions

The Federal Reserve analyzes expansionary applications by banks or BHCs, taking into account the likely effects of the acquisition on competition, the convenience and needs of the communities to be served, the financial and managerial resources and future prospects of the companies and banks involved, and the effectiveness of the company's policies to combat money laundering. As part of this process, DCCA evaluates whether the institutions are currently meeting the convenience and needs of their communities and the effectiveness of existing managerial resources, as well as the institutions' ability to meet the convenience and needs of their communities and the adequacy of their managerial resources after the proposed transaction.

The depository institution's CRA record is a critical component of this analysis. The CRA requires the Federal Reserve to consider a depository institution's record of helping to meet the credit needs of its local communities in evaluating applications for mergers, acquisitions, and branches. An institution's most recent CRA performance evaluation is a particularly important, and often controlling, consideration in the applications process because it represents a detailed on-site evaluation of the institution's performance under the CRA by its federal supervisor.

[9] For more information, see www.federalreserve.gov/newsevents/press/bcreg/20140908a.htm.

As part of the analysis of managerial resources, the Federal Reserve reviews the institution's record of compliance with consumer protection laws and regulations. The institution's most recent consumer compliance rating is central to this review because, like the CRA performance evaluation, it represents the detailed findings of the institution's supervisory agency.

Less than satisfactory CRA or consumer compliance ratings or other significant consumer compliance issues can pose an impediment to the processing and approval of the application. Federal Reserve staff gather additional information about CRA and consumer compliance performance in many circumstances, including when the financial institution(s) involved in an application have less than satisfactory CRA or compliance ratings or recently identified consumer compliance issues, or when the Federal Reserve receives comments from interested parties that raise CRA or consumer compliance issues. To further enhance transparency about this process, the Board issued guidance to the public in 2014 describing the Federal Reserve's approach to applications and notices, indicating those that may not satisfy statutory requirements for approval of a proposal or that otherwise raise supervisory or regulatory concerns.[10]

The Board provides information on its actions associated with these merger and acquisition transactions, issuing press releases and Board Orders for each.[11] As part of the 2014 guidance, the Federal Reserve also publishes semiannual reports that provide pertinent information on applications and notices filed with the Federal Reserve.[12] The reports include statistics on the number of proposals that had been approved, denied, and withdrawn as well as general information about the length of time taken to process proposals. Additionally, the reports discuss common reasons that proposals have been withdrawn from consideration.

Because these applications are of interest to the public, they often generate comments that raise various issues for Board staff to consider in their analyses of the supervisory and lending records of the applicants. With respect to consumer compliance and

[10] For more information, see www.federalreserve.gov/bankinforeg/srletters/sr1402.htm.

[11] To access the Board's Orders on Banking Applications, see www.federalreserve.gov/newsevents/press/orders/2014orders.htm.

[12] For these reports, see www.federalreserve.gov/bankinforeg/semiannual-reports-banking-applications-activity.htm.

community reinvestment, one of the more common allegations is that either or both the target and the acquirer fail to make credit available to certain minority groups and to low- and moderate-income (LMI) individuals, or when they do extend credit to those borrowers, it is at a higher cost. Commenters also often express concerns about branch closures or the banks' record of lending to small businesses in LMI geographies.

In evaluating the applications and the merits of public comments, the Board considers information provided by applicants and analyzes supervisory information, including examination reports with evaluations of compliance with fair lending and other consumer protection laws and regulations, and confers with other regulators, as appropriate, for their supervisory views. If warranted, the Federal Reserve will also conduct pre-membership exams for a transaction in which an insured depository institution will become a state member bank or in which the surviving entity of a merger would be a state member bank. In October 2015, the Federal Reserve issued guidance providing further explanation on its criteria for waiving or conducting such pre-merger or pre-membership examinations.[13]

During 2015, the Board considered over 100 applications, with topics ranging from change in control notices, to branching requests, to mergers and acquisitions. DCCA staff analyzed the following 16 unrelated notices and applications for transactions involving bank mergers and branching that involved adverse public comments on CRA issues or consumer compliance issues, such as fair lending, which the Board considered and approved:[14]

- Comerica Bank, Dallas, Texas, to establish a branch at 31 68th Avenue in Coopersville, Michigan, was approved in January.
- Hillister Enterprises, II, Inc., Umphrey II Family Limited Partnership, both of Beaumont, Texas, and CBFH, Inc., Orange, Texas, to acquire MC Bancshares, Inc. and thereby indirectly acquire its subsidiary, Memorial City Bank, both of Houston, Texas, was approved in January.
- Simmons First National Corporation, Pine Bluff, Arkansas, to merge with Community First Bancshares, Inc., and thereby indirectly acquire First State Bank, both of Union City, Tennessee, and Simmons First National Corporation to merge with Liberty Bancshares, Inc., and thereby indirectly acquire Liberty Bank, both of Springfield, Missouri, were approved in February.
- IBERIABANK Corporation, Lafayette, Louisiana, to acquire Florida Bank Group, Inc., and its wholly owned subsidiary, Florida Bank, both of Tampa, Florida, and IBERIABANK, Lafayette, Louisiana, to merge with Florida Bank and to establish and operate branches at the locations of Florida Bank's main office and branches were approved in February.
- BB&T Corporation, Winston-Salem, North Carolina, to acquire The Bank of Kentucky Financial Corporation and thereby indirectly acquire its wholly owned subsidiary, The Bank of Kentucky, Inc., both of Crestview Hills, Kentucky, was approved in June.
- Sterling Bancorp, Montebello, New York, to acquire Hudson Valley Holding Corporation and thereby indirectly acquire its wholly owned subsidiary, Hudson Valley Bank, National Association, both of Yonkers, New York, was approved in June.
- Cathay General Bancorp, Los Angeles, California, to acquire Asia Bancshares, Inc., and thereby indirectly acquire its wholly owned subsidiary, Asia Bank, National Association, both of Flushing, New York, was approved in July.
- CIT Group, Inc., Livingston, New Jersey, to acquire IMB Holdco LLC and thereby indirectly acquire its wholly owned subsidiary, OneWest Bank, National Association, both of Pasadena, California, was approved in July.
- Empresas Juan Yarur SpA and its subsidiary, Banco de Credito e Inversiones, both of Santiago, Chile, to acquire CM Florida Holdings, Inc., Coral Gables, Florida, and thereby indirectly acquire its subsidiary, City National Bank of Florida, Miami, Florida, was approved in September.
- First Horizon National Corporation, Memphis, Tennessee, to acquire TrustAtlantic Financial Corporation and thereby indirectly acquire its wholly owned subsidiary, TrustAtlantic Bank, both of Raleigh, North Carolina, was approved in September.
- PacWest Bancorp, Los Angeles, California, to merge with Square 1 Financial, Inc., and thereby indirectly acquire its wholly owned subsidiary,

[13] For more information, see www.federalreserve.gov/bankinforeg/srletters/SR1511.htm.

[14] Related notices and applications for which a single Board Order was issued were counted as a single notice or application in this total.

Square 1 Bank, and the nonbank subsidiaries of Square 1 Financial, all of Durham, North Carolina, was approved in September.

- M&T Bank Corporation ("M&T"), Buffalo, New York, to acquire Hudson City Bancorp, Inc., Paramus, New Jersey; and by M&T's subsidiary bank, Manufacturers and Traders Trust Company, Buffalo, to merge with Hudson City Savings Bank, Paramus, and retain and operate branches at the locations of Hudson City Savings Bank's main office and branches was approved in September.
- Royal Bank of Canada, Montreal, Canada, and RBC USA Holdco Corporation, New York, New York, to acquire City National Corporation and thereby indirectly acquire its wholly owned subsidiary, City National Bank, both of Los Angeles, California, was approved in October.
- Community Bank System, Inc., DeWitt, New York, to acquire Oneida Financial Corp., and thereby indirectly acquire Oneida Savings Bank, both of Oneida, New York, and State Bank of Chittenango, Chittenango, New York, was approved in November.
- BB&T Corporation, Winston-Salem, North Carolina, to acquire National Penn Bancshares, Inc., and thereby indirectly acquire its wholly owned subsidiary, National Penn Bank, both of Allentown, Pennsylvania, was approved in December.
- Chemical Bank, Midland, Michigan, to establish a mobile branch in several counties in Michigan was approved in December.

Coordination with the Consumer Financial Protection Bureau

During 2015, staff continued to work through the implementation of the Interagency Memorandum of Understanding on Supervision Coordination with the CFPB. The agreement is intended to establish arrangements for coordination and cooperation among the CFPB and the OCC, the FDIC, the National Credit Union Association (NCUA), and the Board of Governors. The agreement strives to minimize unnecessary regulatory burden and to avoid unnecessary duplication of effort and conflicting supervisory directives amongst the prudential regulators. The regulators work cooperatively to share exam schedules for covered institutions and covered activities to plan simultaneous exams, provide final drafts of examination reports for comment, and share supervisory information.

Coordination with Other Federal Banking Agencies

The member agencies of the Federal Financial Institutions Examination Council (FFIEC) develop consistent examination principles, standards, procedures, and report formats.[15] In 2015, the FFIEC member organizations continued to work together on various initiatives.

Updating Examination Procedures under Regulations X, Z, and P

In February, the FFIEC developed examination procedures that incorporated amendments to Regulations X (Real Estate Settlement Procedures Act (RESPA)) and Z (Truth in Lending Act (TILA)), including the CFPB's final TILA-RESPA Integrated Disclosures Rule. The updated interagency Regulation Z examination procedures also incorporated changes associated with the interagency higher-priced mortgage loan appraisal rule and other minor revisions made to the title XIV rules.

The Regulation X and Regulation Z examination procedures were updated again in September to reflect the revised effective date of the TILA-RESPA Integrated Disclosure rule and to incorporate minor, technical updates. In September, the FFIEC also developed updated Regulation P (Privacy of Consumer Financial Information) examination procedures that incorporated a CFPB rulemaking that amended the requirements regarding financial institutions' provision of annual disclosure of privacy practices to customers.[16] The updated Regulation P examination procedures also reflect the CFPB's recodification in Regulation P of the privacy regulations that were previously issued by six other federal financial institution regulatory agencies as well as clarify requirements and improve readability.

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[15] The FFIEC is a formal interagency body empowered to prescribe uniform principles, standards, and report forms for the federal examination of financial institutions by the Board, the CFPB, the FDIC, the NCUA, and the OCC and to make recommendations to promote uniformity in the supervision of financial institutions. In 2006, the State Liaison Committee was added to the council as a voting member. The State Liaison Committee includes representatives from the Conference of State Bank Supervisors, the American Council of State Savings Supervisors, and the National Association of State Credit Union Supervisors.

[16] On December 4, 2015, section 75001 of the Fixing America's Surface Transportation Act, which was effective upon enactment, superseded the referenced CFPB amendment to the annual privacy notice requirement.

Coordinating Transfer of Regulation C (HMDA) Data Operations

Also in 2015, the FFIEC established a plan for the transfer of Regulation C (Home Mortgage Disclosure Act (HMDA)) data operations to the CFPB in January 2018. The Board will administer and maintain the current HMDA data operations system and continue to collect and process HMDA data through December 2017.

Guidance on Private Student Loans with Graduated Repayment Terms at Origination

In January, the Board, the CFPB, the FDIC, the NCUA, and the OCC, in conjunction with the State Liaison Committee, issued guidance that provides principles that financial institutions should consider in their policies and procedures for underwriting private student loans with graduated repayment terms at origination. The guidance indicates that financial institutions that originate private student loans with graduated repayment terms should prudently underwrite the loans in a manner consistent with safe and sound lending practices. Additionally, the guidance states that financial institutions should comply with all applicable federal and state consumer laws and regulations, including providing disclosures that clearly communicate the timing and the amount of payments to facilitate borrower understanding of loan terms and features.

Guidance to Encourage Financial Institutions' Youth Savings Programs and Address Related Frequently Asked Questions

In February, the Board, the FDIC, the NCUA, and the OCC (as members of the Financial Literacy and Education Commission) and the U.S. Department of the Treasury's Financial Crimes Enforcement Network issued guidance intended to encourage financial institutions to develop and implement programs to expand the financial capability of youth and build opportunities for financial inclusion for more families. The guidance also addresses frequently asked questions that may arise as financial institutions collaborate with schools, local and state governments, nonprofit organizations, and corporate entities to facilitate youth savings and financial education programs. The guidance does not impose additional compliance or examination requirements on financial institutions or examiners, respectively. Rather, the guidance is intended to clarify the applicability of existing legal and regulatory requirements in a manner intended to remove perceived barriers for financial institutions to establish school-based youth savings programs.

Examiner Training

Ensuring that financial institutions comply with laws that protect consumers and encourage community reinvestment is a fundamental aspect of the bank examination and supervision process. As the complexity of both consumer financial transactions and the regulatory landscape has increased, training for consumer compliance examiners has become more important than ever before. The division's examiner training function is responsible for the ongoing development of the professional consumer compliance supervisory staff, from an initial introduction to the Federal Reserve System through the development of proficiency in consumer compliance topics sufficient to earn an examiner's commission. DCCA's role is to ensure that examiners have the skills necessary to meet their supervisory responsibilities now and in the future.

Consumer Compliance Examiner Training Curriculum

Currently, the consumer compliance examiner training curriculum consists of five courses focused on consumer protection laws, regulations, and examining concepts. In 2015, these courses were offered in 10 sessions, and training was delivered to a total of 188 Federal Reserve consumer compliance examiners and staff members and 8 state banking agency examiners. These courses are principally conducted by traditional classroom method, and when appropriate, courses are delivered via alternative methods, such as the Internet or other distance-learning technologies. Several courses use a combination of instructional methods, including both classroom instruction focused on case studies and specially developed computer-based instruction that includes interactive self-check exercises. Board and Reserve Bank staff regularly review the core curriculum for examiner training, updating subject matter and adding new elements as appropriate.

Early in 2015, a large-scale Federal Reserve System effort was launched to modernize consumer compliance examiner training. A multiyear effort slated for completion in mid-2018, the curriculum modernization began with a transition from traditional classroom-based training to virtual, self-directed, and blended delivery methods designed by experts in adult learning.

To maintain the rigor and excellence of the Federal Reserve's examiner training, the effort will utilize resources with an adult learning background coupled with experienced, dedicated consumer compliance

examiners from throughout the Federal Reserve as well as Board of Governors staff. In the second quarter of 2015, staff completed several keys steps: namely, they developed a budget and business plan, identified Federal Reserve personnel to manage and staff the program, held an orientation meeting, and began the analysis of examination tasks performed by examiners and fundamental to curriculum development. As the modernization is fully implemented into 2018, the effort will also incorporate continuing professional development and on-the-job training into the program.

Outreach and Training: Dodd-Frank Act

During 2015, the Federal Reserve collaborated with the other federal banking agencies to offer four webinars (Outlook Live) focused on delivering timely and relevant compliance information to the banking industry, experienced examiners, and other regulatory and supervisory personnel. In May, the Federal Reserve hosted the fifth in a series of CFPB-led Outlook Live webinars dedicated to the CFPB's TILA-RESPA Integrated Disclosures Rule. In July, senior Federal Reserve examiners delivered a webinar addressing a variety of common consumer compliance violations and emerging topics. The FFIEC banking regulatory agencies partnered to offer a webinar update in October on flood insurance regulation and agencies charged with Fair Lending oversight delivered a "hot topics" webinar.[17]

Ongoing Training Opportunities

In addition to providing core examiner training, the examiner staff development function emphasizes the importance of continuing lifelong learning. Opportunities for continuing learning include special projects and assignments, self-study programs, rotational assignments, the opportunity to instruct at Federal Reserve schools, mentoring programs, and an annual consumer compliance examiner forum where senior consumer compliance examiners receive information on emerging compliance issues and are able to share best practices from across the System.

The Federal Reserve continued to offer Rapid Response sessions designed to provide examiners brief updates on emerging issues and deliver training tied to the implementation of new laws, regulations, or supervisory guidance as well as case studies. Five consumer compliance Rapid Response sessions were designed, developed, and presented to Federal Reserve staff during 2015 on the following topics:

- implementation of the new TILA/RESPA regulation (two sessions)
- introduction to the risk-focused supervision of large financial institutions for compliance examiners
- the Fair Lending Tool 5.1
- the Secure and Fair Enforcement for Mortgage Licensing Act (SAFE Act) for consumer compliance examiners

Responding to Consumer Complaints and Inquiries

The Federal Reserve investigates complaints against state member banks and selected nonbank subsidiaries of BHCs (Federal Reserve regulated entities), and forwards complaints against other creditors and businesses to the appropriate enforcement agency. Each Reserve Bank investigates complaints against Federal Reserve regulated entities in its District. The Federal Reserve also responds to consumer inquiries on a broad range of banking topics, including consumer protection questions.

In late 2007, the Federal Reserve established Federal Reserve Consumer Help (FRCH) to centralize the intake of consumer complaints and inquiries. In 2015, FRCH processed 34,251 cases. Of these cases, 24,804 were inquiries and the remainder (9,447) were complaints, with most cases received directly from consumers. Approximately 5 percent of cases were referred to the Federal Reserve from other agencies.

While consumers can contact FRCH by telephone, fax, mail, e-mail, or online, most FRCH consumer contacts occurred by telephone (61 percent). Thirty-seven percent (12,338) of complaint and inquiry submissions were made electronically (via e-mail, online submissions, and fax), and the online form page received approximately 47,359 visits during the year.

Consumer Complaints

Complaints against Federal Reserve regulated entities totaled 2,106 in 2015. Approximately 4 percent (77) of these complaints were closed without investigation, pending the receipt of additional information from consumers. Nearly 9 percent of the total complaints were still under investigation in December 2015. Sixty-four percent (1,341) involved unregulated practices and 36 percent (765) involved regulated practices. (Table 1 shows the breakdown of

[17] For more information, see www.consumercomplianceoutlook.org/outlook-live/archives/.

Table 1. Complaints against state member banks and selected nonbank subsidiaries of bank holding companies about regulated practices, by regulation/act, 2015

Regulation/act	Number
Regulation AA (Unfair or Deceptive Acts or Practices)	12
Regulation B (Equal Credit Opportunity)	29
Regulation BB (Community Reinvestment)	2
Regulation CC (Expedited Funds Availability)	65
Regulation D (Reserve Requirements)	3
Regulation DD (Truth in Savings)	56
Regulation E (Electronic Funds Transfers)	90
Regulation H (National Flood Insurance Act / Insurance Sales)	8
Regulation M (Consumer Leasing Act)	2
Regulation P (Privacy of Consumer Financial Information)	36
Regulation V (Fair and Accurate Credit Transactions)	47
Regulation Z (Truth in Lending)	135
Check21	2
Garnishment Rule	2
Fair Credit Reporting Act	173
Fair Debt Collection Practices Act	49
Fair Housing Act	24
HOPA (Homeowners Protection Act)	4
Real Estate Settlement Procedures Act	23
Right to Financial Privacy	2
Servicemembers Civil Relief Act (SCRA)	1
Total	**765**

complaints about regulated practices by regulation or act; table 2 shows complaints by product type.)

Complaints about Regulated Practices

The majority of regulated practices complaints concerned credit cards (38 percent), checking accounts (23 percent), and real estate (12 percent).[18] The most common checking account complaints related to insufficient funds/overdraft charges and procedures (28 percent), funds availability not as expected (21 percent), disputed withdrawal of funds (10 percent), and alleged forgery/fraud/embezzlement/theft (10 percent). The most common real estate complaints by problem code related to debt collection/foreclosure concerns (14 percent); disputed rates, terms, and fees (11 percent); and payment errors/delays (7 percent). The most common credit card complaints related to inaccurate credit reporting (47 percent), bank debt-collection tactics (11 percent), and payment errors/delays (9 percent).

Twenty-four regulated practices complaints alleging discrimination on the basis of prohibited borrower traits or rights were received in 2015. Twelve discrimination complaints were related to the race, color, national origin or ethnicity of the applicant or borrower. Twelve discrimination complaints were related to either the age, handicap, familial status, or religion of the applicant or borrower. Of the closed complaints alleging discrimination based on a prohibited basis in 2015, there were no violations related to illegal credit discrimination.

In 76 percent of investigated complaints against Federal Reserve regulated entities, evidence revealed that institutions correctly handled the situation. Of the remaining 24 percent of investigated complaints, 4 percent were deemed violations of law, 3 percent were identified errors which were corrected by the bank, and the remainder included matters involving litigation or factual disputes, withdrawn complaints,

[18] Real estate loans include adjustable-rate mortgages, residential construction loans, open-end home equity lines of credit, home improvement loans, home purchase loans, home refinance/closed-end loans, and reverse mortgages.

Table 2. Complaints against state member banks and selected nonbank subsidiaries of bank holding companies about regulated practices, by product type, 2015

Subject of complaint/product type	All complaints		Complaints involving violations	
	Number	Percent	Number	Percent
Total	**765**	**100**	**29**	**3.8**
Discrimination alleged				
Real estate loans	19	2.5	1	0.1
Credit Cards	0	0	0	0
Other loans	5	0.7	0	0
Nondiscrimination complaints				
Checking accounts	177	23.1	3	0.4
Real estate loans	94	12.3	11	1.4
Credit cards	292	38.2	2	0.3
Other	178	23.3	12	1.6

internally referred complaints, or information was provided to the consumer.

Complaints about Unregulated Practices

The Board continued to monitor complaints about banking practices not subject to existing regulations. In 2015, the Board received 1,341 complaints against Federal Reserve regulated entities that involved these unregulated practices. The majority of the complaints were related to electronic transactions/prepaid products (31 percent), credit cards (21 percent), checking account activity (15 percent), and commercial loans/leases (4 percent).

Complaint Referrals

In 2015, the Federal Reserve forwarded 7,336 complaints against other banks and creditors to the appropriate regulatory agencies and government offices for investigation. To minimize the time required to re-route complaints to these agencies, referrals were transmitted electronically.

The Federal Reserve also forwarded 23 complaints to the Department of Housing and Urban Development (HUD) that alleged violations of the Fair Housing Act.[19] The Federal Reserve's investigation of these complaints revealed no instances of illegal credit discrimination and were closed in 2015.

Consumer Inquiries

The Federal Reserve received 24,804 consumer inquiries in 2015 covering a wide range of topics. Consumers were typically directed to other resources, including other federal agencies or written materials, to address their inquiries.

Consumer Laws and Regulations

Throughout 2015, DCCA continued to administer the Board's regulatory responsibilities with respect to certain entities and specific statutory provisions of the consumer financial services and fair lending laws. This included drafting regulations and issuing interpretations and compliance guidance for the industry and the Reserve Banks.

Flood Insurance Rule

In July 2015, the Board, along with the Farm Credit Administration, the FDIC, the NCUA, and the OCC jointly issued a final rule to amend regulations pertaining to loans secured by residential improved real estate or mobile homes located in special flood hazard areas.[20] The rule implements provisions of the Biggert-Waters Flood Insurance Reform Act of 2012 (Biggert-Waters Act) relating to forced placement of flood insurance and provisions of the Homeowner Flood Insurance Affordability Act of 2014 (HFIAA) relating to escrowing flood insurance payments and the exemption of certain detached structures from the mandatory flood insurance purchase requirement. HFIAA amends the escrow provisions of the Biggert-Waters Act.

In issuing the final rule, the agencies implemented the Biggert-Waters Act force placement of flood insurance provisions to clarify that lenders have the authority to charge a borrower for the cost of flood insurance coverage commencing on the date on which the borrower's coverage lapsed or became insufficient. The rule also stipulates the circumstances under which the lender must terminate force-placed flood insurance and sets forth documentary evidence of flood insurance that a lender must accept.

In accordance with HFIAA, the final rule requires regulated lending institutions to escrow flood insurance premiums and fees for loans made, increased, extended, or renewed on or after January 1, 2016, unless the regulated lending institution or a loan qualifies for a statutory exception. In addition, for outstanding residential loans made before that date, the rule requires institutions to provide borrowers the option to escrow flood insurance premiums and fees. To facilitate compliance, the agencies' rule includes new and revised sample notice forms and clauses concerning the escrow requirement and the option to escrow.

Consistent with HFIAA, the rule eliminates the legal requirement to purchase flood insurance for a structure that is a part of a residential property located in a special flood hazard area if that structure is detached from the primary residential structure and does not also serve as a residence. Under HFIAA, however, lenders may nevertheless require the purchase of flood insurance for such structures to protect the value of the collateral securing the loan.

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[19] A memorandum of understanding between HUD and the federal bank regulatory agencies requires that complaints alleging a violation of the Fair Housing Act be forwarded to HUD.

[20] For more information, see www.federalreserve.gov/newsevents/press/bcreg/20141024a.htm.

In a separate rulemaking, the agencies will address provisions of the Biggert-Waters Act related to lenders' acceptance of private flood insurance.

Consumer Research and Emerging-Issues and Policy Analysis

Throughout 2015, DCCA analyzed emerging issues in consumer financial services policies and practices in order to understand their implications for the market-risk surveillance and supervisory policies that are core to the Federal Reserve's functions, as well as to gain insight into consumer financial decisionmaking.

Researching Issues Affecting Consumers and Communities

In 2015, DCCA explored various issues related to consumers and communities by convening experts, conducting original research, and fielding new and ongoing surveys. The information gleaned from these undertakings provided insights into the factors affecting consumers and households.

Consumer Behavior Research Surveys

In order to better understand consumer decisionmaking in the rapidly evolving financial services sector, DCCA periodically conducts Internet panel surveys to gather data on consumers' experiences and perspectives on various issues of interest.

With respect to ongoing surveys, DCCA conducted its annual survey of consumers' use of, and opinions about, mobile financial services. Since 2011, the survey has polled more than 2,200 individuals each year to learn whether and how they use mobile devices for banking and payments. The survey was also among the first to integrate questions about using mobile devices for shopping and comparing products along with questions about using mobile devices for banking and payments.

The findings of these surveys, conducted in the winter, are released each spring in the report *Consumers and Mobile Financial Services*. Results from the survey conducted in November 2014 were published in March 2015.[21] For the fifth survey, conducted in December 2015, results will be published in March 2016. Given the rapid pace of developments in the mobile financial services market, DCCA plans to consider what has been learned from the five surveys to determine the future direction of the research in this area.

In addition, results from DCCA's newest survey in the financial services area—the Survey of Household Economics and Decisionmaking (SHED) —were published in the *Report on the Economic Well-Being of U.S. Households in 2014*, released in May 2015. DCCA launched the survey to better understand consumer decisionmaking in the wake of the Great Recession, with the aim to capture a snapshot of the financial and economic well-being of U.S. households. In doing so, the SHED collects information on households that is not readily available from other sources or is not available in combination with other variables of interest. Key findings from the 2014 survey include:

- Individuals and their families experienced only mild improvements in their overall well-being, but they are increasingly optimistic about the trajectory of their well-being going forward.
- Forty-nine percent of part-time workers and 36 percent of all workers would prefer to work more hours at their current wage if they were able to do so.
- Twenty-nine percent of respondents expect their income to be higher in the year after the survey than in the year prior to the survey.
- Most renters express a preference for homeownership. However, many renters—and especially lower-income renters—indicate that financial barriers to homeownership prevent them from purchasing a home.
- Forty-seven percent of respondents say they either could not cover an emergency expense costing $400, or would cover it by selling something or borrowing money.
- Twenty percent of respondents report that their spending exceeded their income in the 12 months prior to the survey.
- Sixty percent of respondents indicate they are either somewhat or very confident they would be approved for a mortgage if they were to apply.
- Just under one-third of those who applied for credit in the 12 months prior to the survey were

[21] See Board of Governors of the Federal Reserve System, *Consumers and Mobile Financial Services 2015* (Washington: Board of Governors, March 2015), www.federalreserve.gov/econresdata/consumers-and-mobile-financial-services-report-201503.pdf.

Box 1. Why Research on Economic Mobility Matters

Opportunities to advance economically through the achievement of higher incomes and wealth accumulation are fundamental to the growth and vitality of families, communities, and the overall economy. While economic, technological, and social changes have historically provided a spark for innovation and improved mobility, in the wake of the financial crisis there is some concern about future progress, particularly for financially vulnerable populations. Understanding the factors that help or hinder economic mobility can lead to more successful efforts to advance it.

To bridge the gap between research, policy, and practice on key issues facing the country around economic mobility, the Federal Reserve System's Community Development Offices dedicated the ninth biennial Community Development Research Conference to this topic in April 2015.[1] Titled "Economic Mobility: Research and Ideas on Strengthening Families, Communities & the Economy," the conference offered research and presentations that focused on the factors that contribute to and challenge economic mobility, particularly among lower-income households and communities. Federal Reserve Chair Janet Yellen provided opening remarks for the event.[2]

Research and perspectives were presented in a dialogue with policymakers and community practitioners who can utilize the lessons gleaned from the findings. Scholars explored whether fundamental changes in our economy—especially those associated with the Great Recession—are diminishing the ability of families, communities, and the economy to adapt, innovate, and grow.[3] Their presentations focused on three central questions:

- How do families, households, and individuals experience economic mobility?
- What is the relationship between communities and economic mobility?
- How does economic mobility, or the lack of it, impact the broader economy? How do macroeconomic forces affect individual- or community-level economic mobility options and outcomes?

A publication drawing on these presentations will be published and made available online in 2016.

1 For more information on the agenda and research presented, see www.stlouisfed.org/community-development/economic-mobility-conference-2015.

2 Chair Yellen's remarks are available at www.federalreserve.gov/newsevents/speech/yellen20150402a.htm. For more information, see also www.federalreserve.gov/newsevents/speech/yellen20141017a.htm.

3 Featured speakers included Federal Reserve Board Governor Lael Brainard, whose speech, "Coming of Age in the Great Recession," is available at www.federalreserve.gov/newsevents/speech/brainard20150402a.htm.

turned down or given less credit than they applied for.

- Many individuals report that they are not planning for retirement and not saving for retirement.
- Across a range of dimensions, individuals in lower-income households express a higher frequency of financial challenges.

System Research Conference

In April 2015, DCCA staff organized (in partnership with the Federal Reserve Bank of St. Louis) the ninth biennial Federal Reserve System's Community Development Research Conference. Over the years, this unique event has aimed to bridge the gap among research, policy, and practice on key issues facing the country. The 2015 conference informed a robust public conversation about economic mobility. The conference organizers used the broad theme of economic mobility to advance understanding about how people and communities get ahead, where impediments exist, how factors such as inequality play a role, and what has changed over time. (See box 1 for more details.) Emerging research was presented in a dialogue with policymakers and community practitioners who can utilize the lessons gleaned from research.

Emerging-Issues Analysis

The Policy Analysis function of DCCA provides key insights, information, and analysis on emerging financial services issues that affect the well-being of consumers and communities. To this end, Policy Analysis staff analyze and anticipate trends, lead division-wide issues working groups, and organize expert roundtables to identify emerging consumer risks and inform policy recommendations.

In 2015, the Policy Analysis team developed analyses on a broad range of issues that have the potential to pose risks in consumer financial service markets. Also, the team contributed to the planning for the six public outreach meetings held as part of decennial

review of banking regulations under the Economic Growth and Regulatory Paperwork Reduction Act.

Student Loan Forum

Though research suggests that the lifetime returns to completing a college degree are, on average, positive and substantial, these returns largely depend upon program completion, institution attended, and subject matter studied. In fact, many students take on debt that they are later unable to repay. In October 2015, the Policy Analysis team hosted an invitation-only forum for researchers and college administrators to discuss issues related to the financial decisionmaking of students, in particular, taking on student debt. Current research presented at the forum focused on how students and their parents gather information about enrolling in and paying for college. For example, studies show that Hispanics are more sensitive to distance from home relative to blacks or whites when it comes to choosing where to apply and that a disproportionate share of blacks enroll in for-profit schools, which tend to have lower expected returns than public and nonprofit institutions.

As for policy implications, participants noted that many students are not aware of how much they borrow to pay for college and cannot accurately estimate how large their monthly payments will be once in repayment. Participants also discussed strategies for more effectively delivering financial information to borrowers and identified opportunities for improving the existing student loan repayment system.

Monitoring Trends in Auto Lending

The Policy Analysis team continued to monitor developments in auto lending. Federal Reserve research shows a solid recovery of the auto market post-crisis and growth in auto loan originations. However, concerns have been raised among consumer advocates and the media that increased lending to below-prime borrowers and the use of high-cost loans and longer loan terms could result in financial hardship for households struggling with living expenses and other debt obligations.

Small Business Borrowers and Alternative Lending

Reports suggest more small businesses are turning to online alternative lenders for working capital. These nonbank lenders offer small-dollar cash advances and short-term loans. Many provide funds in days or even hours, using data-driven approaches for underwriting and pricing. While promising for expanding access to credit, the industry also raises potential risks for borrowers, as these products can be considerably more expensive than traditional credit. Typical quantitative surveys do not probe small businesses' trust, understanding, or perceptions of these alternatives. Together with colleagues at the Federal Reserve Bank of Cleveland, the Board's Policy Analysis team conducted online focus groups of potential small business borrowers to help shed light on these issues. Online focus groups are an effective way to convene geographically dispersed small business respondents—a group particularly hard to reach face-to-face.

A report, *Alternative Lending through the Eyes of Mom & Pop Small Business Owners*, was published in August 2015.[22] The study revealed that online lender websites are appealing, but raise data security and privacy concerns. Furthermore, small businesses find comparing products difficult using information typically presented on lenders' websites. Finally, small businesses appear to view "online" as a place, rather than a category of lending—a finding with important implications for future quantitative work on this topic.

Community Development

The Federal Reserve System's Community Development function promotes economic growth and financial stability—particularly for underserved households and communities—by informing research, policy, and action. As a decentralized function, the Community Affairs Officers at each of the 12 Reserve Banks design activities to respond to the specific needs of the communities they serve, with oversight from Board staff to promote and coordinate Systemwide priorities.

Exploring Experiences and Expectations in the Labor Market

The fragility and unevenness of the economic recovery has motivated many individuals (entrant, current, and former workers) to search for remedies and stopgap measures for making ends meet. In 2015, the Community Development staff at the Federal

[22] See Barbara J. Lipman and Ann Marie Wiersch, *Alternative Lending through the Eyes of "Mom & Pop" Small Business Owners: Findings from Online Focus Groups* (Cleveland: Federal Reserve Bank of Cleveland, August 2015), www.clevelandfed.org/en/newsroom-and-events/publications/special-reports/sr-20150825-alternative-lending-through-the-eyes-of-mom-and-pop-small-business-owners.aspx.

Reserve fielded two surveys to explore the experiences and expectations of individuals in the labor market. Staff reviewed existing research and engaged external research and policy experts to identify the potential economic implications of changing nature in these labor market trends. This initial exploration raised several questions about the experiences of workers that were not fully explained by existing data.

The Survey of Enterprising and Informal Work Activity examined the extent to which individuals are increasingly acting as their own agents of employment rather than employees of a particular firm to supplement or supplant income. The survey measures the incidence of various income-generating activities and their economic importance to the individuals that engage in them. It also assesses the relative frequency and importance of work activities over time, particularly in response to the growing income inequality and difficulty in securing employment with living-wages and secure benefits. Finally, the survey identifies the characteristics of these entrepreneurial individuals and the corresponding types of activities they pursue.

Similarly, the Survey of Young Workers examines the perceptions and experiences of adults—ranging in age from 18 to 30—in the labor market. The survey attempts to understand the connection between educational choices and employment opportunities. It captures the satisfaction of young workers in their jobs and in their prospects of upward mobility. Lastly, the survey examines the respondents' outlook on the economy and the drivers behind their optimism and pessimism.

Reports that summarize the findings from these surveys, as well as frame future research and policy considerations by the Federal Reserve, will be forthcoming in 2016.

Engaging the Board on Community Development Issues and Concerns

In 2015, DCCA led the formation of the Federal Reserve Board's new Community Advisory Council (CAC), which the Board created to serve as an advisory committee on issues affecting consumers and communities (see box 2).[23] The CAC will complement two of the Board's other advisory councils—the Federal Advisory Council and the Community Depository Institutions Advisory Council—whose members represent depository institutions. (For a list of CAC members in 2015, as well as members of other Board advisory councils, see section 14, "Federal Reserve System Organization.")

[23] For more information see www.federalreserve.gov/newsevents/press/other/20150413a.htm and www.federalreserve.gov/newsevents/press/other/20150922a.htm.

Box 2. Advising the Board on Consumer and Community Development Issues

On November 20, 2015, the Board convened the inaugural meeting of its Community Advisory Council (CAC), which was established to offer diverse perspectives on the economic circumstances and financial services needs of consumers and communities. The Board will meet semiannually with the CAC to gain these insights directly from community leaders and other experts on community and consumer affairs. The CAC complements information provided by the members of the Board's other advisory councils—the Federal Advisory Council and the Community Depository Institutions Advisory Council—which are comprised of representatives of financial institutions.

The CAC's 15 members were selected from submissions received through a public process and include a broad group of experts and representatives of consumer and community development organizations and interests, with a particular focus on the concerns of low- and moderate-income (LMI) consumers and communities.[1] For instance, members represent such fields as affordable housing, community and economic development, small business, and asset and wealth building. Council members also represent various urban and rural communities from across the country, bringing geographically diverse viewpoints to the discussions.

The Federal Reserve carries out numerous functions that benefit from the advice the council provides. These include banking supervision and regulatory compliance (including the enforcement of consumer protection, fair lending, and community reinvestment laws) for the financial institutions it supervises; systemic risk oversight; and the Board's assessment of economic and financial conditions as part of its monetary policy decisionmaking.

During their initial meeting with the Board, CAC members emphasized that the economic recovery has not reached all segments of the population, particularly LMI individuals and communities of color. Members also noted that underserved households and communities have found it exceedingly difficult to access fair and affordable credit and financial services since the Great Recession. A summary of the CAC's discussion with the Board of Governors is available at www.federalreserve.gov/aboutthefed/cac.htm under "Records of the meetings of the Community Advisory Council."

[1] For more information, see www.federalreserve.gov/newsevents/press/other/20150413a.htm and www.federalreserve.gov/newsevents/press/other/20150922a.htm.

6 Federal Reserve Banks

The Federal Reserve Banks provide payment services to depository and certain other institutions, distribute the nation's currency and coin to depository institutions, and serve as fiscal agents and depositories for the U.S. government and other entities. The Reserve Banks also contribute to setting national monetary policy and supervision of banks and other financial entities operating in the United States (discussed in sections 2 through 4 of this annual report).

Federal Reserve Priced Services

Reserve Banks provide a range of payment and related services to depository and certain other institutions; these "priced services" include collecting checks, operating an automated clearinghouse (ACH) service, transferring funds and securities, and providing a multilateral settlement service.[1]

The Reserve Banks have been engaged in a number of multiyear technology initiatives that will modernize their priced-services processing platforms. The Reserve Banks reached a significant milestone in the multiyear Fedwire Modernization Program by successfully migrating the Fedwire Securities Service off the legacy mainframe system in November 2015. (The Banks completed the migration of the Fedwire Funds Service in 2014.) The Reserve Banks suspended the FedACH technology modernization initiative and began to investigate the use of other technology solutions in 2014, and after an extensive review of options for an alternative processing solution, the Reserve Banks selected a vendor and signed a contract in December 2015 to proceed with the new FedACH platform.

On July 23, 2015, the Reserve Banks implemented new posting rules for ACH and commercial check transactions associated with the changes to part II of the Policy on Payment System Risk and companion amendments to Regulation J adopted by the Federal Reserve Board in December 2014.[2] Under the new posting rules, commercial and government ACH debit and credit transactions specified for future settlement post at 8:30 a.m., and commercial check transactions settle at 8:30 a.m., 1:00 p.m., and 5:30 p.m., with the bulk of credits for deposits and debits for presentments settling at 8:30 a.m.[3] The amendments to Regulation J permit the Reserve Banks to obtain settlement from paying banks as early as 8:30 a.m. for checks that the Reserve Banks present. The amendments also permit the Reserve Banks to require paying banks that receive presentment of checks from the Reserve Banks to make the proceeds of settlement for those checks available to the Reserve Banks as soon as 30 minutes after receipt of the checks.

Cost Recovery

The Monetary Control Act of 1980 requires that the Federal Reserve establish fees for priced services to recover, over the long run, all direct and indirect costs actually incurred as well as the imputed costs that would have been incurred—including financing costs, taxes, and certain other expenses—and the return on equity (profit) that would have been earned if a private business firm had provided the services.[4] The imputed costs and imputed profit are collectively referred to as the private-sector adjustment factor (PSAF). From 2006 through 2015, the Reserve Banks

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1 The ACH enables depository institutions and their customers to process large volumes of payments through electronic batch processes.

2 Federal Reserve Policy on Payment System Risk; Procedures for Measuring Daylight Overdrafts, 79 Fed. Reg. 72,112 (December 5, 2014), www.gpo.gov/fdsys/pkg/FR-2014-12-05/pdf/2014-28664.pdf; Collection of Checks and Other Items by Federal Reserve Banks and Funds Transfers Through Fedwire: Time of Settlement by a Paying Bank for an Item Received From a Reserve Bank, 79 Fed. Reg. 72,107 (December 5, 2014), www.gpo.gov/fdsys/pkg/FR-2014-12-05/pdf/2014-28516.pdf.

3 All times are eastern time unless otherwise specified.

4 Depository Institutions Deregulation and Monetary Control Act, Pub. L. No. 96–221, 94 Stat. 132 (1980). Financial data reported throughout this section—including revenue, other income, costs, income before taxes, and net income—will reference the "Pro Forma Financial Statements for Federal Reserve Priced Services" at the end of this section.

Table 1. Priced services cost recovery, 2006–15
Millions of dollars, except as noted

Year	Revenue from services[1]	Operating expenses and imputed costs[2]	Targeted return on equity[3]	Total costs	Cost recovery (percent)[4]
2006	1,029.7	874.8	72.0	946.8	108.8
2007	1,012.3	912.9	80.4	993.3	101.9
2008	873.8	820.4	66.5	886.9	98.5
2009	675.4	707.5	19.9	727.5	92.8
2010	574.7	532.8	13.1	545.9	105.3
2011	478.6	444.4	16.8	461.2	103.8
2012	449.8	423.0	8.9	432.0	104.1
2013	441.3	409.3	4.2	413.5	106.7
2014	433.1	418.7	5.5	424.1	102.1
2015	429.1	397.8	5.6	403.4	106.4
2006–15	6,397.7	5,941.6	292.9	6,234.5	102.6

Note: Here and elsewhere in this section, components may not sum to totals or yield percentages shown because of rounding.

1 For the 10-year period, includes revenue from services of $6,019.7 million and other income and expense (net) of $378.0 million.

2 For the 10-year period, includes operating expenses of $5,710.5 million, imputed costs of $24.6 million, and imputed income taxes of $206.5 million.

3 From 2009 to 2012, the PSAF was adjusted to reflect the actual clearing balance levels maintained; previously, the PSAF had been calculated based on a projection of clearing balance levels.

4 Revenue from services divided by total costs. For the 10-year period, cost recovery is 92.8 percent, including the effect of accumulated other comprehensive income (AOCI) reported by the priced services under ASC 715. For details on changes to the estimation of priced services accumulated other comprehensive income and their effect on the pro forma financial statements, refer to note 3 to the "Pro Forma Financial Statements for Federal Reserve Priced Services" at the end of this section.

recovered 102.6 percent of the total priced services costs, including the PSAF (see table 1).[5]

In 2015, Reserve Banks recovered 106.4 percent of the total priced services costs, including the PSAF.[6] The Reserve Banks' operating expenses and imputed costs totaled $397.8 million. Revenue from operations totaled $429.1 million, resulting in net income from priced services of $31.3 million. All services achieved full cost recovery. Greater-than-expected check volume processed by the Reserve Banks was the single most significant factor influencing priced services cost recovery.

Commercial Check-Collection Service

The commercial check-collection service provides a suite of electronic and paper processing options for forward and return collections. In 2015, the Reserve Banks recovered 113.0 percent of the total costs of their commercial check-collection service, including the related PSAF. Revenue from operations totaled $160.6 million, resulting in net income of $20.4 million. The Reserve Banks' operating expenses and imputed costs totaled $140.2 million. Reserve Banks handled 5.5 billion checks in 2015, a decrease of 5.0 percent from 2014 (see table 2). The average daily value of checks collected by the Reserve Banks in 2015 was approximately $32.3 billion, or roughly the same as in 2014.

Commercial Automated Clearinghouse Service

The commercial ACH service provides domestic and cross-border batched payment options for same-day and next-day settlement. In 2015, the Reserve Banks recovered 100.7 percent of the total costs of their commercial ACH services, including the related PSAF. Revenue from operations totaled $125.5 million, resulting in net income of $2.7 million. The Reserve Banks' operating expenses and imputed costs totaled $122.8 million. The Reserve Banks processed 12.3 billion commercial ACH transactions in 2015, an increase of 5.8 percent from 2014 (see table 2). The average daily value of FedACH transfers in 2015 was approximately $81.9 billion, an increase of 3.4 percent from the previous year.

5 According to the Accounting Standards Codification (ASC) Topic 715 (ASC 715), Compensation–Retirement Benefits, the Reserve Banks recognized a $107.8 million reduction in equity related to the priced services' benefit plans through 2015. Including this reduction in equity, which represents a decline in economic value, results in cost recovery of 92.8 percent for the 10-year period. For details on how implementing ASC 715 affected the pro forma financial statements, refer to note 3 to the pro forma financial statements at the end of this section.

6 Total cost is the sum of operating expenses, imputed costs (income taxes, interest on debt, interest on float, and sales taxes), and the targeted return on equity.

Table 2. Activity in Federal Reserve priced services, 2013–15
Thousands of items, except as noted

Service	2015	2014	2013	Percent change	
				2014 to 2015	2013 to 2014
Commercial check	5,452,369	5,741,527	5,988,302	-5.0	-4.1
Commercial ACH	12,298,307	11,620,376	11,142,821	5.8	4.3
Fedwire funds transfer	146,006	138,133	137,219	5.7	0.7
National settlement	508	597	661	-14.9	-9.7
Fedwire securities	4,218	4,578	6,535	-7.9	-30.0

Note: Activity in commercial check is the total number of commercial checks collected, including processed and fine-sort items; in commercial ACH, the total number of commercial items processed; in Fedwire funds transfer and securities transfer, the number of transactions originated online and offline; and in national settlement, the number of settlement entries processed.

In September 2015, after consideration of public comment, the Board approved enhancements, effective beginning September 23, 2016, to the Reserve Banks' same-day ACH service. The enhancements require receiving depository financial institutions (RDFIs) to participate in the service and require originating depository financial institutions to pay a fee to the RDFIs for each same-day ACH forward transaction. The enhancements align the Reserve Banks' same-day ACH service with amendments to NACHA's (formerly the National Automated Clearing House Association) ACH operating rules and establish a ubiquitous same-day ACH service with improved efficiency for the ACH network and the broader U.S. payment system. The enhancements will facilitate the use of the ACH network for certain time-critical payments, accelerate final settlement, and improve funds availability to payment recipients, consistent with the Federal Reserve System's Strategies for Improving the U.S. Payment System (see box 1, "Improving the U.S. Payment System").

Fedwire Funds and National Settlement Services

In 2015, the Reserve Banks recovered 103.9 percent of the costs of their Fedwire Funds and National Settlement Services, including the related PSAF. Revenue from operations totaled $116.0 million, resulting in a net income of $5.9 million. The Reserve Banks' operating expenses and imputed costs totaled $110.1 million in 2015.

Fedwire Funds Service

The Fedwire Funds Service allows its participants to send or receive domestic time-critical payments using their balances at Reserve Banks to transfer funds in real time. In 2015, the number of Fedwire funds transfers originated by depository institutions increased 5.7 percent from 2014, to approximately 146 million (see table 2). The average daily value of Fedwire funds transfers in 2015 was $3.3 trillion, a decrease of 6 percent from the previous year.

National Settlement Service

The National Settlement Service is a multilateral settlement system that allows participants in private-sector clearing arrangements to settle transactions using their balances at Reserve Banks. In 2015, the service processed settlement files for 17 local and national private-sector arrangements. The Reserve Banks processed 9,372 files that contained 507,559 settlement entries for these arrangements in 2015 (see table 2). Activity in 2015 represents a 5.3 percent decrease in settlement files and a 10.9 percent decrease in settlement entries compared with 2014.

Fedwire Securities Service

The Fedwire Securities Service allows its participants to transfer electronically to other service participants certain securities issued by the U.S. Treasury Department, federal government agencies, government-sponsored enterprises, and certain international organizations.[7] In 2015, the Reserve Banks recovered 108.2 percent of the costs of their Fedwire Securities Service, including the related PSAF. Revenue from operations totaled $27.1 million, resulting in a net income of $2.4 million. The Reserve Banks' operating expenses and imputed costs totaled $24.7 million in 2015. In 2015, the number of non-Treasury securi-

[7] The expenses, revenues, volumes, and fees reported here are for transfers of securities issued by federal government agencies, government-sponsored enterprises, and certain international organizations. Reserve Banks provide Treasury securities services in their role as Treasury's fiscal agent. These services are not considered priced services. For details, see "Treasury Securities Services" later in this section.

Box 1. Improving the U.S. Payment System

The Federal Reserve plays many roles in the payment system, including payment system operator, supervisor of financial institutions and systemically important financial market utilities, regulator, researcher, and catalyst for improvement. Acting primarily in its catalyst role, the Federal Reserve encouraged payments stakeholders to join together to improve the payment system in the United States in its "Strategies for Improving the U.S. Payment System" paper, issued in January 2015. The paper communicates desired outcomes for the payment system and outlines the strategies and tactics the Federal Reserve will pursue, in collaboration with stakeholders, to help the country achieve these outcomes. Two of the strategies called for the creation of task forces focused on faster payments and payment security. The task forces will allow private-sector participants to collaborate to create new approaches that will serve the public. More than 300 participants from a range of stakeholders have joined the Faster Payments Task Force, and almost 200 have joined the Secure Payments Task Force.

Over the course of the year, the Faster Payments Task Force developed a decisionmaking framework for approving key task force processes, initiatives, and work products; issued a glossary of terms to provide a foundation for a common lexicon; approved effectiveness criteria that will be used to assess potential faster payments solutions; and created a plan for conducting a qualified independent assessment of faster payments solutions. In its next phases, the Faster Payments Task Force, with input from the Secure Payments Task Force, plans to assess possible faster payment solutions and lay out its thinking on the opportunities and potential issues or barriers for implementing faster payments in the United States.

The Secure Payments Task Force developed success statements to guide the task force's efforts, discussed areas of focus and identified four topic-specific work groups to be launched in 2016, and developed a list of ideas for advising the Federal Reserve. The task force is also actively engaged with the work of the Faster Payments Task Force.

The Federal Reserve and the task forces are working to maintain transparency throughout the process. For example, the Federal Reserve has developed the FedPayments Improvement website (https://fedpaymentsimprovement.org/), which hosts a FedPayments Improvement Community that enables interested parties to stay informed and to engage in an exchange of information pertaining to the Federal Reserve's efforts to improve the U.S. payment system.

ties transfers processed via the service decreased 7.9 percent from 2014, to approximately 4.2 million (see table 2). The average daily value of Fedwire Securities transfers in 2015 was $1.2 trillion, an increase of 2.6 percent from the previous year.

Float

In 2015, the Reserve Banks had daily average credit float of $193.2 million, compared with daily average credit float of $590.8 million in 2014.[8]

Currency and Coin

The Board is the issuing authority for the nation's currency (in the form of Federal Reserve notes). In 2015, the Board paid Treasury's Bureau of Engraving and Printing (BEP) $637.3 million for costs associated with the production of nearly 7.1 billion Federal Reserve notes. The Reserve Banks distribute and receive currency and coin through depository institutions in response to public demand. Together, the Board and Reserve Banks work to maintain the integrity of and confidence in Federal Reserve notes.

In 2015, the Reserve Banks distributed 36.8 billion Federal Reserve notes into circulation, a 1.5 percent decrease from 2014, and received 35.1 billion Federal Reserve notes from circulation, a 1.5 percent decrease from 2014. In 2015, the Reserve Banks also distributed 71.4 billion coins into circulation, a 2.9 percent increase from 2014, and received 55.9 billion coins from circulation, a 0.9 percent decrease from 2014.

The value of Federal Reserve notes in circulation increased nearly 6.2 percent in 2015, to $1,380 billion at year-end. The increase in value is largely attributable to increased demand for $100 notes, which are used internationally primarily as a store of value. Demand for denominations primarily used for domestic transactions also increased. The volume of $1 and $20 notes in circulation increased 4.2 percent in 2015, compared with 6.7 percent growth in the volume of $100 notes in circulation.

[8] Credit float occurs when the Reserve Banks debit the paying bank for checks and other items prior to providing credit to the depositing bank.

Improvements to Efficiency and Risk Management

During 2014 and 2015, the Reserve Banks tested and implemented several new concepts in receiving and high-speed processing of cash to improve operational flexibility and cost-effectiveness, while still maintaining a well-controlled environment. The Federal Reserve estimates that the implementation of these new concepts will result in savings of more than $5 million between 2014 and 2016, primarily because of lower personnel expenses.

Other Improvements and Efforts

During 2015, the Reserve Banks continued to develop a new cash automation platform (CashForward) that will replace legacy software applications, automate business concepts and processes, and employ technologies to meet the cash business's current and future needs more cost-effectively. The new platform will also facilitate business continuity and contingency planning and enhance the support provided to Reserve Bank customers. During 2015, the Federal Reserve completed development of the application and began integration and quality assurance testing. Deployment of the application at each Reserve Bank is estimated to begin in mid-2016 and finish by late 2017.

Fiscal Agency and Government Depository Services

As fiscal agents and depositories for the federal government, the Reserve Banks auction Treasury securities, process electronic and check payments for Treasury, collect funds owed to the federal government, maintain Treasury's bank account, and develop, operate, and maintain a number of automated systems to support Treasury's mission. The Reserve Banks also provide certain fiscal agency and depository services to other entities; these services are primarily related to book-entry securities. Treasury and other entities fully reimburse the Reserve Banks for the expense of providing fiscal agency and depository services.

In 2015, fiscal agency expenses increased to $650.6 million (see table 3), primarily as a result of requests from Treasury's Bureau of the Fiscal Service (Fiscal Service) and the addition of $54.6 million in Reserve Bank pension costs to be reimbursed by Treasury and other entities.[9] Support for Treasury programs accounted for 94.1 percent of expenses, and support for other entities accounted for 5.9 percent.

In April 2014, as part of the federal government's effort to increase operational efficiency and effectiveness, Treasury announced the consolidation of the fiscal agency services provided by the Reserve Banks. Although Treasury expects long-term savings by reducing the number of Reserve Banks that provide fiscal agency services, an increase in expenses is projected during the consolidation process, which will continue over the next several years. In 2015, total consolidation expenses amounted to $27.2 million, as a result of the first three Reserve Bank business lines that transitioned and preparations for the upcoming transitions.[10] Consolidation expenses are included in the line items for Payment, Collection, and Cash-management services in table 3.

Treasury Securities Services

The Reserve Banks work closely with Treasury's Fiscal Service in support of the borrowing needs of the federal government. The Reserve Banks auction, issue, maintain, and redeem securities; provide customer service; and operate the automated systems supporting U.S. savings bonds and marketable Treasury securities (bills, notes, and bonds). Treasury securities services consist of retail securities programs, which primarily serve individual investors, and wholesale securities programs, which serve institutional customers.

Retail Securities Programs

Reserve Bank operating expenses for the retail securities program decreased to $52.9 million in 2015, largely because of the transition of the savings bond print operation from the Reserve Banks to the Treasury and the decommissioning of the Legacy Treasury Direct system as part of an ongoing effort to elimi-

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9 Board policy requires the Reserve Banks to seek reimbursement for the costs to provide fiscal agency services. Historically, the Reserve Banks did not seek reimbursement for pension benefits to Reserve Bank employees who support fiscal agency services. The Reserve Banks began to seek reimbursement for the one-time pension costs that resulted from consolidation activities in 2014 and to seek full reimbursement for all fiscal agency-related pension costs beginning in 2015. Pension costs are shown in the aggregate across programs in table 3 rather than by each program.

10 The 10 remaining business lines are scheduled to transition over the next three years, with the majority transitioning in 2016.

Table 3. Expenses of the Federal Reserve Banks for fiscal agency and depository services, 2013–15
Thousands of dollars

Agency and service	2015	2014[r]	2013
Department of the Treasury			
Treasury securities services			
Treasury retail securities	52,945	54,958	55,334
Treasury auction	35,701	29,491	26,673
Treasury securities safekeeping and transfer	21,254	16,568	14,397
Computer infrastructure development and support	6,371	5,792	5,801
Other services	2,194	853	2,971
Total	118,465	107,662	105,176
Payment, collection, and cash-management services			
Payment services	161,681	157,869	151,715
Collection services	59,513	52,878	44,788
Cash-management services	79,161	74,428	66,519
Computer infrastructure development and support	89,069	79,289	75,565
Other services	10,998	11,465	9,360
Total	400,422	375,928	347,947
Other Treasury			
Total	41,971	44,756	42,826
Total, Treasury	560,857	528,346	495,949
Other entities			
Total, other entities	35,140	34,588	34,077
Pension costs			
Total, Treasury and other entities	54,586	6,704	n/a
Total reimbursable expenses	650,583	569,638	530,026

Note: "Pension costs" is a new category in this table. The 2014 figures were restated to reflect this change.
r Revised.
n/a Not applicable.

nate aging technology platforms.[11] Program expense drivers included the Reserve Banks' implementation of a virtual case-file system and a virtual contact center to modernize retail securities services, and increased staffing to manage the increasing inventory of savings bond redemption work.

The Reserve Banks also provided support to Treasury's Retail Program Review initiative, which will define the retail securities program's future mission, vision, and operating model. Operating expenses to support this effort were $1.4 million in 2015.

Wholesale Securities Programs

The Reserve Banks support wholesale securities programs through the sale, issuance, safekeeping, and transfer of marketable Treasury securities for institutional investors. The Reserve Banks conducted 272 Treasury securities auctions in 2015. Of the 272 auctions, 12 auctions were for Floating Rate Notes—a marketable Treasury security with a floating rate interest payment that was introduced in 2014.[12]

In 2015, Reserve Bank operating expenses to support Treasury securities auctions increased to $35.7 million. Operating expenses were driven by upgrades to the auction system, which receives and processes bids submitted primarily by wholesale securities auction participants.[13]

Operating expenses associated with Treasury securities safekeeping and transfer activities increased to $21.3 million in 2015, as a result of the Reserve Banks' effort to migrate the securities services from a mainframe system to a distributed computing environment.

[11] The Legacy Treasury Direct system was established in 1986. The system allowed U.S. individual investors to purchase and hold Treasury marketable securities (for example, notes and bonds).

[12] Floating Rate Notes were the first new Treasury security issued since the introduction of Treasury Inflation-Protected Securities almost two decades ago.

[13] Wholesale securities auction participants include depository institutions, dealers and brokers, investment funds, pension and retirement funds, foreign and international entities, and individual investors.

Payment Services

The Reserve Banks work closely with the Treasury's Fiscal Service and other government agencies to process payments to individuals and companies. The Reserve Banks process federal payroll payments, Social Security and veterans' benefits, income tax refunds, vendor payments, and other types of payments.

Reserve Bank operating expenses for payments-related activity increased to $161.7 million in 2015. Expenses were primarily attributable to increased consolidation expenses, and increased program expenses associated with Do Not Pay (DNP), International Treasury Services (ITS), Post Payment System (PPS), and Stored Value Card (SVC). These expense increases were partly offset by decreased expenses for the U.S. Treasury Electronic Payment Solution Center (formerly known as the Go Direct Contact Center) and Invoice Processing Platform (IPP).

In support of Treasury's DNP initiative, the Reserve Banks continued to enhance the DNP Portal, which is a single point of access through which federal agencies can query multiple data sources before making federal payments. In 2015, expenses for DNP increased to $17.7 million, largely because of increased staffing to support the advanced analytics function.

The Reserve Banks operate the ITS application, which provides cross-border payment and collection services as well as cash-management functions on behalf of the Treasury. U.S. government agencies use ITS to issue international benefit, payroll, and vendor payments in 100 currencies to recipients in established and emerging markets. ITS expenses in 2015 increased to $20.2 million primarily because of $6.5 million in consolidation costs.

The Reserve Banks continued work on the PPS initiative, a multiyear effort to modernize several of Treasury's legacy post-payment processing systems into a single application to enhance operations, reduce expenses, improve data analytics capabilities, and provide a centralized and standardized set of payment data. In 2015, program expenses for PPS increased to $16.6 million, as the result of greater system development expenses, and $2.1 million in consolidation expenses.

In 2015, Reserve Bank operating expenses for Treasury's SVC business increased to $19.8 million, largely because of $3.3 million in expenses associated with the transition of the Navy Cash program from a third-party financial agent, and $3.7 million in consolidation costs.[14]

The Reserve Banks operate the U.S. Treasury Electronic Payment Solution Center, which helps convert individuals' federal benefit payments from paper check to electronic delivery. As of December 2015, 98.0 percent of all federal benefit payments were made electronically. In 2015, expenses for the U.S. Treasury Electronic Payment Solution Center were $15.7 million.

The IPP is part of Treasury's all-electronic initiative—an electronic invoicing and payment information system that allows vendors to enter invoice data electronically, through either a web-based portal or electronic submission. The IPP accepts, processes, and presents data from agencies and supplier systems related to all stages of a payment transaction, including the purchase order, invoice, and other payment information. In 2015, the Reserve Banks' IPP expenses decreased to $21.4 million, primarily because of decreased consolidation expenses. The reduction of expenses was partially offset by increased program expenses to support a new Office of Management and Budget mandate that requires agencies to implement an electronic invoicing solution for commercial transactions by 2018.

Collection Services

The Reserve Banks also work closely with the Fiscal Service to collect funds owed to the federal government, including various taxes, fees for goods and services, and delinquent debts. In 2015, Reserve Bank operating expenses related to collection services increased to $59.5 million, largely because of greater operating expenses for Pay.gov, eCommerce, and the Collections Information Repository (CIR).

The Reserve Banks operate Pay.gov, an application that allows the public to use the Internet to authorize and initiate payments to federal agencies. During the year, the Pay.gov program expanded to include

[14] The Reserve Banks currently operate two military "smart card" programs, EagleCash and EZpay, on behalf of the Treasury, and will assume additional responsibilities for the Navy Cash program over the next two years. The Reserve Banks began working on the transition of Navy Cash in 2015.

100 new agency programs and processed more than 167 million online payments totaling $148 billion. Increased operational support and expanded functionality resulted in expenses of $19.1 million in 2015.

The Reserve Banks also continued supporting the Treasury's electronic commerce initiative (eCommerce) to expand ways for agencies and the public to do business with the Treasury through online banking solutions, mobile technologies, and other payment methods. Program expenses for eCommerce increased to $4.3 million in 2015, primarily because of expenses associated with developing a new mobile payment platform that will facilitate more efficient federal revenue collections.

In 2015, the Reserve Banks began working on the transition of the CIR application from a third-party financial agent.[15] Expenses for CIR totaled $2.9 million in 2015 and were largely attributable to application development.

Treasury Cash-Management Services

The Reserve Banks maintain Treasury's operating cash account and provide collateral-management and collateral-monitoring services for those Treasury programs that have collateral requirements. The Reserve Banks also support Treasury's efforts to modernize its financial management processes by developing software, operating help desks, and managing projects on behalf of the Fiscal Service. In 2015, Reserve Bank operating expenses related to Treasury cash-management services increased to $79.2 million, of which $7.1 million was attributable to the consolidation.

During 2015, the Reserve Banks continued to support Treasury's efforts to improve centralized government accounting and reporting functions. In March 2015, the Reserve Banks, in collaboration with the Fiscal Service, deployed the Central Accounting Reporting System (CARS) as Treasury's new central accounting system of record.[16] Expenses for CARS increased to $19.9 million as a result of increased application development expenses.

Services Provided to Other Entities

When permitted by federal statute or when required by the Secretary of the Treasury, the Reserve Banks provide fiscal agency and depository services to other domestic and international entities.

Reserve Bank operating expenses for services provided to other entities increased slightly to $35.1 million in 2015. Book-entry securities issuance and maintenance activities account for a significant amount of the work performed for other entities, with the majority performed for the Federal Home Loan Mortgage Association (Freddie Mac), the Federal National Mortgage Association (Fannie Mae), and the Government National Mortgage Association (Ginnie Mae).

Use of Federal Reserve Intraday Credit

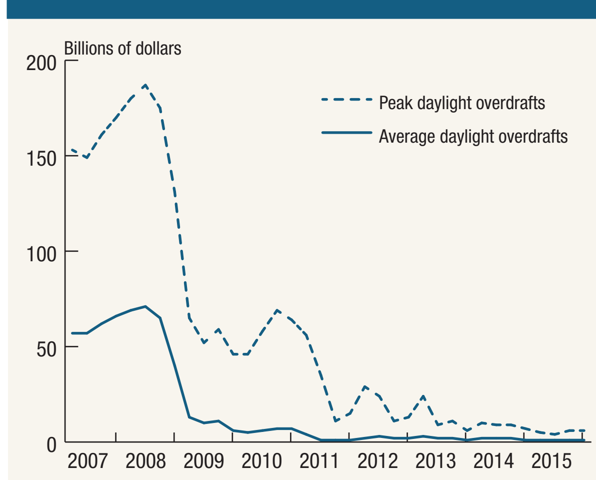
The Board's Payment System Risk policy governs the use of Federal Reserve Bank intraday credit, also known as daylight overdrafts. A daylight overdraft occurs when an institution's account activity creates a negative balance in the institution's Federal Reserve account at any time in the operating day. Daylight overdrafts enable an institution to send payments more freely throughout the day than if it were limited strictly by its available intraday funds balance. The Payment System Risk policy recognizes explicitly the role of the central bank in providing intraday balances and credit to healthy institutions; under the policy, the Reserve Banks provide collateralized intraday credit at no cost.

Before the 2007–09 financial crisis, overnight balances were much lower and daylight overdrafts significantly higher than levels observed since late 2008. The use of daylight overdrafts spiked amid the market turmoil near the end of 2008, but dropped sharply as various liquidity programs initiated by the Federal Reserve took effect. During this period, the Federal Reserve also began paying interest on balances held at the Reserve Banks, increased its lending under the Term Auction Facility, and began purchasing government-sponsored enterprise mortgage-backed securities. These measures tended to increase

[15] The CIR is a platform that enables the Fiscal Service to standardize the availability of financial information across all settlement mechanisms and collection systems, furthering transparency goals and enabling federal agencies to improve cash management decisions and performance. The CIR will transition from a third-party financial agent to the Federal Reserve System by year-end 2016.

[16] CARS provides Treasury with a modernized system for the collection and dissemination of financial management and accounting information transmitted by and to federal program agencies.

Figure 1. Aggregate daylight overdrafts, 2007–15



balances institutions held at the Banks, which decreased the demand for intraday credit. In 2007, for example, institutions held, on average, less than $20 billion in overnight balances, and total average daylight overdrafts were around $60 billion. In contrast, institutions held historically high levels of overnight balances—on average more than $2.77 trillion—at the Reserve Banks in 2015, while daylight overdrafts remained historically low. In fact, average daylight overdrafts across the Federal Reserve System declined further in 2015 to $1.13 billion from $1.62 billion in 2014, a decrease of about 30 percent (see figure 1). The average level of peak daylight overdrafts fell to $5.27 billion in 2015 from $8.44 billion in 2014; the average level of peak daylight overdrafts in 2015 was just a fraction of its level in 2008 (about 3 percent).

Daylight overdraft fees are also at historically low levels. In 2015, institutions paid about $14,100 in daylight overdraft fees; in contrast, fees totaled more than $50 million in 2008. The decrease in fees is largely attributable to the elevated level of reserve balances that began to accumulate in late 2008 and to the 2011 policy revision that eliminated fees for daylight overdrafts that are collateralized.

FedLine Access to Reserve Bank Services

The Reserve Banks' FedLine access solutions provide financial institutions with a variety of alternatives for electronically accessing the Banks' payment and information services. For priced services, the Reserve Banks charge fees for these electronic connections and allocate the associated costs and revenue to the various services. There are currently five FedLine channels through which customers can access the Reserve Banks' priced services: FedMail, FedLine Web, FedLine Advantage, FedLine Command, and FedLine Direct. These FedLine channels are designed to meet the individual connectivity, security, and contingency requirements of depository institution customers.

Between 2007 and 2015, the number of depository institutions in the United States declined 25 percent, and Reserve Bank priced FedLine connections decreased nearly 15 percent. During this same period, the number of employees within depository institutions who have FedLine credentials increased 23 percent, reflecting in part the expansion of value-added services provided and use of the network for central bank applications.[17] Between 2012 and 2015, more than 11,000 credentials for FedLine were issued to individuals accessing central bank applications for regulatory reporting purposes.

The Reserve Banks continue to maintain their focus on security and resiliency by upgrading critical elements of the FedLine solutions. Enhancements to the FedLine Advantage and FedLine Command access solutions were deployed to approximately 5,000 financial institutions, and enhancements to the FedLine Direct solution, used by approximately 250 of the largest financial institutions, are under way.

Information Technology

The Reserve Banks continued to improve the efficiency, effectiveness, and security of information technology (IT) services and operations in 2015. The Reserve Banks' National IT organization led the completion of the first year of the System IT roadmap to help System leaders forecast their future business technology needs, identify additional opportunities to employ common technology services, and make better-informed IT investment and prioritization decisions.

The Reserve Banks remained vigilant about their cybersecurity posture, investing in risk-mitigation initiatives and programs and continuously monitoring and assessing cybersecurity risks to its operations. The Federal Reserve completed implementation of a

[17] The number of employees within depository institutions who have FedLine credentials reflects a revision to the methodology used in previous years.

new information security framework for key systems in 2014 and in keeping with its requirements has started recertifying key systems every three years. The framework, known as Security Assurance for the Federal Reserve, is based on guidance from the National Institute of Standards and Technology and adapted to the Federal Reserve's environment.

Examinations of the Federal Reserve Banks

The combined financial statements of the Reserve Banks—as well as the financial statements of each of the 12 Reserve Banks and Maiden Lane LLC (ML)—are audited annually by an independent public accountant retained by the Board of Governors.[18] In addition, the Reserve Banks are subject to oversight by the Board of Governors, which performs its own reviews.

The Reserve Banks use the 2013 framework established by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) to assess their internal controls over financial reporting, including the safeguarding of assets. Within this framework, the management of each Reserve Bank annually provides an assertion letter to its board of directors that confirms adherence to COSO standards.

The Federal Reserve Board engaged KPMG LLP (KPMG) to audit the 2015 combined and individual financial statements of the Reserve Banks and ML.[19]

In 2015, KPMG also conducted audits of the internal controls associated with financial reporting for each of the Reserve Banks. Fees for KPMG's services totaled $6.7 million, of which $0.4 million was for the audit of ML. To ensure auditor independence, the Board requires that KPMG be independent in all matters relating to the audits. Specifically, KPMG may not perform services for the Reserve Banks or others that would place it in a position of auditing its own work, making management decisions on behalf of the Reserve Banks, or in any other way impairing its audit independence. In 2015, the Reserve Banks did not engage KPMG for significant non-audit services.

The Board's reviews of the Reserve Banks include a wide range of off-site and on-site oversight activities, conducted primarily by its Division of Reserve Bank Operations and Payment Systems. Division personnel monitor on an ongoing basis the activities of each Reserve Bank, National IT, and the System's Office of Employee Benefits (OEB). They conduct a comprehensive on-site review of each Reserve Bank and OEB at least once every three years and review National IT, the System Open Market Account (SOMA), and Fedwire annually.

The comprehensive on-site reviews include an assessment of the internal audit function's effectiveness and its conformance to the Institute of Internal Auditors' (IIA) *International Standards for the Professional Practice of Internal Auditing*, applicable policies and guidance, and the IIA's code of ethics.

The Board also reviews SOMA and foreign currency holdings to

- determine whether the New York Reserve Bank, while conducting the related transactions and associated controls, complies with the policies established by the Federal Open Market Committee (FOMC); and
- assess SOMA-related IT project management and application development, vendor management, and system resiliency and contingency plans.

In addition, KPMG audits the year-end schedule of participated asset and liability accounts and the related schedule of participated income accounts. The FOMC is provided with the external audit reports and a report on the Board review.

Income and Expenses

Table 4 summarizes the income, expenses, and distributions of net earnings of the Reserve Banks for 2015 and 2014. Income in 2015 was $114.2 billion, compared with $116.7 billion in 2014.

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[18] Maiden Lane LLC is a variable interest entity (VIE) created in response to the 2007–09 financial crisis, and the New York Reserve Bank is considered to be the controlling financial interest holder.

See "Federal Reserve Banks Combined Financial Statements" in section 12 of this report.

[19] In addition, KPMG audited the Office of Employee Benefits of the Federal Reserve System (OEB), the Retirement Plan for Employees of the Federal Reserve System (System Plan), and the Thrift Plan for Employees of the Federal Reserve System (Thrift Plan). The System Plan and the Thrift Plan provide retirement benefits to employees of the Board, the Federal Reserve Banks, the OEB, and the Consumer Financial Protection Bureau.

Table 4. Income, expenses, and distribution of net earnings of the Federal Reserve Banks, 2015 and 2014
Millions of dollars

Item	2015	2014
Current income	114,234	116,562
Loan interest income	*	2
SOMA interest income	113,610	115,933
Other current income[1]	624	627
Net expenses	11,140	10,715
Operating expenses	4,042	3,926
Reimbursements	-650	-570
Net periodic pension expense	563	383
Interest paid on depository institutions deposits and term deposits	6,935	6,862
Interest expense on securities sold under agreements to repurchase	248	112
Other expenses	2	2
Current net income	103,094	105,847
Net additions to (deductions from) current net income	-1,306	-2,718
Federal agency and government-sponsored enterprise mortgage-backed securities	43	81
Foreign currency translation losses	-1,382	-2,907
Net income (loss) from consolidated VIEs	36	110
Other deductions	-3	-2
Assessments by the Board of Governors	1,884	1,864
For Board expenditures	705	590
For currency costs	689	711
For Consumer Financial Protection Bureau costs[2]	490	563
Net income before providing for remittances to the Treasury	99,904	101,265
Earnings remittances to the Treasury	117,099	96,902
Interest on Federal Reserve notes	91,143	96,902
Required by the Federal Reserve Act, as amended by the FAST Act	25,956	0
Net (loss) income after providing for remittances to the Treasury	-17,195	4,363
Other comprehensive gain (loss)	366	-1,612
Comprehensive income	-16,829	2,751
Total distribution of net income	100,270	99,653
Dividends on capital stock	1,743	1,686
Transfer to surplus and change in accumulated other comprehensive income	-18,572	1,065
Earnings remittances to the Treasury	117,099	96,902

[1] Includes income from priced services, compensation received for services provided, and securities lending fees.
[2] The Board of Governors assesses the Reserve Banks to fund the operations of the Consumer Financial Protection Bureau.
* Less than $500,000.

Expenses totaled $13,024 million:

- $6,935 million in interest paid to depository institutions on reserve balances and term deposits;
- $4,042 million in Reserve Bank operating expenses;
- $563 million in net periodic pension expense;
- $248 million in interest expense on securities sold under agreements to repurchase;
- $705 million in assessments for Board of Governors expenditures;
- $689 million for the cost of producing, issuing, and retiring currency;
- $490 million for Consumer Financial Protection Bureau costs; and
- $2 million in other costs.

The expenses were reduced by $650 million in reimbursements for services provided to government agencies. Net deductions from current net income totaled $1,306 million, which includes $1,382 million in unrealized losses on foreign currency denominated investments revalued to reflect current market exchange rates, $36 million in net income associated with consolidated VIEs, and $43 million in realized gains on federal agency and government-sponsored enterprise mortgage-backed securities (GSE MBS).

Table 5. System Open Market Account (SOMA) holdings of the Federal Reserve Banks, 2015 and 2014
Millions of dollars, except as noted

Item	Average daily assets (+)/liabilities (–)		Current income (+)/expense (–)		Average interest rate (percent)	
	2015	2014	2015	2014	2015	2014
U.S. Treasury securities[1]	2,588,099	2,520,120	63,317	63,011	2.45	2.50
Government-sponsored enterprise debt (GSE) securities[1]	36,630	46,122	1,330	1,579	3.63	3.42
Federal agency and GSE mortgage-backed securities[2]	1,793,787	1,700,521	48,931	51,264	2.73	3.01
Foreign currency denominated investments[3]	19,846	23,296	31	78	0.15	0.33
Central bank liquidity swaps[4]	209	192	1	1	0.68	0.52
Other SOMA assets[5]	30	28	*	*	0.01	0.01
Total SOMA assets	4,438,601	4,290,279	113,610	115,933	2.56	2.70
Securities sold under agreements to repurchase: Primary dealers and expanded counterparties	-125,656	-130,281	-84	-68	0.07	0.05
Securities sold under agreements to repurchase: Foreign official and international accounts	-157,929	-102,968	-164	-44	0.10	0.04
Total securities sold under agreements to repurchase	-283,585	-233,249	-248	-112	0.09	0.05
Other SOMA liabilities[6]	-1,116	-1,899	n/a	n/a	n/a	n/a
Total SOMA liabilities	-284,701	-235,148	-248	-112	0.09	0.05
Total SOMA holdings	**4,153,900**	**4,055,131**	**113,362**	**115,821**	**2.73**	**2.86**

1 Face value, net of unamortized premiums and discounts.
2 Face value, which is the remaining principal balance of the securities, net of unamortized premiums and discounts. Does not include unsettled transactions.
3 Foreign currency denominated assets are revalued daily at market exchange rates.
4 Dollar value of foreign currency held under these agreements valued at the exchange rate to be used when the foreign currency is returned to the foreign central bank. This exchange rate equals the market exchange rate used when the foreign currency was acquired from the foreign central bank.
5 Cash and short-term investments related to the federal agency and government-sponsored enterprise mortgage-backed securities (GSE MBS) portfolio.
6 Represents the obligation to return cash margin posted by counterparties as collateral under commitments to purchase and sell federal agency and GSE MBS, as well as obligations that arise from the failure of a seller to deliver securities on the settlement date.
n/a Not applicable.
* Less than $500,000.

Dividends paid to member banks for 2015, set at 6 percent of paid-in capital for all member banks, totaled $1,743 million.

The Reserve Banks provided for remittances to Treasury of $117.1 billion in 2015, which included an initial transfer of $19.3 billion made in December 2015 to reduce aggregate Reserve Bank surplus to $10 billion, as required by the Fixing America's Surface Transportation Act (FAST Act).[20] The FAST Act, which amended section 7(a) of the Federal Reserve Act, requires that any Reserve Bank capital surplus in excess of $10 billion be transferred to Treasury. At the effective date of this Federal Reserve Act amendment, aggregate Reserve Bank capital surplus was $29 billion. The Reserve Banks reported a comprehensive loss of $16.8 billion after providing for remittances to Treasury.

Section 11 of this report, "Statistical Tables," provides more detailed information on the Reserve Banks. Table 9 is a statement of condition for each Reserve Bank; table 10 details the income and expenses of each Reserve Bank for 2015; table 11 shows a condensed statement for each Reserve Bank for the years 1914 through 2015; and table 13 gives the number and annual salaries of officers and employees for each Reserve Bank. A detailed account of the assessments and expenditures of the Board of Governors appears in the Board of Governors Financial Statements (see section 12, "Federal Reserve System Audits").

SOMA Holdings and Loans

The Reserve Banks' average net daily SOMA holdings during 2015 amounted to $4,154 billion, an increase of $99 billion from 2014 (see table 5).

20 The FAST Act, Pub. L. No. 114-94, 129 Stat. 1312 (2015), was enacted on December 4, 2015. Before the enactment of the FAST Act, the Board of Governors required the Reserve Banks to maintain a surplus equal to the amount of capital paid-in. The FAST Act also amended section 7 of the Federal Reserve Act related to Reserve Bank payment of dividends to member banks. The FAST Act changed the dividend rate for member banks with more than $10 billion of consolidated assets, effective January 1, 2016, to the smaller of 6 percent or the rate equal to the high yield of the 10-year Treasury note auctioned at the last auction held prior to the payment of the dividend. The FAST Act did not change the 6 percent dividend rate for member banks with $10 billion or less of total consolidated assets.

SOMA Securities Holdings

The average daily holdings of Treasury securities increased by $68 billion, to an average daily amount of $2,588 billion. The average daily holdings of GSE debt securities decreased by $9 billion, to an average daily amount of $37 billion. The average daily holdings of federal agency and GSE MBS increased by $93 billion, to an average daily amount of $1,794 billion.

The increases in average daily holdings of federal agency and GSE MBS are due to reinvestment of principal payments from other SOMA holdings in federal agency and GSE MBS. The average daily holdings of GSE debt securities decreased as a result of maturities.

There were no significant holdings of securities purchased under agreements to resell in 2015 or 2014. Average daily holdings of foreign currency denominated investments in 2015 were $19,846 million, compared with $23,296 million in 2014. The average daily balance of central bank liquidity swap drawings was $209 million in 2015 and $192 million in 2014. The average daily balance of securities sold under agreements to repurchase was $283,585 million, an increase of $50,336 million from 2014.

The average rates of interest earned on the Reserve Banks' holdings of Treasury securities decreased to 2.45 percent, and the average rates on GSE debt securities increased to 3.63 percent in 2015. The average rate of interest earned on federal agency and GSE MBS decreased to 2.73 percent in 2015. The average interest rates for securities sold under agreements to repurchase increased to 0.09 percent in 2015. The average rate of interest earned on foreign currency denominated investments decreased to 0.15 percent while the average rate of interest earned on central bank liquidity swaps increased to 0.68 percent in 2015.

Lending

In 2015, the average daily primary, secondary, and seasonal credit extended by the Reserve Banks to depository institutions increased by $7 million, to $125 million. The average rate of interest earned on primary, secondary, and seasonal credit increased to 0.28 percent in 2015, from 0.21 percent in 2014.

ML is a lending facility established in 2008 under authority of FRA section 13(3) in response to the 2007–09 financial crisis. Net portfolio assets of ML decreased from $1,811 million in 2014 to $1,778 million in 2015 and liabilities decreased from $127 million to $57 million. ML net income of $36 million in 2015 comprised interest income of $4 million, gains on investments of $35 million, and operating expenses of $3 million.

Federal Reserve Bank Premises

Several Reserve Banks took action in 2015 to maintain and renovate their facilities. The multiyear renovation programs at the New York, Richmond, Kansas City, and San Francisco Reserve Banks' headquarters buildings continued. All Reserve Banks continued to implement projects to maintain building systems to ensure efficient and reliable operations. The New York Reserve Bank continued repairs and renovations to the 33 Maiden Lane building, and the Chicago Federal Reserve Bank continued construction of security enhancements to its building. In 2015, the St. Louis Reserve Bank secured leased office space to accommodate increased Treasury services. The amount previously reported as "other real estate" for the Houston Branch of the Dallas Reserve Bank was reclassified to the "land" account in 2015, reflecting the Bank's intention to retain ownership.

For more information on the acquisition costs and net book value of the Reserve Banks and Branches, see table 14 in section 11 ("Statistical Tables") of this annual report.

Pro Forma Financial Statements for Federal Reserve Priced Services

Table 6. Pro forma balance sheet for Federal Reserve priced services, December 31, 2015 and 2014
Millions of dollars

Item	2015		2014	
Short-term assets (note 1)				
Imputed investments	132.8		556.7	
Receivables	37.2		36.9	
Materials and supplies	0.6		0.7	
Prepaid expenses	10.6		11.1	
Items in process of collection	209.9		85.7	
Total short-term assets		391.1		691.2
Long-term assets (note 2)				
Premises	123.8		131.2	
Furniture and equipment	37.6		35.9	
Leases, leasehold improvements, and long-term prepayments	110.5		101.7	
Deferred tax asset	189.8		325.6	
Total long-term assets		461.7		594.4
Total assets		852.8		1,285.6
Short-term liabilities				
Deferred-availability items	342.7		642.4	
Short-term debt	8.2		24.8	
Short-term payables	20.8		24.0	
Total short-term liabilities		371.7		691.2
Long-term liabilities				
Long-term debt	0.0		60.9	
Accrued benefit costs	426.2		459.3	
Total long-term liabilities		426.2		520.2
Total liabilities		797.9		1,211.4
Equity (including accumulated other comprehensive loss of $657.5 million and $549.7 million at December 31, 2015 and 2014, respectively)		54.9		74.2
Total liabilities and equity (note 3)		852.8		1,285.6

Note: Components may not sum to totals because of rounding. The accompanying notes are an integral part of these pro forma priced services financial statements.

Table 7. Pro forma income statement for Federal Reserve priced services, 2015 and 2014
Millions of dollars

Item	2015		2014	
Revenue from services provided to depository institutions (note 4)		429.1		433.1
Operating expenses (note 5)		381.2		399.0
Income from operations		47.9		34.1
Imputed costs (note 6)				
Interest on debt	4.2		7.1	
Interest on float	-0.2		-0.5	
Sales taxes	3.6	7.5	4.5	11.0
Income before income taxes		40.4		23.0
Imputed income taxes (note 6)		9.0		8.6
Net income		31.3		14.5
Memo: Targeted return on equity (note 6)		5.6		5.5

Note: Components may not sum to totals because of rounding. The accompanying notes are an integral part of these pro forma priced services financial statements.

Table 8. Pro forma income statement for Federal Reserve priced services, by service, 2015
Millions of dollars

Item	Total	Commercial check collection	Commercial ACH	Fedwire funds	Fedwire securities
Revenue from services (note 4)	429.1	160.6	125.5	116.0	27.1
Operating expenses (note 5)[1]	381.2	131.6	119.8	106.2	23.5
Income from operations	47.9	29.0	5.7	9.7	3.6
Imputed costs (note 6)	7.5	2.7	2.2	2.2	0.5
Income before income taxes	40.4	26.3	3.5	7.6	3.1
Imputed income taxes (note 6)	9.0	5.9	0.8	1.7	0.7
Net income	31.3	20.4	2.7	5.9	2.4
Memo: Targeted return on equity (note 6)	5.6	2.0	1.8	1.6	0.3
Cost recovery (percent) (note 7)	106.4	113.0	100.7	103.9	108.2

Note: Components may not sum to totals because of rounding. The accompanying notes are an integral part of these pro forma priced services financial statements.

[1] Operating expenses include pension costs, Board expenses, and reimbursements for certain nonpriced services.

Notes to Pro Forma Financial Statements for Priced Services

(1) Short-Term Assets

Receivables are composed of fees due the Reserve Banks for providing priced services and the share of suspense- and difference-account balances related to priced services.

Items in process of collection are gross Federal Reserve cash items in process of collection (CIPC), stated on a basis comparable to that of a commercial bank. They reflect adjustments for intra-Reserve Bank items that would otherwise be double-counted on the combined Federal Reserve balance sheet and adjustments for items associated with nonpriced items (such as those collected for government agencies). Among the costs to be recovered under the Monetary Control Act is the cost of float, or net CIPC during the period (the difference between gross CIPC and deferred-availability items, which is the portion of gross CIPC that involves a financing cost), valued at the federal funds rate. Investments of excess financing derived from credit float are assumed to be invested in federal funds.

(2) Long-Term Assets

Long-term assets consist of long-term assets used solely in priced services and the priced-service portion of long-term assets shared with nonpriced services, including a deferred tax asset related to the priced services pension and postretirement benefits obligation. The tax rate associated with the deferred tax asset was 22.4 percent and 37.2 percent for 2015 and 2014, respectively.

Long-term assets also consist of an estimate of the assets of the Board of Governors used in the development of priced services.

(3) Liabilities and Equity

Under the matched-book capital structure for assets, short-term assets are financed with short-term payables and imputed short-term debt, if needed. Long-term assets are financed with long-term liabilities, imputed long-term debt, and imputed equity, if needed. To meet the Federal Deposit Insurance Corporation requirements for a well-capitalized institution, in 2015 equity is imputed at 6.4 percent of total assets and 10.0 percent of risk-weighted assets, and in 2014 equity is imputed at 5.8 percent of total assets and 10 percent of risk-weighted assets.

In 2014, the Board approved revisions to the Payment System Risk policy to reflect the new international standards for financial market infrastructures developed by the Committee on Payment and Settlement Systems and the Technical Committee of the International Organization of Securities Commissions in the Principles for Financial Market Infrastructures. The policy retains the expectation that the Fedwire Services will meet or exceed the applicable risk-management standards. Effective December 31, 2105, the Reserve Banks' priced services imputed six months of the Fedwire Funds Service's current operating expenses as liquid net financial assets and equity on the pro forma balance sheet. The imputed assets held as liquid net financial assets are cash items in process of collection, which are assumed to be invested in federal funds.

In accordance with Accounting Standards Codification (ASC) Topic 715 (ASC 715), Compensation–Retirement Benefits, the Reserve Banks record the funded status of pension and other benefit plans on their balance sheets. To reflect the funded status of their benefit plans, the Reserve Banks recognize the deferred

items related to these plans, which include prior service costs and actuarial gains or losses, on the balance sheet. This results in an adjustment to the pension and other benefit plan liabilities related to priced services and the recognition of an associated deferred tax asset with an offsetting adjustment, net of tax, to accumulated other comprehensive income (AOCI), which is included in equity. The Reserve Bank priced services recognized a pension liability, which is a component of accrued benefit costs, of $26.2 million in 2015 and $42.0 million in 2014. The change in the funded status of the pension and other benefit plans resulted in a corresponding increase in accumulated other comprehensive loss of $107.8 million in 2015.

(4) Revenue

Revenue represents fees charged to depository institutions for priced services and is realized from each institution through direct charges to an institution's account.

(5) Operating Expenses

Operating expenses consist of the direct, indirect, and other general administrative expenses of the Reserve Banks for priced services and the expenses of the Board related to the development of priced services. Board expenses were $3.3 million in 2015 and $4.1 million in 2014.

In accordance with ASC 715, the Reserve Bank priced services recognized qualified pension-plan operating expenses of $33.7 million in 2015 and $22.7 million in 2014. Operating expenses also include the nonqualified net pension expense of $3.2 million in 2015 and $4.7 million in 2014. The adoption of ASC 715 does not change the systematic approach required by generally accepted accounting principles to recognize the expenses associated with the Reserve Banks' benefit plans in the income statement. As a result, these expenses do not include amounts related to changes in the funded status of the Reserve Banks' benefit plans, which are reflected in AOCI.

The income statement by service reflects revenue, operating expenses, imputed costs, other income and expenses, and cost recovery. The tax rate associated with imputed taxes was 22.4 percent and 37.2 percent for 2015 and 2014, respectively.

(6) Imputed Costs

Imputed costs consist of income taxes, return on equity, interest on debt, sales taxes, and interest on float. Many imputed costs are derived from the PSAF model. The 2015 cost of short-term debt imputed in the PSAF model is based on nonfinancial commercial paper rates; the cost of imputed long-term debt is based on Merrill Lynch Corporate and High Yield Index returns; and the effective tax rate is derived from U.S. publicly traded firm data, which serve as the proxy for the financial data of a representative private-sector firm. The after-tax rate of return on equity is based on the returns of the equity market as a whole.[21]

Interest is imputed on the debt assumed necessary to finance priced-service assets. These imputed costs are allocated among priced services according to the ratio of operating expenses, less shipping expenses, for each service to the total expenses, less the total shipping expenses, for all services.

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[21] See Federal Reserve Bank Services Private-Sector Adjustment Factor, 77 Fed. Reg. 67,007 (November 8, 2012), www.gpo.gov/fdsys/pkg/FR-2012-11-08/pdf/2012-26918.pdf, for details regarding the PSAF methodology change.

Interest on float is derived from the value of float to be recovered for the check and ACH services, Fedwire Funds Service, and Fedwire Securities Services through per-item fees during the period. Float income or cost is based on the actual float incurred for each priced service.

The following shows the daily average recovery of actual float by the Reserve Banks for 2015, in millions of dollars:

Total float	-193.2
Float not related to priced services[1]	0.1
Float subject to recovery through per-item fees	-193.1

[1] Float not related to priced services includes float generated by services to government agencies and by other central bank services.

Float that is created by account adjustments due to transaction errors and the observance of nonstandard holidays by some depository institutions was recovered from the depository institutions through charging institutions directly. Float subject to recovery is valued at the federal funds rate. Certain ACH funding requirements and check products generate credit float; this float has been subtracted from the cost base subject to recovery in 2015 and 2014.

(7) Cost Recovery

Annual cost recovery is the ratio of revenue, including other income, to the sum of operating expenses, imputed costs, imputed income taxes, and after-tax targeted return on equity.

7 Other Federal Reserve Operations

Regulatory Developments

Dodd-Frank Implementation

Throughout 2015, the Federal Reserve continued to implement the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act) (Pub. L. No. 111-203), which gives the Federal Reserve important responsibilities to issue rules and supervise financial companies to enhance financial stability and preserve the safety and soundness of the banking system. The Board also continued to implement other regulatory reforms to increase the resiliency of banking organizations and help to ensure that they are operating in a safe and sound manner.

The following is a summary of the key regulatory initiatives that were completed during 2015.

Risk-Based Capital Surcharge for Global Systemically Important Bank Holding Companies (Subpart G of Regulation Q)

In July 2015, the Board issued a final rule requiring the largest, most systemically important U.S. bank holding companies (BHCs) to further strengthen their capital positions. Under the rule, a firm that is identified as a global systemically important bank holding company, or G-SIB, will have to hold additional capital to increase its resiliency in light of the greater threat it poses to the financial stability of the United States.

The final rule establishes the criteria for identifying a G-SIB and the methods that those firms will use to calculate a risk-based capital surcharge, which is calibrated to each firm's overall systemic risk. The final rule requires G-SIBs to calculate their surcharges under two methods and use the higher of the two surcharges. The first method is based on the framework agreed to by the Basel Committee on Banking Supervision and considers a G-SIB's size, interconnectedness, cross-jurisdictional activity, substitutability, and complexity. The second method uses similar inputs but is calibrated to result in significantly higher surcharges and replaces substitutability with a measure of the firm's reliance on short-term wholesale funding. The surcharges are phased in between January 1, 2016, and January 1, 2019.

Capital Planning and Stress Testing Requirements (Regulations Y and YY)

In November 2015, the Board issued a final rule that makes minor amendments to its capital plan and stress testing rules. For BHCs with more than $10 billion but less than $50 billion in total consolidated assets and savings and loan holding companies with total consolidated assets of more than $10 billion, the final rule modifies certain mandatory capital action assumptions in the stress test rules and delays the application of the company-run stress test requirements to savings and loan holding companies until January 1, 2017.

For BHCs that have total consolidated assets of $50 billion or more and state member banks that are subject to the Board's advanced approaches capital requirements, the final rule delays the use of the supplementary leverage ratio for one year and indefinitely defers the use of the advanced approaches risk-based capital framework in the capital plan and stress test rules. For BHCs that have total consolidated assets of $50 billion or more, the final rule removes the tier 1 common capital ratio requirement and modifies certain mandatory capital action assumptions. The final rule also makes other technical amendments to reflect other recent rulemakings. The final rule became effective on January 1, 2016.

Swaps Margin and Capital Requirements (Regulation KK)

In November 2015, the Board, the Office of the Comptroller of the Currency, the Federal Deposit Insurance Corporation, the Federal Housing Finance Agency, and the Farm Credit Administration issued a joint final rule to establish minimum margin requirements for registered swap dealers, major swap participants, security-based swap dealers and major security-based swap participants for which one of the

agencies is the prudential regulator. In particular, the agencies adopted a risk-based approach that would establish initial and variation margin requirements on all non-cleared swaps and non-cleared security-based swaps to offset the greater risk to such entities and the financial system arising from the use of swaps and securities-based swaps that are not cleared.

In November 2015, the agencies also issued an interim final rule that exempts from the margin requirements certain non-cleared swaps and non-cleared security-based swaps used for hedging purposes by commercial end-users and certain other counterparties.

Key Regulatory Initiatives Proposed in 2015

The following is a summary of additional regulatory initiatives that the Board proposed in 2015.

Liquidity Risk Measurement Standards (Regulation WW)

In May 2015, the Board issued a proposed rule that would amend the liquidity coverage ratio (LCR) rule to include certain U.S. general obligation municipal securities as high-quality liquid assets (HQLA). The proposed rule would apply only to entities supervised by the Board that are subject to the LCR. The proposed rule would permit companies to include as level 2B liquid assets U.S. general obligation municipal securities that meet the same criteria as corporate debt securities that are included as level 2B liquid assets. It also would apply limits to the amount of U.S. general obligation municipal securities included in a company's total HQLA amount to address the unique structure of the U.S. municipal securities market and to ensure appropriate diversification of the assets included in the total HQLA amount.

Long-Term Debt Requirement (Regulations Q and YY)

In October 2015, the Board issued a proposed rule that would strengthen the ability of the largest domestic and foreign banks operating in the United States to be resolved without extraordinary government support or taxpayer assistance. The proposed rule would require the parent holding companies of U.S. global systemically important banking organizations (covered BHCs) to maintain outstanding minimum levels of total loss-absorbing capacity and long-term unsecured debt, and a related buffer.

The proposed rule would also require the top-tier U.S. intermediate holding companies (IHCs) of foreign global systemically important banking organizations (covered IHCs) to maintain outstanding minimum levels of total loss-absorbing capacity and long-term unsecured debt instruments issued to their foreign parent company and related buffer. The proposed rule would subject the covered BHCs and the covered IHCs to "clean holding company" limitations that would prohibit or limit those companies from entering into certain financial arrangements in order to further improve their resolvability and the resiliency of their operating subsidiaries.

Finally, the proposed rule would require banking organizations subject to the Board's capital requirements to apply a regulatory capital deduction treatment to any investments in unsecured debt instruments issued by covered BHCs. The Board also invited comment on whether, and if so how, the Board should regulate the mechanisms used by a covered BHC or a covered IHC to transfer losses up from the operating subsidiaries that incur the losses to the covered BHC or covered IHC. The public comment period for the proposed rule ended on February 19, 2016.

Liquidity Coverage Ratio Rule Disclosures (Regulation WW)

In November 2015, the Board proposed an amendment to the LCR rule to implement public disclosure requirements for certain companies subject to the LCR rule. The proposed rule would apply to BHCs and certain savings and loan holding companies with total consolidated assets of $50 billion or more or total on-balance-sheet foreign exposure of $10 billion or more and to nonbank financial companies designated by the Financial Stability Oversight Council for Board supervision to which the Board has applied the LCR rule. These companies would be required to disclose information about certain components of their LCR calculations on a quarterly basis in a standardized format and to discuss certain features of their LCR results. In addition, this proposal included an amendment to the modified LCR rule to provide one full year for BHCs and certain savings and loan holding companies to come into compliance with the

rule. The public comment period for the proposed rule ended on February 2, 2016.

The Board's Framework for Implementing the Countercyclical Capital Buffer (Appendix A to Regulation Q)

In December 2015, the Board issued a proposed policy statement detailing the framework the Board would follow in setting the U.S. Countercyclical Capital Buffer (CCyB). The CCyB is a macroprudential tool that can be used to increase the resilience of the financial system by raising capital requirements on internationally active banking organizations when there is an elevated risk of above-normal losses in the future. The proposed policy statement provides background on the range of financial system vulnerabilities and other factors the Board could take into account as it evaluates settings for the U.S. CCyB, including but not limited to, leverage in the nonfinancial sector, leverage in the financial sector, maturity and liquidity transformation in the financial sector, and asset valuation pressures. The public comment period for the CCyB policy statement ended on March 21, 2016.

The Board of Governors and the Government Performance and Results Act

Overview

The Government Performance and Results Act (GPRA) of 1993 requires federal agencies, in consultation with Congress and outside stakeholders, to prepare a strategic plan covering a multiyear period. GPRA also requires each agency to submit an annual performance plan and an annual performance report. The GPRA Modernization Act of 2010 further refines those requirements to include quarterly performance reporting. Although the Board is not covered by GPRA, the Board follows the spirit of the act and, like other federal agencies, prepares an annual performance plan and an annual performance report.

Strategic Framework, Performance Plan, and Performance Report

The Board's 2012–15 *Strategic Framework* (framework) articulates the Board's mission within the context of resources required to meet Dodd-Frank Act mandates, close cross-disciplinary knowledge gaps, develop appropriate policy, and continue addressing the recovery of a fragile global economy. The framework sets forth major goals, outlines strategies for achieving those goals, and identifies key measures of performance toward achieving the strategic objectives.

The annual performance plan outlines the planned projects, initiatives, and activities that support the framework's long-term objectives and resources necessary to achieve those objectives. The annual performance report summarizes the Board's accomplishments that contributed toward achieving the strategic goals and objectives identified in the framework.

The framework, performance plan, and performance report are available on the Board's website at www.federalreserve.gov/publications/gpra/files/2012-2015-strategic-framework.pdf, www.federalreserve.gov/publications/gpra/files/2015-gpra-performance-plan.pdf, and www.federalreserve.gov/publications/gpra/files/2014-gpra-performance-report.pdf.

On July 7, 2015, the Board approved the *Strategic Plan 2016–19*, which identifies and frames critical organizational challenges facing the Board. In addition to investing in ongoing operations, the Board will prioritize investments and dedicate sufficient resources to six pillars over the 2016–19 period, which will allow the Board to advance its mission and respond to these continuing and evolving challenges. The Board's *Strategic Plan 2016–19* is available on the Board's website at www.federalreserve.gov/publications/gpra/files/2016-2019-gpra-strategic-plan.pdf.

8 Record of Policy Actions of the Board of Governors

Policy actions of the Board of Governors are presented pursuant to section 10 of the Federal Reserve Act. That section provides that the Board shall keep a record of all questions of policy determined by the Board and shall include in its annual report to Congress a full account of such actions. This chapter provides a summary of policy actions in 2015, as implemented through (1) rules and regulations, (2) policy statements and other actions, and (3) discount rates for depository institutions. Policy actions were approved by all Board members in office, unless indicated otherwise. More information on the actions is available from the relevant *Federal Register* notices or other documents (see links in footnotes) or on request from the Board's Freedom of Information Office.

For information on the Federal Open Market Committee's policy actions relating to open market operations, see section 9, "Minutes of Federal Open Market Committee Meetings."

Rules and Regulations

Regulation A (Extensions of Credit by Federal Reserve Banks)

On November 30, 2015, the Board approved a final rule (Docket No. R-1476) specifying its policies and procedures for emergency lending under section 13(3) of the Federal Reserve Act, as amended by the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act).[1] The Dodd-Frank Act requires the Board, in consultation with the Secretary of the Treasury, to establish emergency lending policies and procedures. The Dodd-Frank Act limits the Board's emergency lending authority to lending through programs and facilities with broad-based eligibility that have been approved by the Secretary of the Treasury, prohibits lending to entities that are insolvent, and imposes certain other limitations. The final rule defines a "broad-based" program or facility as one in which at least five entities would be eligible to participate. The final rule also provides that an emergency lending program or facility must not be designed for the purpose of aiding any number of failing firms, and it broadens the definition of insolvency beyond formal bankruptcy or resolution proceedings. In addition, the final rule requires among other things the interest rate for emergency credit to be set at a premium to the rate that would be the market rate in normal circumstances. The final rule is effective January 1, 2016.

Voting for this action: Chair Yellen, Vice Chairman Fischer, and Governors Tarullo, Powell, and Brainard.

Regulation D (Reserve Requirements of Depository Institutions)

On June 17, 2015, the Board approved a final rule (Docket No. R-1513) to make technical amendments to the calculation of interest payments on excess balances maintained by or on behalf of depository institutions at Federal Reserve Banks.[2] Specifically, the amendments permit interest payments on excess reserves (IOER) to be based on a daily rate rather than on a maintenance period average rate. The amendments are intended to enhance the effectiveness of changes in the IOER rate in moving the federal funds rate into the target range established by the Federal Open Market Committee when changes in those rates do not coincide with the beginning of a maintenance period. The final rule is effective July 23, 2015. (Note: The Board increased the interest rate paid on required and excess reserves on December 16, 2015. See "Policy Statements and Other Actions" later in this section.)

[1] See *Federal Register* notice at www.gpo.gov/fdsys/pkg/FR-2015-12-18/html/2015-30584.htm.

[2] See *Federal Register* notice at www.gpo.gov/fdsys/pkg/FR-2015-06-22/html/2015-15238.htm.

Voting for this action: Chair Yellen, Vice Chairman Fischer, and Governors Tarullo, Powell, and Brainard.

Regulation H (Membership of State Banking Institutions in the Federal Reserve System)

On June 11, 2015, the Board approved a final rule (Docket No. R-1498), published jointly with the Federal Deposit Insurance Corporation, Office of the Comptroller of the Currency, National Credit Union Administration, and Farm Credit Administration, regarding loans in areas having special flood hazards.[3] The final rule implements amendments to the National Flood Insurance Act made by the Biggert-Waters Flood Insurance Reform Act and the Homeowner Flood Insurance Affordability Act. The final rule requires the escrow of flood insurance payments on residential improved real estate securing a loan. It also incorporates an exemption for certain detached structures from the mandatory requirement to purchase flood insurance. In addition, the final rule implements provisions related to the force placement of flood insurance. The final rule is effective October 1, 2015, except for the escrow provisions, which are effective January 1, 2016.

Voting for this action: Chair Yellen, Vice Chairman Fischer, and Governors Tarullo, Powell, and Brainard.

Regulations H (Membership of State Banking Institutions in the Federal Reserve System) and Y (Bank Holding Companies and Change in Bank Control)

On April 29, 2015, the Board approved a final rule (Docket No. R-1486) to implement minimum requirements to be applied by states that elect to register and supervise appraisal management companies (AMCs), in accordance with title XI of the Financial Institutions Reform, Recovery, and Enforcement Act of 1989, as amended by the Dodd-Frank Act.[4] An AMC is an entity that provides appraisal management services to lenders or underwriters or other principals in the secondary mortgage markets that include contracting with licensed and certified appraisers to perform appraisal assignments. An AMC that is a subsidiary of an insured depository institution and is regulated by a federal financial institution regulatory agency (that is, a federally regulated AMC) must meet the same minimum requirements as state-regulated AMCs, except for the requirement to register with the state. Although the final rule applies only to those states that elect to register and supervise AMCs pursuant to title XI, nonfederally regulated AMCs generally may not perform appraisal management services related to federally related transactions in states that have not established regulatory structures for AMCs within a 36-month period from the rule's effective date.

The final rule, published jointly with the Federal Deposit Insurance Corporation, Office of the Comptroller of the Currency, National Credit Union Administration, Consumer Financial Protection Bureau, and Federal Housing Finance Agency, is effective August 10, 2015.

Voting for this action: Chair Yellen, Vice Chairman Fischer, and Governors Tarullo, Powell, and Brainard.

Regulation Q (Capital Adequacy of Bank Holding Companies, Savings and Loan Holding Companies, and State Member Banks)

On January 26, 2015, the Board approved an interim final rule (Docket No. R-1508) to exclude from the Board's regulatory capital requirements savings and loan holding companies that have total consolidated assets of less than $500 million and that meet certain qualitative requirements of the Board's Small Bank Holding Company Policy Statement (Policy Statement).[5] Bank holding companies that have total consolidated assets of less than $500 million and that meet the qualitative requirements of the Policy Statement are already excluded from the Board's regulatory capital requirements. The interim final rule is effective January 30, 2015.

Voting for this action: Chair Yellen, Vice Chairman Fischer, and Governors Tarullo, Powell, and Brainard.

On June 11, 2015, the Board approved a final rule (Docket No. R-1502), published jointly with the Federal Deposit Insurance Corporation and Office of the

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3 See *Federal Register* notice at www.gpo.gov/fdsys/pkg/FR-2015-07-21/html/2015-15956.htm.

4 See *Federal Register* notice at www.gpo.gov/fdsys/pkg/FR-2015-06-09/html/2015-12719.htm.

5 See *Federal Register* notice at www.gpo.gov/fdsys/pkg/FR-2015-02-03/html/2015-02038.htm.

Comptroller of the Currency, to revise aspects of the regulatory capital framework applicable to large, internationally active banking organizations subject to the advanced approaches risk-based capital rule.[6] The advanced approaches rule generally applies to banking organizations with $250 billion or more in total consolidated assets or $10 billion or more in on-balance-sheet foreign exposure. The final rule (1) clarifies the qualification criteria for banking organizations' use of the advanced approaches rule, (2) reduces to zero the capital risk-weight applicable to the exposure of a clearing member banking organization to a central counterparty where the clearing member does not guarantee the performance of the central counterparty to the clearing member client, (3) enhances consistency of the agencies' advanced approaches rule with relevant international standards, and (4) makes other technical updates and corrections. The final rule is effective October 1, 2015.

Voting for this action: Chair Yellen, Vice Chairman Fischer, and Governors Tarullo, Powell, and Brainard.

On July 20, 2015, the Board approved a final rule (Docket No. R-1505) to implement a risk-based capital surcharge for firms identified as global systemically important bank holding companies, or G-SIBs.[7] The final rule establishes the criteria for identifying a G-SIB. It also requires G-SIBs to determine their surcharge under two methods and use the higher of the two surcharges. The first method uses a broad set of categories correlated with systemic importance to determine a firm's surcharge. The second method uses similar categories but incorporates a measure of a firm's reliance on short-term wholesale funding and is calibrated to result in a higher surcharge in most instances. The G-SIB surcharge is phased in beginning on January 1, 2016, and becomes fully effective on January 1, 2019. (Note: On December 31, 2015, the Board approved the 2015 aggregate global indicator amounts for purposes of a calculation required under the final rule.)

Voting for this action: Chair Yellen, Vice Chairman Fischer, and Governors Tarullo, Powell, and Brainard.

On November 24, 2015, the Board approved a final rule (Docket No. R-1506) amending its regulatory capital framework to clarify how the definition of common equity tier 1 capital applies to ownership interests issued by depository institution holding companies that are structured as limited liability corporations or partnerships.[8] The final rule provides examples of how instruments issued by these firms may qualify as regulatory capital. The applicable compliance date with the Board's revised capital framework is extended to July 1, 2016. The final rule also provides temporary exclusions from the regulatory capital framework for savings and loan holding companies that are personal or family trusts and depository institution holding companies that are employee stock ownership plans. The final rule is effective January 1, 2016.

Voting for this action: Chair Yellen, Vice Chairman Fischer, and Governors Tarullo, Powell, and Brainard.

Regulations Y (Bank Holding Companies and Change in Bank Control) and YY (Enhanced Prudential Standards)

On November 24, 2015, the Board approved a final rule (Docket No. R-1517) to amend its capital plan and stress testing rules.[9] For bank holding companies with more than $10 billion but less than $50 billion in total consolidated assets and savings and loan holding companies with total consolidated assets of more than $10 billion, the final rule modifies certain mandatory capital-action assumptions in the stress test rules and delays the application of the company-run stress test requirements to savings and loan holding companies until January 1, 2017. For bank holding companies that have total consolidated assets of $50 billion or more and state member banks that are subject to the Board's advanced approaches capital requirements, the final rule delays the use of the supplementary leverage ratio for one year and indefinitely defers the use of the advanced approaches risk-based capital framework in the capital plan and stress test rules. For bank holding companies that have total consolidated assets of $50 billion or more, the final rule removes the tier 1 common capital ratio requirement and modifies certain mandatory capital-

[6] See *Federal Register* notice at www.gpo.gov/fdsys/pkg/FR-2015-07-15/html/2015-15748.htm.

[7] See *Federal Register* notice at www.gpo.gov/fdsys/pkg/FR-2015-08-14/html/2015-18702.htm.

[8] See *Federal Register* notice at www.gpo.gov/fdsys/pkg/FR-2015-12-09/html/2015-31013.htm.

[9] See *Federal Register* notice at www.gpo.gov/fdsys/pkg/FR-2015-12-02/html/2015-30471.htm.

action assumptions. To reflect other recent rulemakings, the final rule also makes other amendments to the capital plan and stress test rules. The final rule is effective January 1, 2016.

> **Voting for this action:** Chair Yellen, Vice Chairman Fischer, and Governors Tarullo, Powell, and Brainard.

Regulation II (Debit Card Interchange Fees and Routing)

On August 10, 2015, the Board approved a clarification (Docket No. R-1404) to the treatment of transactions-monitoring costs under its Regulation II in response to a court decision.[10] Regulation II implements standards for assessing whether interchange transaction fees for electronic debit transactions are reasonable and proportional to the cost incurred by the issuer, as required by section 920 of the Electronic Fund Transfer Act. Transactions-monitoring costs are costs incurred by the issuer during the authorization process to detect indications of fraud or other anomalies in order to assist in the issuer's decision to authorize or decline the transaction. In March 2014, the U.S. Court of Appeals for the District of Columbia Circuit largely upheld Regulation II against a challenge by merchant groups (*NACS v. Board of Governors of the Federal Reserve System*). The court, however, held that the Board's treatment of transactions-monitoring costs required further explanation. The Board's clarification states that transactions-monitoring costs are included in the interchange fee standard because these costs are incurred in the course of effecting a particular transaction and are an integral part of the authorization of a specific electronic debit transaction. The Board concluded that it should consider the costs of all activities that are integral to authorization, even if those costs are also incurred for the dual purpose of helping to prevent fraud.

> **Voting for this action:** Chair Yellen, Vice Chairman Fischer, and Governors Tarullo and Powell. **Absent and not voting:** Governor Brainard.

Regulation KK (Margin and Capital Requirements for Covered Swap Entities)

On October 30, 2015, the Board approved a final rule (Docket No. R-1415) to establish minimum margin requirements for swaps and security-based swaps that are not cleared through a clearinghouse.[11] The final rule, issued jointly with the Federal Deposit Insurance Corporation, Office of the Comptroller of the Currency, Farm Credit Administration, and Federal Housing Finance Agency, establishes capital and margin requirements for swap dealers, major swap participants, security-based swap dealers, and major security-based swap participants regulated by one of the agencies, in accordance with the Dodd-Frank Act. The margin requirements mandate the exchange of initial and variation margin for non-cleared swaps and non-cleared security-based swaps between covered swap entities and certain counterparties. The amount of margin will vary based on the relative risk of the non-cleared swap. The requirements are intended to reduce risk, increase transparency, and promote market integrity.

The Board, jointly with the other agencies, also approved an interim final rule with request for comment (Docket No. R-1415) to implement the requirements of title III of the Terrorism Risk Insurance Program Reauthorization Act of 2015, which exempts from the agencies' swap margin rules non-cleared swaps in which a counterparty qualifies for an exemption or exception from clearing under the Dodd-Frank Act. In particular, the interim final rule exempts certain financial institutions with $10 billion or less in total assets and commercial end users that enter into swaps for hedging purposes and that meet the exceptions available to those institutions from the requirement to clear standardized swaps through a clearinghouse. The final rule and interim final rule are effective April 1, 2016.

> **Voting for this action:** Chair Yellen, Vice Chairman Fischer, and Governors Tarullo, Powell, and Brainard.

Policy Statements and Other Actions

Community Advisory Council

On January 14, 2015, the Board approved the establishment of an advisory council to provide Board members with information, advice, and recommendations on the economic circumstances and financial

[10] See *Federal Register* notice at www.gpo.gov/fdsys/pkg/FR-2015-08-14/html/2015-19979.htm.

[11] See *Federal Register* notices at www.gpo.gov/fdsys/pkg/FR-2015-11-30/html/2015-28671.htm and www.gpo.gov/fdsys/pkg/FR-2015-11-30/html/2015-28670.htm.

services needs of consumers and communities, with a particular focus on the concerns of low- and moderate-income populations.[12] The 15 members of the newly formed Community Advisory Council (CAC) were selected by the Board through a public nomination process of candidates with expertise in consumer and community development matters. The Board held the first CAC meeting in the fourth quarter of 2015 and will hold meetings semiannually thereafter.

Voting for this action: Chair Yellen, Vice Chairman Fischer, and Governors Tarullo, Powell, and Brainard.

Small Bank Holding Company Policy Statement

On April 8, 2015, the Board approved a final rule (Docket No. R-1509) amending its Small Bank Holding Company Policy Statement to raise from $500 million to $1 billion the asset threshold to qualify for the policy statement and to expand the scope of companies eligible under the statement to include savings and loan holding companies.[13] The policy statement facilitates the transfer of ownership of small community banks and savings associations by allowing their holding companies to operate with higher levels of debt than would normally be permitted. The policy statement contains several conditions and restrictions designed to ensure that the higher levels of debt permitted for the holding companies do not present an undue risk to the safety and soundness of their subsidiary banks. The Board also approved final conforming revisions to Regulation Y (Bank Holding Companies and Change in Bank Control), Regulation LL (Savings and Loan Holding Companies), and Regulation Q (Capital Adequacy of Bank Holding Companies, Savings and Loan Holding Companies, and State Member Banks). The final rule is effective May 15, 2015.

Voting for this action: Chair Yellen, Vice Chairman Fischer, and Governors Tarullo, Powell, and Brainard.

Interagency Policy Statement Establishing Joint Standards for Assessing the Diversity Policies and Practices of Entities Regulated by the Agencies

On June 3, 2015, the Board approved a final interagency policy statement (Docket No. OP-1465), published jointly with the Federal Deposit Insurance Corporation, Office of the Comptroller of the Currency, National Credit Union Administration, Consumer Financial Protection Bureau, and Securities and Exchange Commission, to establish joint standards for assessing the diversity policies and practices of the entities regulated by the agencies.[14] The standards are required under section 342 of the Dodd-Frank Act and provide a framework for regulated entities to create and strengthen their diversity policies and practices, including their organizational commitment to diversity, workforce and employment practices, procurement and business practices, and practices to promote transparency of organizational diversity and inclusion within their U.S. operations. The interagency policy statement is effective June 10, 2015.

Voting for this action: Chair Yellen, Vice Chairman Fischer, and Governors Tarullo, Powell, and Brainard.

Enhancements to Federal Reserve Bank Same-Day ACH Service

On September 22, 2015, the Board approved enhancements to the Federal Reserve Banks' same-day automated clearing house (ACH) service (Docket OP-1515) to require receiving depository financial institutions (RDFIs) to participate in the service and to require originating depository financial institutions to pay a fee to the RDFIs for each same-day ACH forward transaction.[15] The enhancements are intended to align the Federal Reserve Banks' same-day ACH service with amendments to NACHA's (formerly National Automated Clearing House Association) ACH operating rules and will facilitate the use of the ACH network for certain time-critical payments, accelerate final settlement, and improve funds availability to payment recipients. The enhancements will be adopted by incorporation of the NACHA amended operating rules into Operating Circular 4,

[12] See press release at www.federalreserve.gov/newsevents/press/other/20150116a.htm.

[13] See *Federal Register* notice at www.gpo.gov/fdsys/pkg/FR-2015-04-15/html/2015-08513.htm.

[14] See *Federal Register* notice at www.gpo.gov/fdsys/pkg/FR-2015-06-10/html/2015-14126.htm.

[15] See *Federal Register* notice at www.gpo.gov/fdsys/pkg/FR-2015-09-28/html/2015-24551.htm.

governing the Reserve Banks' ACH service. The changes are effective September 23, 2016.

Voting for this action: Chair Yellen, Vice Chairman Fischer, and Governors Tarullo, Powell, and Brainard.

Interest on Reserves

On December 16, 2015, the Board approved raising the interest rate paid on required and excess reserve balances from ¼ percent to ½ percent, effective December 17, 2015.[16] This action was taken to support the Federal Open Market Committee's decision on December 16 to raise the target range for the federal funds rate by 25 basis points, to ¼ percent to ½ percent.

Voting for this action: Chair Yellen, Vice Chairman Fischer, and Governors Tarullo, Powell, and Brainard.

Discount Rates for Depository Institutions in 2015

Under the Federal Reserve Act, the boards of directors of the Federal Reserve Banks must establish rates on discount window loans to depository institutions at least every 14 days, subject to review and determination by the Board of Governors.

Primary, Secondary, and Seasonal Credit

Primary credit, the Federal Reserve's main lending program for depository institutions, is extended at the primary credit rate, which is set above the usual level of short-term market interest rates. It is made available, with minimal administration and for very short terms, as a backup source of liquidity to depository institutions that, in the judgment of the lending Federal Reserve Bank, are in generally sound financial condition. During 2015, the Board approved one change to the primary credit rate, an increase from ¾ percent to 1 percent, effective December 17, 2015. The Board reached this determination on the primary credit rate recommendations of the Reserve Bank boards of directors in conjunction with the FOMC's decision to raise the target range for the federal funds rate by 25 basis points, to ¼ percent to ½ percent. Monetary policy developments are reviewed more fully in other parts of this report (see section 2, "Monetary Policy and Economic Developments").

Secondary credit is available in appropriate circumstances to depository institutions that do not qualify for primary credit. The secondary credit rate is set at a spread above the primary credit rate. Throughout 2015, the spread was set at 50 basis points. At year-end, the secondary credit rate was 1½ percent.

Seasonal credit is available to smaller depository institutions to meet liquidity needs that arise from regular swings in their loans and deposits. The rate on seasonal credit is calculated every two weeks as an average of selected money-market yields, typically resulting in a rate close to the target range for the federal funds rate. At year-end, the seasonal credit rate was 0.40 percent.[17]

Votes on Changes to Discount Rates for Depository Institutions

About every two weeks during 2015, the Board approved proposals by the 12 Reserve Banks to maintain the formulas for computing the secondary and seasonal credit rates. Details on the action by the Board to approve a change to the primary credit rate are provided below.

December 16, 2015. Effective December 17, 2015, the Board approved actions taken by the directors of the Federal Reserve Banks of Boston, New York, Philadelphia, Cleveland, Richmond, Atlanta, Chicago, St. Louis, Kansas City, Dallas, and San Francisco to increase the primary credit rate from ¾ percent to 1 percent. On December 17, 2015, the Board approved an identical action subsequently taken by the directors of the Federal Reserve Bank of Minneapolis, effective immediately.

Voting for this action: Chair Yellen, Vice Chairman Fischer, and Governors Tarullo, Powell, and Brainard.

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[16] See press release at www.federalreserve.gov/newsevents/press/monetary/20151216a1.htm and *Federal Register* notice at www.gpo.gov/fdsys/pkg/FR-2015-12-22/html/2015-32099.htm.

[17] For current and historical discount rates, see www.frbdiscountwindow.org/.

9 Minutes of Federal Open Market Committee Meetings

The policy actions of the Federal Open Market Committee, contained in the minutes of its meetings, are presented in the Annual Report of the Board of Governors pursuant to the requirements of section 10 of the Federal Reserve Act. That section provides that the Board shall keep a complete record of the actions taken by the Board and by the Federal Open Market Committee on all questions of policy relating to open market operations, that it shall record therein the votes taken in connection with the determination of open market policies and the reasons underlying each policy action, and that it shall include in its annual report to Congress a full account of such actions.

The minutes of the meetings contain the votes on the policy decisions made at those meetings, as well as a summary of the information and discussions that led to the decisions. In addition, four times a year, starting with the October 2007 Committee meeting, a Summary of Economic Projections is published as an addendum to the minutes. The descriptions of economic and financial conditions in the minutes and the Summary of Economic Projections are based solely on the information that was available to the Committee at the time of the meetings.

Members of the Committee voting for a particular action may differ among themselves as to the reasons for their votes; in such cases, the range of their views is noted in the minutes. When members dissent from a decision, they are identified in the minutes and a summary of the reasons for their dissent is provided.

Policy directives of the Federal Open Market Committee are issued to the Federal Reserve Bank of New York as the Bank selected by the Committee to execute transactions for the System Open Market Account. In the area of domestic open market operations, the Federal Reserve Bank of New York operates under instructions from the Federal Open Market Committee that take the form of an Authorization for Domestic Open Market Operations and a Domestic Policy Directive. (A new Domestic Policy Directive is adopted at each regularly scheduled meeting.) In the foreign currency area, the Federal Reserve Bank of New York operates under an Authorization for Foreign Currency Operations, a Foreign Currency Directive, and Procedural Instructions with Respect to Foreign Currency Operations. Changes in the instruments during the year are reported in the minutes for the individual meetings.[1]

[1] As of January 1, 2015, the Federal Reserve Bank of New York was operating under the Domestic Policy Directive approved at the December 16–17, 2014, Committee meeting. The other policy instruments (the Authorization for Domestic Open Market Operations, the Authorization for Foreign Currency Operations, the Foreign Currency Directive, and Procedural Instructions with Respect to Foreign Currency Operations) in effect as of January 1, 2015, were approved at the January 28–29, 2014, meeting.

Meeting Held on January 27–28, 2015

A meeting of the Federal Open Market Committee was held in the offices of the Board of Governors of the Federal Reserve System in Washington, D.C., on Tuesday, January 27, 2015, at 10:00 a.m. and continued on Wednesday, January 28, 2015, at 9:00 a.m.

Present

Janet L. Yellen
Chair

William C. Dudley
Vice Chairman

Lael Brainard

Charles L. Evans

Stanley Fischer

Jeffrey M. Lacker

Dennis P. Lockhart

Jerome H. Powell

Daniel K. Tarullo

John C. Williams

James Bullard, Esther L. George, Loretta J. Mester, and Eric Rosengren
Alternate Members of the Federal Open Market Committee

Richard W. Fisher, Narayana Kocherlakota, and Charles I. Plosser
Presidents of the Federal Reserve Banks of Dallas, Minneapolis, and Philadelphia, respectively

Thomas Laubach
Secretary and Economist

Matthew M. Luecke
Deputy Secretary

Michelle A. Smith
Assistant Secretary

Scott G. Alvarez
General Counsel

Thomas C. Baxter
Deputy General Counsel

Steven B. Kamin
Economist

David W. Wilcox
Economist

David Altig, Thomas A. Connors, Michael P. Leahy, Jonathan P. McCarthy, William R. Nelson, Glenn D. Rudebusch, Daniel G. Sullivan, and William Wascher
Associate Economists

Simon Potter
Manager, System Open Market Account

Lorie K. Logan
Deputy Manager, System Open Market Account

Robert deV. Frierson[1]
Secretary of the Board, Office of the Secretary, Board of Governors

Michael S. Gibson
Director, Division of Banking Supervision and Regulation, Board of Governors

Nellie Liang
Director, Office of Financial Stability Policy and Research, Board of Governors

James A. Clouse
Deputy Director, Division of Monetary Affairs, Board of Governors

William B. English
Senior Special Adviser to the Board, Office of Board Members, Board of Governors

Andrew Figura, David Reifschneider, and Stacey Tevlin
Special Advisers to the Board, Office of Board Members, Board of Governors

Trevor A. Reeve
Special Adviser to the Chair, Office of Board Members, Board of Governors

David E. Lebow
Senior Associate Director, Division of Research and Statistics, Board of Governors

Michael T. Kiley
Senior Adviser, Division of Research and Statistics, and
Senior Associate Director, Office of Financial Stability Policy and Research,
Board of Governors

Jeremy B. Rudd
Senior Adviser, Division of Research and Statistics, Board of Governors

Joyce K. Zickler
Senior Adviser, Division of Monetary Affairs, Board of Governors

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[1] Attended the joint session of the Federal Open Market Committee and the Board of Governors.

Fabio M. Natalucci[2] and Gretchen C. Weinbach[3]
Associate Directors, Division of Monetary Affairs, Board of Governors

Joseph W. Gruber
Deputy Associate Director, Division of International Finance, Board of Governors

David López-Salido
Deputy Associate Director, Division of Monetary Affairs, Board of Governors

Jennifer Gallagher
Special Assistant to the Board, Office of Board Members, Board of Governors

Edward Nelson
Assistant Director, Division of Monetary Affairs, Board of Governors

Shane M. Sherlund
Assistant Director, Division of Research and Statistics, Board of Governors

Burcu Duygan-Bump and Robert J. Tetlow[2]
Advisers, Division of Monetary Affairs, Board of Governors

Eric C. Engstrom
Adviser, Division of Research and Statistics, Board of Governors

Penelope A. Beattie[1]
Assistant to the Secretary, Office of the Secretary, Board of Governors

Dana L. Burnett and Christopher J. Gust
Section Chiefs, Division of Monetary Affairs, Board of Governors

Katie Ross[1]
Manager, Office of the Secretary, Board of Governors

David H. Small
Project Manager, Division of Monetary Affairs, Board of Governors

Carlos O. Arteta
Senior Economist, Division of International Finance, Board of Governors

Kimberly Bayard
Senior Economist, Division of Research and Statistics, Board of Governors

Elmar Mertens
Senior Economist, Division of Monetary Affairs, Board of Governors

Bernd Schlusche and Emre Yoldas
Economists, Division of Monetary Affairs, Board of Governors

Peter M. Garavuso
Information Management Analyst, Division of Monetary Affairs, Board of Governors

Blake Prichard
First Vice President, Federal Reserve Bank of Philadelphia

Jeff Fuhrer and Alberto G. Musalem
Executive Vice Presidents, Federal Reserve Banks of Boston and New York, respectively

Troy Davig, Michael Dotsey, Joshua L. Frost,[4] Evan F. Koenig, Samuel Schulhofer-Wohl, and Christopher J. Waller
Senior Vice Presidents, Federal Reserve Banks of Kansas City, Philadelphia, New York, Dallas, Minneapolis, and St. Louis, respectively

Todd E. Clark and Douglas Tillett
Vice Presidents, Federal Reserve Banks of Cleveland and Chicago, respectively

Robert L. Hetzel
Senior Economist, Federal Reserve Bank of Richmond

Annual Organizational Matters[5]

In the agenda for this meeting, it was reported that advices of the election of the following members and alternate members of the Federal Open Market Committee (the "Committee") for a term beginning January 27, 2015, had been received and that these individuals had executed their oaths of office.

The elected members and alternate members were as follows:

William C. Dudley
President of the Federal Reserve Bank of New York, with

Christine Cumming
First Vice President of the Federal Reserve Bank of New York, as alternate.

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2 Attended the portion of the meeting following the joint session of the Federal Open Market Committee and the Board of Governors.

3 Attended through the conclusion of the joint session of the Federal Open Market Committee and the Board of Governors.

4 Attended through the discussion on liftoff tools and possible liftoff options.

5 Versions of the current Committee documents are available at www.federalreserve.gov/monetarypolicy/rules_authorizations.htm.

Jeffrey M. Lacker
President of the Federal Reserve Bank of Richmond, with

Eric Rosengren
President of the Federal Reserve Bank of Boston, as alternate.

Charles L. Evans
President of the Federal Reserve Bank of Chicago, with

Loretta J. Mester
President of the Federal Reserve Bank of Cleveland, as alternate.

Dennis P. Lockhart
President of the Federal Reserve Bank of Atlanta, with

James Bullard
President of the Federal Reserve Bank of St. Louis, as alternate.

John C. Williams
President of the Federal Reserve Bank of San Francisco, with

Esther L. George
President of the Federal Reserve Bank of Kansas City, as alternate.

By unanimous vote, the following officers of the Committee were selected to serve until the selection of their successors at the first regularly scheduled meeting of the Committee in 2016:

Janet L. Yellen
Chairman

William C. Dudley
Vice Chairman

Thomas Laubach
Secretary and Economist

Matthew M. Luecke
Deputy Secretary

David W. Skidmore[6]
Assistant Secretary

Michelle A. Smith
Assistant Secretary

Scott G. Alvarez
General Counsel

Thomas C. Baxter
Deputy General Counsel

[6] Effective February 2, 2015.

Richard M. Ashton
Assistant General Counsel

Steven B. Kamin
Economist

David W. Wilcox
Economist

David Altig

Thomas A. Connors

Eric M. Engen

Michael P. Leahy

Jonathan P. McCarthy

William R. Nelson

Glenn D. Rudebusch

Daniel G. Sullivan

John A. Weinberg

William Wascher
Associate Economists

By unanimous vote, the Federal Reserve Bank of New York was selected to execute transactions for the System Open Market Account ("SOMA").

By unanimous vote, the Committee selected Simon Potter and Lorie K. Logan to serve at the pleasure of the Committee as manager and deputy manager of the SOMA, respectively, on the understanding that their selection was subject to their being satisfactory to the Federal Reserve Bank of New York.

> Secretary's note: Advice subsequently was received that the manager and deputy manager selections indicated above were satisfactory to the Federal Reserve Bank of New York.

By unanimous vote, the Authorization for Domestic Open Market Operations was approved with two sets of amendments. The first set of amendments aimed at simplifying the language by defining common terms, eliminating duplication of language, and standardizing references to the Committee.[7] The second set of amendments clarified or modified existing authority, in particular by introducing the defined term "Selected Bank" as part of prudent planning to simplify transfer of authority from the Federal Reserve Bank of New York to another Federal

[7] To improve consistency, references to "the FOMC," "the Federal Open Market Committee," and "the Committee" were standardized, where appropriate, around the convention of "the Committee." This change was implemented in other affected documents.

Reserve Bank selected by the Committee in the event of a significant contingency, removing the authorization to use agents for agency mortgage-backed securities ("MBS") transactions, defining the types of collateral accepted in securities lending operations described in paragraph 3, and updating the language relating to the Chair's authority to act in exceptional circumstances.[8] The Guidelines for the Conduct of System Open Market Operations in Federal-Agency Issues remained suspended.

Authorization for Domestic Open Market Operations (As Amended Effective January 27, 2015)

1. The Federal Open Market Committee (the "Committee") authorizes and directs the Federal Reserve Bank selected by the Committee to execute open market transactions (the "Selected Bank"), to the extent necessary to carry out the most recent domestic policy directive adopted by the Committee:

   A. To buy or sell in the open market securities that are direct obligations of, or fully guaranteed as to principal and interest by, the United States, and securities that are direct obligations of, or fully guaranteed as to principal and interest by, any agency of the United States, that are eligible for purchase or sale under Section 14(b) of the Federal Reserve Act ("Eligible Securities") for the System Open Market Account ("SOMA"):

      i. As an outright operation with securities dealers and foreign and international accounts maintained at the Selected Bank: on a same-day or deferred delivery basis (including such transactions as are commonly referred to as dollar rolls and coupon swaps) at market prices; or

      ii. As a temporary operation: on a same-day or deferred delivery basis, to purchase such Eligible Securities subject to an agreement to resell ("repo transactions") or to sell such Eligible Securities subject to an agreement to repurchase ("reverse repo transactions") for a term of 65 business days or less, at rates that, unless otherwise authorized by the Committee, are determined by competitive bidding, after applying reasonable limitations on the volume of agreements with individual counterparties;

   B. To allow Eligible Securities in the SOMA to mature without replacement;

   C. To exchange, at market prices, in connection with a Treasury auction, maturing Eligible Securities in the SOMA with the Treasury, in the case of Eligible Securities that are direct obligations of the United States or that are fully guaranteed as to principal and interest by the United States; and

   D. To exchange, at market prices, maturing Eligible Securities in the SOMA with an agency of the United States, in the case of Eligible Securities that are direct obligations of that agency or that are fully guaranteed as to principal and interest by that agency.

2. The Committee authorizes the Selected Bank to undertake transactions of the type described in paragraph 1 from time to time for the purpose of testing operational readiness, subject to the following limitations:

   A. All transactions authorized in this paragraph 2 shall be conducted with prior notice to the Committee;

   B. The aggregate par value of the transactions authorized in this paragraph 2 that are of the type described in paragraph 1.A.i shall not exceed $5 billion per calendar year; and

   C. The outstanding amount of the transactions described in paragraph 1.A.ii shall not exceed $5 billion at any given time.

3. In order to ensure the effective conduct of open market operations, the Committee authorizes the Selected Bank to operate a program to lend Eligible Securities held in the SOMA to dealers on an overnight basis (except that the Selected Bank may lend Eligible Securities for longer than an overnight term to accommodate weekend, holiday, and similar trading conventions).

[8] The change regarding the introduction of the term "Selected Bank" was implemented in other affected documents, including the Authorization for Foreign Currency Operations, Procedural Instructions with Respect to Foreign Currency Operations, and Program for Security of FOMC Information.

A. Such securities lending must be:

   i. At rates determined by competitive bidding;

   ii. At a minimum lending fee consistent with the objectives of the program;

   iii. Subject to reasonable limitations on the total amount of a specific issue of Eligible Securities that may be auctioned; and

   iv. Subject to reasonable limitations on the amount of Eligible Securities that each borrower may borrow.

B. The Selected Bank may:

   i. Reject bids that, as determined in its sole discretion, could facilitate a bidder's ability to control a single issue;

   ii. Accept Treasury securities or cash as collateral for any loan of securities authorized in this paragraph 3; and

   iii. Accept agency securities as collateral only for a loan of agency securities authorized in this paragraph 3.

4. In order to ensure the effective conduct of open market operations, while assisting in the provision of short-term investments or other authorized services for foreign central bank and international accounts maintained at a Federal Reserve Bank (the "Foreign Accounts") and accounts maintained at a Federal Reserve Bank as fiscal agent of the United States pursuant to section 15 of the Federal Reserve Act (together with the Foreign Accounts, the "Customer Accounts"), the Committee authorizes the following when undertaken on terms comparable to those available in the open market:

   A. The Selected Bank, for the SOMA, to undertake reverse repo transactions in Eligible Securities held in the SOMA with the Customer Accounts for a term of 65 business days or less; and

   B. Any Federal Reserve Bank that maintains Customer Accounts, for any such Customer Account, when appropriate and subject to all other necessary authorization and approvals, to:

      i. Undertake repo transactions in Eligible Securities with dealers with a corresponding reverse repo transaction in such Eligible Securities with the Customer Accounts; and

      ii. Undertake intraday reverse repo transactions in Eligible Securities with Foreign Accounts.

   Transactions undertaken with Customer Accounts under the provisions of this paragraph 4 may provide for a service fee when appropriate. Transactions undertaken with Customer Accounts are also subject to the authorization or approval of other entities, including the Board of Governors of the Federal Reserve System and, when involving accounts maintained at a Federal Reserve Bank as fiscal agent of the United States, the United States Department of the Treasury.

5. The Committee authorizes the Chairman of the Committee, in fostering the Committee's objectives during any period between meetings of the Committee, to instruct the Selected Bank to act on behalf of the Committee to:

   A. Adjust somewhat in exceptional circumstances the stance of monetary policy and to take actions that may result in material changes in the composition and size of the assets in the SOMA; or

   B. Undertake transactions with respect to Eligible Securities in order to appropriately address temporary disruptions of an operational or highly unusual nature in U.S. dollar funding markets.

   Any such adjustment described in subparagraph A of this paragraph 5 shall be made in the context of the Committee's discussion and decision about the stance of policy at its most recent meeting and the Committee's long-run objectives to foster maximum employment and price stability, and shall be based on economic, financial, and monetary developments since the most recent meeting of the Committee. The Chairman, whenever feasible, will consult with the Committee before making any instruction under this paragraph 5.

The Committee voted to amend the Authorization for Foreign Currency Operations and the Procedural

Instructions with Respect to Foreign Currency Operations, and to reaffirm the Foreign Currency Directive in the form shown below. The approval of these documents included approval of the System's warehousing agreement with the U.S. Treasury. A change was made to the Authorization for Foreign Currency Operations to increase the duration limit of the foreign currency portfolio to 24 months from 18 months. This change was made to provide greater flexibility in the management of the foreign currency portfolio, in an environment in which interest rates are low in many major economies. Mr. Lacker dissented in the votes on the Authorization for Foreign Currency Operations and the Foreign Currency Directive to indicate his opposition to foreign currency intervention by the Federal Reserve. In his view, such intervention would be ineffective if it did not also signal a shift in domestic monetary policy; and if it did signal such a shift, it could potentially compromise the Federal Reserve's monetary policy independence.

Authorization for Foreign Currency Operations (As Amended Effective January 27, 2015)

1. The Federal Open Market Committee (the "Committee") authorizes and directs the Federal Reserve Bank selected by the Committee to execute open market transactions (the "Selected Bank"), for the System Open Market Account, to the extent necessary to carry out the Committee's foreign currency directive and express authorizations by the Committee pursuant thereto, and in conformity with such procedural instructions as the Committee may issue from time to time:

    A. To purchase and sell the following foreign currencies in the form of cable transfers through spot or forward transactions on the open market at home and abroad, including transactions with the U.S. Treasury, with the U.S. Exchange Stabilization Fund established by section 10 of the Gold Reserve Act of 1934, with foreign monetary authorities, with the Bank for International Settlements, and with other international financial institutions:

    Australian dollars
    Brazilian reais
    Canadian dollars
    Danish kroner
    euro
    Japanese yen
    Korean won
    Mexican pesos
    New Zealand dollars
    Norwegian kroner
    Pounds sterling
    Singapore dollars
    Swedish kronor
    Swiss francs

    B. To hold balances of, and to have outstanding forward contracts to receive or to deliver, the foreign currencies listed in paragraph A above.

    C. To draw foreign currencies and to permit foreign banks to draw dollars under the arrangements listed in paragraph 2 below, in accordance with the Procedural Instructions with Respect to Foreign Currency Operations.

    D. To maintain an overall open position in all foreign currencies not exceeding $25.0 billion. For this purpose, the overall open position in all foreign currencies is defined as the sum (disregarding signs) of net positions in individual currencies, excluding changes in dollar value due to foreign exchange rate movements and interest accruals. The net position in a single foreign currency is defined as holdings of balances in that currency, plus outstanding contracts for future receipt, minus outstanding contracts for future delivery of that currency, i.e., as the sum of these elements with due regard to sign.

2. The Committee directs the Selected Bank to maintain for the System Open Market Account (subject to the requirements of section 214.5 of Regulation N, Relations with Foreign Banks and Bankers):

    A. Reciprocal currency arrangements with the following foreign banks:

Foreign bank	Amount of arrangement (millions of dollars equivalent)
Bank of Canada	2,000
Bank of Mexico	3,000

    B. Standing dollar liquidity swap arrangements with the following foreign banks:

    Bank of Canada
    Bank of England

Bank of Japan
European Central Bank
Swiss National Bank

C. Standing foreign currency liquidity swap arrangements with the following foreign banks:

Bank of Canada
Bank of England
Bank of Japan
European Central Bank
Swiss National Bank

Dollar and foreign currency liquidity swap arrangements have no pre-set size limits. Any new swap arrangements shall be referred for review and approval to the Committee. All swap arrangements are subject to annual review and approval by the Committee.

3. All transactions in foreign currencies undertaken under paragraph 1.A above shall, unless otherwise expressly authorized by the Committee, be at prevailing market rates. For the purpose of providing an investment return on System holdings of foreign currencies or for the purpose of adjusting interest rates paid or received in connection with swap drawings, transactions with foreign central banks may be undertaken at non-market exchange rates.

4. It shall be the normal practice to arrange with foreign central banks for the coordination of foreign currency transactions. In making operating arrangements with foreign central banks on System holdings of foreign currencies, the Selected Bank shall not commit itself to maintain any specific balance, unless authorized by the Committee. Any agreements or understandings concerning the administration of the accounts maintained by the Selected Bank with the foreign banks designated by the Board of Governors under section 214.5 of Regulation N shall be referred for review and approval to the Committee.

5. Foreign currency holdings shall be invested to ensure that adequate liquidity is maintained to meet anticipated needs and so that each currency portfolio shall generally have an average duration of no more than 24 months (calculated as Macaulay duration). Such investments may include buying or selling outright obligations of, or fully guaranteed as to principal and interest by, a foreign government or agency thereof; buying such securities under agreements for repurchase of such securities; selling such securities under agreements for the resale of such securities; and holding various time and other deposit accounts at foreign institutions. In addition, when appropriate in connection with arrangements to provide investment facilities for foreign currency holdings, U.S. government securities may be purchased from foreign central banks under agreements for repurchase of such securities within 30 calendar days.

6. All operations undertaken pursuant to the preceding paragraphs shall be reported promptly to the Foreign Currency Subcommittee (the "Subcommittee") and the Committee. The Subcommittee consists of the Chairman and Vice Chairman of the Committee, the Vice Chairman of the Board of Governors, and such other member of the Board as the Chairman may designate (or in the absence of members of the Board serving on the Subcommittee, other Board members designated by the Chairman as alternates, and in the absence of the Vice Chairman of the Committee, the Vice Chairman's alternate). Meetings of the Subcommittee shall be called at the request of any member, or at the request of the manager, System Open Market Account ("manager"), for the purposes of reviewing recent or contemplated operations and of consulting with the manager on other matters relating to the manager's responsibilities. At the request of any member of the Subcommittee, questions arising from such reviews and consultations shall be referred for determination to the Committee.

7. The Chairman is authorized:

   A. With the approval of the Committee, to enter into any needed agreement or understanding with the Secretary of the Treasury about the division of responsibility for foreign currency operations between the System and the Treasury;

   B. To keep the Secretary of the Treasury fully advised concerning System foreign currency

operations, and to consult with the Secretary on policy matters relating to foreign currency operations;

C. From time to time, to transmit appropriate reports and information to the National Advisory Council on International Monetary and Financial Policies.

8. All Federal Reserve Banks shall participate in the foreign currency operations for System Account in accordance with paragraph 3G(1) of the Board of Governors' Statement of Procedure with Respect to Foreign Relationships of Federal Reserve Banks dated January 1, 1944.

9. The Committee authorizes the Selected Bank to undertake transactions of the type described in paragraphs 1, 2, and 5, and foreign exchange and investment transactions that it may be otherwise authorized to undertake from time to time for the purpose of testing operational readiness. The aggregate amount of such transactions shall not exceed $2.5 billion per calendar year. These transactions shall be conducted with prior notice to the Committee.

Foreign Currency Directive (As Reaffirmed Effective January 27, 2015)

1. System operations in foreign currencies shall generally be directed at countering disorderly market conditions, provided that market exchange rates for the U.S. dollar reflect actions and behavior consistent with IMF Article IV, Section 1.

2. To achieve this end the System shall:

A. Undertake spot and forward purchases and sales of foreign exchange.

B. Maintain reciprocal currency arrangements with foreign central banks in accordance with the Authorization for Foreign Currency Operations.

C. Maintain standing dollar liquidity swap arrangements with foreign banks in accordance with the Authorization for Foreign Currency Operations.

D. Maintain standing foreign currency liquidity swap arrangements with foreign banks in accordance with the Authorization for Foreign Currency Operations.

E. Cooperate in other respects with central banks of other countries and with international monetary institutions.

3. Transactions may also be undertaken:

A. To adjust System balances in light of probable future needs for currencies.

B. To provide means for meeting System and Treasury commitments in particular currencies, and to facilitate operations of the Exchange Stabilization Fund.

C. For such other purposes as may be expressly authorized by the Committee.

4. System foreign currency operations shall be conducted:

A. In close and continuous consultation and cooperation with the United States Treasury;

B. In cooperation, as appropriate, with foreign monetary authorities; and

C. In a manner consistent with the obligations of the United States in the International Monetary Fund regarding exchange arrangements under IMF Article IV.

Procedural Instructions with Respect to Foreign Currency Operations (As Amended Effective January 27, 2015)

In conducting operations pursuant to the authorization and direction of the Federal Open Market Committee (the "Committee") as set forth in the Authorization for Foreign Currency Operations and the Foreign Currency Directive, the Federal Reserve Bank selected by the Committee to execute open market transactions (the "Selected Bank"), through the manager, System Open Market Account ("manager"), shall be guided by the following procedural understandings with respect to consultations and clearances with the Committee, the Foreign Currency Subcommittee (the "Subcommittee"), and the Chairman of the Committee, unless otherwise directed by the Committee. All operations undertaken pursuant to such clearances shall be reported promptly to the Committee.

1. For the reciprocal currency arrangements authorized in paragraphs 2.A of the Authorization for Foreign Currency Operations:

   A. Drawings must be approved by the Subcommittee (or by the Chairman, if the Chairman believes that consultation with the Subcommittee is not feasible in the time available) if the swap drawing proposed by a foreign bank does not exceed the larger of (i) $200 million or (ii) 15 percent of the size of the swap arrangement.

   B. Drawings must be approved by the Committee (or by the Subcommittee, if the Subcommittee believes that consultation with the full Committee is not feasible in the time available, or by the Chairman, if the Chairman believes that consultation with the Subcommittee is not feasible in the time available) if the swap drawing proposed by a foreign bank exceeds the larger of (i) $200 million or (ii) 15 percent of the size of the swap arrangement.

   C. The manager shall also consult with the Subcommittee or the Chairman about proposed swap drawings by the System.

   D. Any changes in the terms of existing swap arrangements shall be referred for review and approval to the Chairman. The Chairman shall keep the Committee informed of any changes in terms, and the terms shall be consistent with principles discussed with and guidance provided by the Committee.

2. For the dollar and foreign currency liquidity swap arrangements authorized in paragraphs 2.B and 2.C of the Authorization for Foreign Currency Operations:

   A. Drawings must be approved by the Chairman in consultation with the Subcommittee. The Chairman or the Subcommittee will consult with the Committee prior to the initial drawing on the dollar or foreign currency liquidity swap lines if possible under the circumstances then prevailing; authority to approve subsequent drawings for either the dollar or foreign currency liquidity swap lines may be delegated to the manager by the Chairman.

   B. Any changes in the terms of existing swap arrangements shall be referred for review and approval to the Chairman. The Chairman shall keep the Committee informed of any changes in terms, and the terms shall be consistent with principles discussed with and guidance provided by the Committee.

3. Any operation must be approved by:

   A. The Subcommittee (or by the Chairman, if the Chairman believes that consultation with the Subcommittee is not feasible in the time available) if it:

      i. Would result in a change in the System's overall open position in foreign currencies exceeding $300 million on any day or $600 million since the most recent regular meeting of the Committee.

      ii. Would result in a change on any day in the System's net position in a single foreign currency exceeding $150 million, or $300 million when the operation is associated with repayment of swap drawings.

      iii. Might generate a substantial volume of trading in a particular currency by the System, even though the change in the System's net position in that currency (as defined in paragraph 1.D of the Authorization for Foreign Currency Operations) might be less than the limits specified in 3.A.ii.

   B. The Committee (or by the Subcommittee, if the Subcommittee believes that consultation with the full Committee is not feasible in the time available, or by the Chairman, if the Chairman believes that consultation with the Subcommittee is not feasible in the time available) if it would result in a change in the System's overall open position in foreign currencies exceeding $1.5 billion since the most recent regular meeting of the Committee.

4. The Committee authorizes the Selected Bank to undertake transactions of the type described in paragraphs 1, 2, and 5 of the Authorization for Foreign Currency Operations and foreign exchange and investment transactions that it may be otherwise authorized to undertake from time

to time for the purpose of testing operational readiness. The aggregate amount of such transactions shall not exceed $2.5 billion per calendar year. These transactions shall be conducted with prior notice to the Committee.

By unanimous vote, the Committee amended its Program for Security of FOMC Information with changes to how Federal Reserve Banks classify and access Committee information.

In its annual reconsideration of the Statement on Longer-Run Goals and Monetary Policy Strategy, participants generally agreed that only a minor update was required at this meeting. Several participants observed that this statement had helped to increase public understanding of the Committee's goals and policy framework. It was noted, however, that the Committee should continue to discuss possible enhancements to the statement over the coming year.

Following the discussion, the Committee voted to reaffirm the statement with an updated reference to participants' estimates of the longer-run normal unemployment rate. Mr. Tarullo abstained because he did not believe the statement reflects sufficient consensus in the principles underlying the Committee's policy actions so as to significantly advance public understanding of its monetary policy strategy.

Statement on Longer-Run Goals and Monetary Policy Strategy (As Amended Effective January 27, 2015)

"The Federal Open Market Committee (FOMC) is firmly committed to fulfilling its statutory mandate from the Congress of promoting maximum employment, stable prices, and moderate long-term interest rates. The Committee seeks to explain its monetary policy decisions to the public as clearly as possible. Such clarity facilitates well-informed decisionmaking by households and businesses, reduces economic and financial uncertainty, increases the effectiveness of monetary policy, and enhances transparency and accountability, which are essential in a democratic society.

Inflation, employment, and long-term interest rates fluctuate over time in response to economic and financial disturbances. Moreover, monetary policy actions tend to influence economic activity and prices with a lag. Therefore, the Committee's policy decisions reflect its longer-run goals, its medium-term outlook, and its assessments of the balance of risks, including risks to the financial system that could impede the attainment of the Committee's goals.

The inflation rate over the longer run is primarily determined by monetary policy, and hence the Committee has the ability to specify a longer-run goal for inflation. The Committee reaffirms its judgment that inflation at the rate of 2 percent, as measured by the annual change in the price index for personal consumption expenditures, is most consistent over the longer run with the Federal Reserve's statutory mandate. Communicating this inflation goal clearly to the public helps keep longer-term inflation expectations firmly anchored, thereby fostering price stability and moderate long-term interest rates and enhancing the Committee's ability to promote maximum employment in the face of significant economic disturbances. The maximum level of employment is largely determined by nonmonetary factors that affect the structure and dynamics of the labor market. These factors may change over time and may not be directly measurable. Consequently, it would not be appropriate to specify a fixed goal for employment; rather, the Committee's policy decisions must be informed by assessments of the maximum level of employment, recognizing that such assessments are necessarily uncertain and subject to revision. The Committee considers a wide range of indicators in making these assessments. Information about Committee participants' estimates of the longer-run normal rates of output growth and unemployment is published four times per year in the FOMC's Summary of Economic Projections. For example, in the most recent projections, FOMC participants' estimates of the longer-run normal rate of unemployment had a central tendency of 5.2 percent to 5.5 percent.

In setting monetary policy, the Committee seeks to mitigate deviations of inflation from its longer-run goal and deviations of employment from the Committee's assessments of its maximum level. These objectives are generally complementary. However, under circumstances in which the Committee judges that the objectives are not complementary, it follows a balanced approach in promoting them, taking into account the magnitude of the deviations and the potentially different time horizons over which

employment and inflation are projected to return to levels judged consistent with its mandate.

The Committee intends to reaffirm these principles and to make adjustments as appropriate at its annual organizational meeting each January."

Developments in Financial Markets and the Federal Reserve's Balance Sheet

In a joint session of the Committee and the Board of Governors of the Federal Reserve System, the manager of the System Open Market Account (SOMA) reported on developments in domestic and foreign financial markets. The deputy manager followed with a review of System open market operations conducted during the period since the Committee met on December 16–17, 2014. The deputy manager also discussed the outcomes of recent tests of term and overnight reverse repurchase agreements (term RRPs and ON RRPs, respectively). These tests suggested that the combination of term RRP and ON RRP operations had been effective in supporting money market rates leading into and over year-end. The presentation also outlined some staff recommendations for further testing of Term Deposit Facility operations.

By unanimous vote, the Committee ratified the Open Market Desk's domestic transactions over the intermeeting period. There were no intervention operations in foreign currencies for the System's account over the intermeeting period.

Liftoff Tools and Possible Liftoff Options

A staff briefing provided some background on possible options for the use of supplementary tools, in addition to interest on excess reserves (IOER), that the Committee could choose to use during the early stages of policy normalization. The purpose of these options was to help ensure sufficient control over the federal funds rate and other short-term interest rates during this period while mitigating potential risks associated with particular policy tools. The presentation discussed the possibility of establishing, on a temporary basis, an aggregate cap for ON RRP operations that was substantially above the cap the Committee had chosen for the purposes of testing such operations. In addition, the presentation discussed the possible use of term RRP operations, either before or after the commencement of policy firming, as a way to reinforce control of short-term interest rates and to manage the size of the ON RRP program. Other possible options presented at the briefing included adjusting the values of the IOER and ON RRP rates associated with a given target range for the federal funds rate and the use of term deposits.

In their discussion of these issues, participants generally agreed that it was very important for the commencement of policy firming to proceed successfully. Consequently, most were prepared to take the steps necessary to ensure that the federal funds rate traded within the target range established by the Federal Open Market Committee (FOMC). However, a few participants noted that day-to-day volatility in the federal funds rate, potentially including temporary movements outside the target range, would not be surprising, and that historical experience suggested that such temporary movements had few, if any, implications for overall financial conditions or the aggregate economy.

With regard to the appropriate setting of the cap for ON RRP operations at the beginning of normalization, the staff reported that testing to date suggested that ON RRP operations have generally been successful in establishing a floor on the level of the federal funds effective rate and other short-term interest rates, as long as market participants judge that the aggregate cap is quite unlikely to bind. Against this backdrop, most meeting participants indicated that a sizable ON RRP cap would be appropriate to support policy implementation at the time of liftoff, and a couple of participants suggested that the aggregate cap might be suspended for a time. A couple of participants expressed continued concerns about the potential risks to financial stability associated with a large ON RRP facility and the possible effect of such a facility on patterns of financial intermediation. Moreover, some participants were concerned that a decision to allow a temporary increase in the maximum size of the ON RRP facility could be viewed by market participants as a signal that a large ON RRP facility would be maintained for a longer period than those participants deemed appropriate. While acknowledging these concerns, many participants believed that a temporarily elevated cap on the ON RRP operations at a time when the Committee saw conditions as appropriate to begin normalization would likely pose limited risks; another participant judged that an ON RRP program was, in any case, unlikely to materially increase the risks to financial stability. Some participants noted that a relatively high cap could be established and then reduced fairly soon after the initial policy firming if it was deter-

mined that it was not needed, and that such a reduction could help underscore the Committee's intent to use such a facility only to the extent necessary. A number of participants emphasized that the Committee should develop plans to ensure that such a facility is temporary and that it can be phased out once it is no longer needed to help control the federal funds rate.

With regard to the possible use of term RRP operations as an additional supplementary tool, participants noted that recent testing showed that term RRP operations ahead of the year-end were associated with a significant decline in the level of take-up at ON RRP operations. The staff presentation suggested that risks to financial stability associated with term RRPs could be somewhat lower than those associated with ON RRP operations because term RRP operations would be conducted only on selected dates, the Federal Reserve would set the quantity auctioned, and the rate on term RRPs would be determined by the auction process. However, a few participants expressed the view that term RRPs were unlikely to lower risks to financial stability significantly. In addition, some participants noted that the use of term RRP operations could complicate communications. A few others observed that the Committee should not design its operations to reduce year-end or quarter-end volatility induced by financial firms' reporting practices. Nonetheless, many participants agreed that the use of term RRP operations during the period of policy tightening could be useful in some situations.

With regard to the potential use of other tools, several participants noted that the IOER and ON RRP rates should be set at the top and bottom, respectively, of the target range for the federal funds rate. To deviate from such a structure would complicate communications about the policy framework and therefore should be avoided if possible. However, some participants judged that adjustments to the relationship of the IOER rate and the ON RRP rate to the target range for the federal funds rate might, in some circumstances, be helpful for improving control of the federal funds rate. A few participants noted that use of term deposits during the tightening phase could also be appropriate in some circumstances.

The staff presentation also discussed a technical issue related to the calculation of the payment of interest on reserves. Under current arrangements, an increase in the IOER rate that is implemented in the middle of a reserve maintenance period is not fully reflected in interest payments to depository institutions until the beginning of a new maintenance period. Participants generally suggested that it would be useful for the staff to investigate changes in the method used to determine the interest payments on reserves that could tighten the link between the IOER rate in place each day and the level of reserve balances held by depository institutions each day.

At the conclusion of their discussion, participants generally agreed that it would be useful to discuss further at coming meetings specific calibrations of policy tools that could be used during the early stages of policy normalization. In addition, many noted that it would be useful to communicate additional information to the public on these issues to provide greater clarity about the Committee's approach to policy implementation at that time.

A staff briefing outlined two proposals that the Committee could consider for further testing of term RRP operations. In the first of these proposals, the Desk would conduct a series of preannounced term RRP operations that would span the end of the first quarter. In the second proposal, the Desk would conduct small term RRP operations in February and early March, in addition to the quarter-end option presented in the first proposal. In their discussion of term RRP testing, participants noted that the testing could provide further information about the substitutability between the ON and term RRP operations, including outside year-end and quarter-end periods. A number of participants emphasized that, even if the Committee conducted additional tests, it had not yet decided whether to use term RRP operations as part of policy normalization.

Following the discussion of the testing of term RRP operations, the Committee approved the following resolution on term RRP testing over the end of the first quarter of 2015:

> "During the period of March 19, 2015, to March 30, 2015, the Federal Open Market Committee (FOMC) authorizes the Federal Reserve Bank of New York to conduct a series of term reverse repurchase operations involving U.S. government securities. Such operations shall: (i) mature no later than April 9, 2015; (ii) be subject to an overall size limit of $200 billion outstanding at any one time; (iii) be subject to a maximum bid rate of five basis points above the ON RRP offering rate in effect on the day of the operation; (iv) be awarded to all submitters:

(A) at the highest submitted rate if the sum of the bids received is less than or equal to the preannounced size of the operation, or (B) at the stop-out rate, determined by evaluating bids in ascending order by submitted rate up to the point at which the total quantity of bids equals the preannounced size of the operation, with all bids below this rate awarded in full at the stop-out rate and all bids at the stop-out rate awarded on a pro rata basis, if the sum of the counterparty offers received is greater than the preannounced size of the operation. Such operations may be for forward settlement. The System Open Market Account manager will inform the FOMC in advance of the terms of the planned operations. The Chair must approve the terms of, timing of the announcement of, and timing of the operations. These operations shall be conducted in addition to the authorized overnight reverse repurchase agreements, which remain subject to a separate overall size limit of $300 billion per day."

The Committee also approved the following resolution on testing term RRP operations during February and March:

"During the period of February 12, 2015, to March 10, 2015, the Federal Open Market Committee (FOMC) authorizes the Federal Reserve Bank of New York to conduct a series of term reverse repurchase operations involving U.S. government securities. Such operations shall: (i) mature no later than March 12, 2015; (ii) be subject to an overall size limit of $50 billion outstanding at any one time; (iii) be subject to a maximum bid rate of five basis points above the ON RRP offering rate in effect on the day of the operation; (iv) be awarded to all submitters: (A) at the highest submitted rate if the sum of the bids received is less than or equal to the preannounced size of the operation, or (B) at the stop-out rate, determined by evaluating bids in ascending order by submitted rate up to the point at which the total quantity of bids equals the preannounced size of the operation, with all bids below this rate awarded in full at the stop-out rate and all bids at the stop-out rate awarded on a pro rata basis, if the sum of the counterparty offers received is greater than the preannounced size of the operation. Such operations may be for forward settlement. The System Open Market Account manager will inform the FOMC in advance of the terms of the planned operations. The Chair must approve the terms of, timing of the announcement of, and timing of the operations. These operations shall be conducted in addition to the authorized overnight reverse repurchase agreements, which remain subject to a separate overall size limit of $300 billion per day."

Mr. Lacker dissented in the votes on both resolutions because he felt that the testing to date had already provided sufficient information about this tool, and that authorizing further testing could encourage the incorrect impression that the Committee had already decided that it would be engaging in term RRP operations during the period of policy normalization.

The Board meeting concluded at the end of the discussion of liftoff tools and possible liftoff options.

Staff Review of the Economic Situation

The information reviewed for the January 27–28 meeting indicated that economic activity expanded at a solid pace over the second half of 2014, and that labor market conditions had again improved in recent months. Consumer price inflation moved further below the FOMC's longer-run objective of 2 percent, held down by continuing large decreases in energy prices. While longer-term market-based measures of inflation compensation declined substantially in recent months, survey measures of longer-run inflation expectations remained stable.

Total nonfarm payroll employment expanded in December and the gains for October and November were revised up, putting the increase for the fourth quarter above that for the third quarter. The unemployment rate declined to 5.6 percent in December, the labor force participation rate decreased, and the employment-to-population rate was unchanged. The share of workers employed part time for economic reasons declined. The rate of private-sector job openings moved up in November, while the rates of hiring and of quits edged down but remained well above their year-earlier readings.

Industrial production rose at a robust pace in the fourth quarter, with a strong increase in manufacturing output and a modest gain in mining output. Automakers' assembly schedules for the first quarter and broader indicators of manufacturing production, such as the readings on new orders from national and regional manufacturing surveys, generally pointed to moderate gains in factory output early this year. In

contrast, some indicators of mining activity, such as counts of drilling rigs in operation, weakened, presumably reflecting the recent sharp declines in energy prices.

Real personal consumption expenditures (PCE) appeared to have risen at a robust pace over the second half of 2014. Data on spending in the third quarter were revised up, and the components of nominal retail sales used to construct estimates of PCE rose briskly in the fourth quarter. Light motor vehicle sales in the fourth quarter maintained their robust third-quarter pace. Important factors influencing household spending remained supportive of further solid gains in real PCE early this year. Real disposable personal income increased in November; since then, continued declines in energy prices likely raised the purchasing power of households' incomes. Households' net worth likely increased as home values and equity prices advanced, and consumer sentiment, as measured by the Thomson Reuters/ University of Michigan Surveys of Consumers, moved up in early January to its highest level in more than a decade.

The pace of housing market activity improved somewhat but remained slow. Starts of new single-family homes increased in December to their highest level since 2008, and permits for new construction also moved higher. Starts of multifamily units were unchanged in December and within the range they have been in for the past year. Sales of new homes increased, on net, in November and December, while sales of existing homes declined, on average, over those two months.

Real private expenditures for business equipment and intellectual property appeared to decelerate in the fourth quarter. Nominal orders and shipments of nondefense capital goods, excluding aircraft, declined in November and December. Moreover, the level of new orders for these capital goods was only a little above that for shipments, which pointed to modest near-term gains in business equipment spending despite relatively positive readings on business conditions from national and regional surveys. Firms' nominal spending for nonresidential structures edged down in November but remained higher than in the third quarter.

Real federal government purchases appeared likely to have decreased sharply in the fourth quarter, reversing much of the surprisingly strong increase in the third quarter. Real state and local government purchases were rising modestly in the fourth quarter, as nominal construction expenditures for October and November were little changed, on net, and the payrolls of these governments increased somewhat.

The U.S. international trade deficit narrowed substantially in November, with imports declining more than exports. The decrease in the value of imports stemmed in large part from a reduction in the value of petroleum imports, reflecting both lower prices and volumes. However, many other categories of goods imports were also weaker. Export declines were concentrated in capital goods, particularly aircraft. Despite the narrowing of the nominal trade deficit in November, real net exports appeared to be on track to decline in the fourth quarter after adding considerably to real gross domestic product (GDP) growth in the third quarter.

Total U.S. consumer prices, as measured by the PCE price index, increased 1¼ percent over the 12 months ending in November, while core prices, as measured by PCE prices excluding food and energy, rose about 1½ percent; consumer energy prices declined, and consumer food prices increased faster than overall prices. Over the 12 months ending in December, total inflation as measured by the consumer price index (CPI) was ¾ percent, while core CPI inflation was 1½ percent. Over the 3 months ending in December, the total CPI decreased at an annual rate of 2½ percent, reflecting recent declines in consumer energy prices, and the core CPI increased at a 1 percent pace. Measures of expected long-run inflation from a variety of surveys, including the Michigan survey and the Desk's Survey of Primary Dealers, remained stable. In contrast, market-based measures of inflation compensation 5 to 10 years ahead declined further. Over the 12 months ending in December, nominal average hourly earnings for all employees increased only slightly faster than core consumer price inflation.

Foreign real GDP growth appeared to increase slightly in the fourth quarter. In the euro area, retail sales, car registrations, and industrial production through November were above their third-quarter averages, and in Japan, strengthening consumption and exports suggested a recovery of output after two quarters of contraction. However, growth slowed in China, partly reflecting further moderation in residential investment, and declining construction activity also contributed to slowing GDP growth in Korea and the United Kingdom. Inflation in the advanced foreign economies declined sharply at the end of last year, amid rapidly falling energy prices. By contrast,

inflation in the emerging market economies fell only modestly, as several of these economies have government-administered energy prices and some have been experiencing upward price pressures from currency depreciations.

Staff Review of the Financial Situation

Over the intermeeting period, amid trading that was volatile at times, longer-term sovereign yields in the United States and other advanced economies declined. These moves were attributed in part to a deterioration in market sentiment associated with downward pressure on inflation, increased concern about the global economic outlook, and announced and anticipated foreign central bank policies. Moreover, continued sharp declines in oil prices and U.S. economic data releases that were viewed by investors as a bit weaker than anticipated, on balance, reportedly weighed on sentiment.

Federal Reserve communications over the intermeeting period were apparently seen as about in line with expectations on balance. However, reflecting in part the deterioration in market sentiment, the expected path for the federal funds rate implied by market quotes shifted down. Results from the Desk's January Survey of Primary Dealers indicated that dealers continued to put the highest probability on scenarios in which the FOMC chooses to commence policy firming around the middle of the year, although the average probability assigned to a commencement after June increased somewhat.

Yields on nominal Treasury securities continued to move lower over the intermeeting period, with market expectations of the policy rate path being revised downward, and with term premiums declining, in part reflecting actual and expected policy easing abroad. On balance, the Treasury yield curve flattened over the intermeeting period, while interest rate volatility increased somewhat. Although the measure of inflation compensation over the next 5 years based on Treasury Inflation-Protected Securities (TIPS) increased, inflation compensation 5 to 10 years ahead declined further to its lowest level in a decade. Yields on 5- and 10-year TIPS moved lower over the period.

Over the intermeeting period, U.S. equity markets were volatile. Option-implied volatility for the S&P 500 index declined, on balance, but remained in the upper half of the range seen over the past year. Broad U.S. equity price indexes moved higher, while stock prices for large domestic banking organizations moved lower on net. Corporate bond spreads were also volatile over the intermeeting period but were little changed, on net, for investment-grade issuers and ended the period lower for speculative-grade issuers, particularly energy companies.

Credit flows to nonfinancial firms generally remained strong through the last quarter of 2014, though they slowed somewhat for riskier firms. Gross corporate bond issuance continued to be solid, although speculative-grade bond issuance declined late in the year and remained subdued into January. Commercial and industrial loans on banks' books continued to expand at a robust rate in the fourth quarter of 2014, consistent with the stronger loan demand from large and middle-market firms reported in the January Senior Loan Officer Opinion Survey on Bank Lending Practices (SLOOS). Issuance of syndicated leveraged loans in the fourth quarter was at its slowest pace in two years, as spreads on newly issued loans increased and refinancing activity declined significantly. Issuance of collateralized loan obligations declined but remained elevated; 2014 was the strongest year on record for the issuance of such securities.

Financing conditions in the commercial real estate (CRE) sector stayed accommodative. In the January SLOOS, banks reported that standards continued to ease, on net, for CRE lending and noted stronger demand for all CRE loan types. Issuance of commercial mortgage-backed securities continued at a solid pace in November and December.

Residential mortgage credit conditions, while remaining tight, showed some further signs of gradual easing. According to the January SLOOS, lending standards eased for a number of categories of residential mortgage loans in the fourth quarter. The price of mortgage credit for qualified borrowers declined again over the intermeeting period, with interest rates on 30-year fixed-rate mortgages reaching levels close to their all-time lows. Refinance applications rose near the end of the intermeeting period.

Conditions in consumer credit markets stayed largely accommodative over the intermeeting period. Auto and student loan balances continued to post significant gains through November, while the expansion of credit card loans on banks' books remained moderate during the fourth quarter as a whole. Respondents to the January SLOOS indicated that demand for auto and credit card loans had strengthened further in the fourth quarter. Consumer credit quality has remained strong on balance. The credit perfor-

mance of auto loans, however, reportedly deteriorated a bit further for some lenders, and several banks indicated in the January SLOOS that they expect the performance of subprime auto loans to worsen this year.

The U.S. dollar strengthened against the currencies of most other advanced economies amid investor concerns about growth in those economies as well as increased monetary accommodation in some of them; the dollar was largely unchanged, on average, against the currencies of emerging market economies. Sovereign yields abroad moved lower, with euro-area yields reflecting the expected and actual easing of the stance of monetary policy by the European Central Bank (ECB) and U.K. yields responding to a shift in expectations toward a later start of Bank of England policy firming. Global equity markets were broadly higher, rebounding from declines in mid-December.

Several central banks announced monetary policy actions during the period. The ECB announced that it would expand its asset purchase program to include the purchase of sovereign bonds; the euro depreciated significantly against the dollar both in anticipation of and following this announcement. The Swiss National Bank (SNB) ended its policy of defending the exchange rate floor of 1.20 Swiss francs per euro, resulting in a significant appreciation of the franc. At the same time, the SNB reduced policy rates, moving the rate it pays on deposits and its target range for Swiss franc LIBOR, or London interbank offered rate, further into negative territory. The Bank of Canada, National Bank of Denmark, Reserve Bank of India, and Central Bank of Turkey also cut policy rates in January to support their economies and, in some cases, to foster higher inflation, while the Central Bank of Brazil raised rates in response to concerns about elevated inflation.

The staff provided its latest report on potential risks to financial stability. Relatively high levels of capital and liquidity in the banking sector, moderate levels of maturity transformation in the financial sector, and a relatively subdued pace of borrowing by the nonfinancial sector continued to be seen as important factors limiting the vulnerability of the financial system to adverse shocks. However, the staff report noted valuation pressures in some asset markets. Such pressures were most notable in corporate debt markets, despite some easing in recent months. In addition, valuation pressures appear to be building in the CRE sector, as indicated by rising prices and the easing in lending standards on CRE loans. Finally, the increased role of bond and loan mutual funds, in conjunction with other factors, may have increased the risk that liquidity pressures could emerge in related markets if investor appetite for such assets wanes. The effects on the largest banking firms of the sharp decline in oil prices and developments in foreign exchange markets appeared limited, although other institutions with more concentrated exposures could face strains if oil prices remain at current levels for a prolonged period.

Staff Economic Outlook

The staff estimated that real GDP growth in the second half of 2014 was faster than in the projection prepared for the December meeting, primarily reflecting stronger-than-expected consumer spending. Even so, real GDP was still estimated to have risen more slowly in the fourth quarter than in the third quarter, as changes in both net exports and federal government purchases appeared likely to have subtracted from real GDP growth in the fourth quarter following large positive contributions in the previous quarter.

The staff's outlook for economic activity over the first half of 2015 was revised up since December, in part reflecting an anticipated boost to consumer spending from declines in energy prices. However, the forecast for real GDP growth over the medium term was little revised, as the greater momentum implied by recent spending gains and the support to household spending from lower energy prices was about offset by the restraint implied by the recent appreciation of the dollar. The staff continued to forecast that real GDP would expand at a modestly faster pace in 2015 and 2016 than it did in 2014 and that it would rise more quickly than potential output, supported by increases in consumer and business confidence and a pickup in foreign economic growth, as well as by a U.S. monetary policy stance that was assumed to remain highly accommodative for some time. In 2017, real GDP growth was projected to begin slowing toward, but to remain slightly above, the rate of growth of potential output. The expansion in economic activity over the medium term was anticipated to lead to a slow reduction in resource slack, and the unemployment rate was expected to decline gradually and to move slightly below the staff's estimate of its longer-run natural rate for a time.

The staff's forecast for inflation in the near term was revised down, as further sharp declines in crude oil

prices since the December FOMC meeting pointed toward a somewhat larger transitory decrease in the total PCE price index early this year than was previously projected. In addition, the incoming data on consumer prices apart from those for energy showed a somewhat smaller rise than anticipated. The staff's forecast for inflation in 2016 and 2017 was essentially unchanged, with inflation projected to remain below the Committee's 2 percent objective. Nevertheless, inflation was projected to reach 2 percent over time, with inflation expectations in the longer run assumed to be consistent with the Committee's objective and slack in labor and product markets anticipated to fade.

The staff viewed the uncertainty around its projections for real GDP growth, the unemployment rate, and inflation as similar to the average over the past 20 years. The risks to the forecast for real GDP growth were viewed as tilted a little to the downside, reflecting the staff's assessment that neither monetary policy nor fiscal policy was well positioned to help the economy withstand adverse shocks. At the same time, the staff viewed the risks around its outlook for the unemployment rate as roughly balanced. The downside risks to the forecast for inflation were seen as having increased somewhat, partly reflecting the recent soft monthly readings on core inflation.

Participants' Views on Current Conditions and the Economic Outlook

In their discussion of the economic situation and the outlook, meeting participants regarded the information received over the intermeeting period as indicating that economic activity had been expanding at a solid pace. Although growth likely slowed from the rapid rate recorded for the third quarter of 2014, a variety of indicators suggested that real GDP continued to grow faster than potential GDP late in the year and during January. Labor market conditions improved further, with strong job gains and a lower unemployment rate; participants judged that the underutilization of labor resources was continuing to diminish. Participants expected that, over the medium term, real economic activity would increase at a moderate pace sufficient to lead to further improvements in labor market conditions toward levels consistent with the Committee's objective of maximum employment. Inflation had declined further below the Committee's longer-run objective, largely reflecting declines in energy prices, and was anticipated to decline further in the near term. Market-based measures of inflation compensation 5 to 10 years ahead had registered a further decline, while survey-based measures of longer-term inflation expectations remained stable. Participants generally anticipated that inflation would rise gradually toward the Committee's 2 percent objective as the labor market improved further and the transitory effects of lower energy prices and other factors dissipated. The risks to the outlook for economic activity and the labor market were seen as nearly balanced. Participants generally regarded the net effect of the recent decline in energy prices as likely to be positive for economic activity and employment. Many participants continued to judge that a deterioration in the foreign economic situation could pose downside risks to the outlook for U.S. economic growth. Several saw those risks as having diminished over the intermeeting period, with lower oil prices and actions of foreign central banks both being supportive of growth abroad, but others pointed to heightened geopolitical and other risks.

With respect to the U.S. economy, participants noted that household spending was rising moderately. Recent declines in oil prices, which had boosted household purchasing power, were among the factors likely to underpin consumer spending in coming months; other factors cited as supporting household spending included low interest rates, easing credit standards, and continued gains in employment and income. However, it was noted that the recovery in the housing sector remained slow and that tepid nominal wage growth, if continued, could become a significant restraining factor for household spending.

Industry contacts pointed to generally solid business conditions, with businesses in many parts of the country continuing to express optimism about prospects for further improvement in 2015. Although manufacturing activity appeared to have slowed somewhat over the intermeeting period in some regions, business contacts suggested that this slowing was likely to prove temporary, and information from some parts of the country suggested that capital investment was poised to pick up. Several participants noted that there were signs of layoffs in the oil and gas industries, and that persistently low energy prices might prompt a larger retrenchment of employment in these industries. In addition, it was observed that if capital investment in energy-producing industries slowed significantly, it could damp the overall expansion of economic activity for a period, especially if the slowing took place after most of the positive effects of lower energy prices on growth in household spending had occurred. A few

participants observed that government spending was unlikely to be a major contributor to the expansion of demand in the period ahead, with real federal purchases projected to be fairly flat over the medium term.

In their discussion of the foreign economic outlook, participants noted that a number of developments over the intermeeting period had likely reduced the risks to U.S. growth. Accommodative policy actions announced by a number of foreign central banks had likely strengthened the outlook abroad. The decline in energy prices was also seen as potentially exerting a stronger-than-anticipated positive effect on growth in the domestic economy and abroad. However, the increase in the foreign exchange value of the dollar was expected to be a persistent source of restraint on U.S. net exports, and a few participants pointed to the risk that the dollar could appreciate further. In addition, the slowdown of growth in China was noted as a factor restraining economic expansion in a number of countries, and several continuing risks to the international economic outlook were cited, including global disinflationary pressure, tensions in the Middle East and Ukraine, and financial uncertainty in Greece. Overall, the risks to the outlook for U.S. economic activity and the labor market were seen as nearly balanced.

Participants noted that inflation had moved further below the Committee's longer-run objective, largely reflecting declines in energy prices and other transitory factors. A number of participants observed that, with anchored inflation expectations, the fall in energy prices should not leave an enduring imprint on aggregate inflation. It was pointed out that the recent intensification of downward pressure on inflation reflected price movements that were concentrated in a narrow range of items in households' consumption basket, a pattern borne out by trimmed mean measures of inflation. Several participants remarked that inflation measures that excluded energy items had also moved down in recent months, but these declines partly reflected transitory factors, including downward pressure on import prices and the pass-through of lower energy costs to the prices of non-energy items. Nonetheless, several participants saw the continuing weakness of core inflation measures as a concern. In addition, a few participants suggested that the weakness of nominal wage growth indicated that core and headline inflation could take longer to return to 2 percent than the Committee anticipated. In contrast, a couple of participants suggested that nominal wage growth provides little information about the future behavior of price inflation. Participants also discussed the possibility that, because of the infrequent occurrence of reductions in nominal wages, wages may not have fully adjusted downward in the period of high unemployment, and therefore pent-up wage deflation might have weighed on wage gains for a time during the expansion. If this was the case, nominal wage growth could be expected to pick up in coming periods and to resume a more normal relationship with labor market slack. Most participants expected that continuing reductions in resource slack would be helpful in returning inflation over the medium term to the Committee's 2 percent longer-run objective, but a few participants voiced concern that nominal wage growth might rise rapidly and inflation might exceed 2 percent for a time.

Participants discussed the sizable decline in market-based measures of inflation compensation that had been observed over the past year and continued over the intermeeting period. A number of them judged that the decline mostly reflected a reduction in the risk premiums embedded in nominal interest rates rather than a decline in inflation expectations; this interpretation was supported by results of some analytical models used to decompose movements in market-based measures of inflation compensation and also by the continuing stability of survey-based measures of inflation expectations. However, other participants put some weight on the possibility that the decline in inflation compensation reflected a reduction in expected inflation. These participants further argued that the stability of survey-based measures of inflation expectations should not be taken as providing much reassurance; in particular, it was noted that in Japan in the late 1990s and early 2000s, survey-based measures of longer-term inflation expectations had not recorded major declines even as a disinflationary process had become entrenched. In addition, a few participants argued that even if the shift down in inflation compensation reflected lower inflation risk premiums rather than reductions in expected inflation, policymakers might still want to take that decline into account because it could reflect increased concern on the part of investors about adverse outcomes in which low inflation was accompanied by weak economic activity. Participants generally agreed that the behavior of market-based measures of inflation compensation needed to be monitored closely.

Participants also discussed other aspects of the substantial decline in nominal longer-term interest rates

and its implications. The fall had occurred despite the strengthening U.S. economic outlook and market expectations that policy normalization could begin later this year. Some participants suggested that shifts of funds from abroad into U.S. Treasury securities may have put downward pressure on term premiums; the shifts, in turn, may have reflected in part a reaction to declines in foreign sovereign yields in response to actual and anticipated monetary policy actions abroad. A couple of participants noted that the reduction in longer-term real interest rates tended to make U.S. financial conditions more accommodative, potentially calling for a somewhat higher path for the federal funds rate going forward. Others observed that insofar as the shifts reflected concerns about growth prospects abroad or were accompanied by a stronger dollar, the implications for U.S. monetary policy were less clear. It was further noted that investment flows from abroad could also be contributing to the decline in TIPS-based measures of inflation compensation, as such flows tend to be concentrated in nominal Treasury securities rather than inflation-protected securities.

Participants saw broad-based improvement in labor market conditions over the intermeeting period, including strong gains in payroll employment and a further reduction in the unemployment rate. Some participants believed that considerable labor market slack remained, especially when indicators other than the unemployment rate were taken into account, including the unusually large fraction of the labor force working part time for economic reasons. A few observed that the combination of recent labor market improvements and continued softness in inflation had led them to lower their estimates of the longer-run normal rate of unemployment. However, a few others saw only a limited degree of remaining labor underutilization or anticipated that underutilization would be eliminated relatively soon.

Participants' Discussion of Policy Planning

Participants discussed considerations related to the choice of the appropriate timing of the initial firming in monetary policy and pace of subsequent rate increases. Ahead of this discussion, the staff gave a presentation that outlined some of the key issues likely to be involved, including the extent to which similar economic outcomes could be generated by different combinations of the date of the initial firming of policy and the pace of rate increases thereafter, how these combinations could affect the risks to economic outcomes, a review of past episodes in the United States and abroad in which monetary policy transitioned to a tightening phase after a lengthy period of low policy rates, and issues related to communications regarding the likely timing and pace of normalization.

Participants discussed the tradeoffs between the risks that would be associated with departing from the effective lower bound later and those that would be associated with departing earlier. Several participants noted that a late departure could result in the stance of monetary policy becoming excessively accommodative, leading to undesirably high inflation. It was also suggested that maintaining the federal funds rate at its effective lower bound for an extended period or raising it rapidly, if that proved necessary, could adversely affect financial stability. Some participants were concerned that a decision to delay the commencement of tightening could be perceived as indicating that an overly accommodative policy is likely to prevail during the firming phase. In connection with the risks associated with an early start to policy normalization, many participants observed that a premature increase in rates might damp the apparent solid recovery in real activity and labor market conditions, undermining progress toward the Committee's objectives of maximum employment and 2 percent inflation. In addition, an earlier tightening would increase the likelihood that the Committee might be forced by adverse economic outcomes to return the federal funds rate to its effective lower bound. Some participants noted the communications challenges associated with the prospect of commencing policy tightening at a time when inflation could be running well below 2 percent, and a few expressed concern that in some circumstances the public could come to question the credibility of the Committee's 2 percent goal. Indeed, one participant recommended that, in light of the outlook for inflation, the Committee consider ways to use its tools to provide more, not less, accommodation.

Many participants indicated that their assessment of the balance of risks associated with the timing of the beginning of policy normalization had inclined them toward keeping the federal funds rate at its effective lower bound for a longer time. Some observed that, even with these risks taken into consideration, the federal funds rate may have already been kept at its lower bound for a sufficient length of time, and that it might be appropriate to begin policy firming in the near term. Regardless of the particular strategy undertaken, it was noted that, provided that the data-dependent nature of the path for the federal funds

rate after its initial increase could be communicated to financial markets and the general public in an effective manner, the precise date at which firming commenced would have a less important bearing on economic outcomes.

Participants discussed the economic conditions that they anticipate will prevail at the time they expect it will be appropriate to begin normalizing policy. There was wide agreement that it would be difficult to specify in advance an exhaustive list of economic indicators and the values that these indicators would need to take. Nonetheless, a number of participants suggested that they would need to see further improvement in labor market conditions and data pointing to continued growth in real activity at a pace sufficient to support additional labor market gains before beginning policy normalization. Many participants indicated that such economic conditions would help bolster their confidence in the likelihood of inflation moving toward the Committee's 2 percent objective after the transitory effects of lower energy prices and other factors dissipate. Some participants noted that their confidence in inflation returning to 2 percent would also be bolstered by stable or rising levels of core PCE inflation, or of alternative series, such as trimmed mean or median measures of inflation. A number of participants emphasized that they would need to see either an increase in market-based measures of inflation compensation or evidence that continued low readings on these measures did not constitute grounds for concern. Several participants indicated that signs of improvements in labor compensation would be an important signal, while a few others deemphasized the value of labor compensation data for judging incipient inflation pressures in light of the loose short-run empirical connection between wage and price inflation.

Participants discussed the communications challenges associated with signaling, when it becomes appropriate to do so, that policy normalization is likely to begin relatively soon while remaining clear that the Committee's actions would depend on incoming data. Many participants regarded dropping the "patient" language in the statement, whenever that might occur, as risking a shift in market expectations for the beginning of policy firming toward an unduly narrow range of dates. As a result, some expressed the concern that financial markets might overreact, resulting in undesirably tight financial conditions. Participants discussed some possible communications by which they might further underscore the data dependency of their decision regarding when to tighten the stance of monetary policy. A number of participants noted that while forward guidance had been a very useful tool under the extraordinary conditions of recent years, as the start of normalization approaches, there would be limits to the specificity that the Committee could provide about its timing. Looking ahead, some participants highlighted the potential benefits of streamlining the Committee's postmeeting statement once normalization has begun. More broadly, it was suggested that the Committee should communicate clearly that policy decisions will be data dependent, and that unanticipated economic developments could therefore warrant a path of the federal funds rate different from that currently expected by investors or policymakers.

Committee Policy Action

In their discussion of monetary policy for the period ahead, members judged that information received since the FOMC met in December indicated that economic activity had been expanding at a solid pace. Labor market conditions had improved further, with strong job gains and a lower unemployment rate; numerous labor market indicators suggested that the underutilization of labor resources was continuing to diminish. Household spending was rising moderately; recent declines in energy prices had boosted household purchasing power. Business fixed investment was advancing, while the recovery in the housing sector remained slow. Inflation had declined further below the Committee's longer-run objective, largely reflecting declines in energy prices, and was expected to decline further in the near term. Market-based measures of five-year, five-year-forward inflation compensation had declined substantially in recent months, but survey-based measures of longer-term inflation expectations had remained stable. The Committee expected that, with appropriate monetary policy accommodation, economic activity would continue to expand at a moderate pace, with labor market indicators moving toward levels the Committee judges consistent with its dual mandate. The Committee also expected that inflation would rise gradually toward 2 percent as the labor market improves further and the transitory effects of lower energy prices and other factors dissipate. In view of the uncertainties about the inflation outlook, the Committee agreed that it should continue to monitor inflation developments closely.

In their discussion of language for the postmeeting statement, members generally agreed that they should acknowledge the solid growth over the second

half of 2014 as well as the further improvement in labor market conditions over the intermeeting period. Job gains had been strong, and the Committee judged that labor market slack continued to diminish. In addition, members decided that the statement should note the further decline of inflation seen of late and the additional decline that was in prospect in the near term, while also registering their judgment that these short-term movements of inflation largely reflected the recent decline in energy prices and other transitory factors, and that inflation was likely to rise gradually toward 2 percent over the medium term. Members also agreed that it was appropriate to observe that lower energy prices had boosted household purchasing power. The Committee further decided that the postmeeting statement should explicitly acknowledge the role of international developments as one of the factors influencing the Committee's assessment of progress toward its objectives of maximum employment and 2 percent inflation.

The Committee agreed to maintain the target range for the federal funds rate at 0 to ¼ percent and to reaffirm the indication in the statement that the Committee's decision about how long to maintain the current target range for the federal funds rate would depend on its assessment of actual and expected progress toward its objectives of maximum employment and 2 percent inflation. Members agreed to continue to include, in the forward guidance, language indicating that the Committee judges that it can be patient in beginning to normalize the stance of monetary policy. Members agreed that their policy decisions would remain data dependent, and they continued to include wording in the statement noting that if incoming information indicates faster progress toward the Committee's employment and inflation objectives than the Committee now expects, then increases in the target range for the federal funds rate would likely occur sooner than currently anticipated, and, conversely, that if progress proves slower than expected, then increases in the target range would likely occur later than currently anticipated. The Committee decided to maintain its policy of reinvesting principal payments from its holdings of agency debt and agency mortgage-backed securities in agency mortgage-backed securities and of rolling over maturing Treasury securities at auction. This policy, by keeping the Committee's holdings of longer-term securities at sizable levels, should help maintain accommodative financial conditions. Finally, the Committee also decided to reiterate its expectation that, even after employment and inflation are near mandate-consistent levels, economic conditions may, for some time, warrant keeping the target federal funds rate below levels the Committee views as normal in the longer run.

At the conclusion of the discussion, the Committee voted to authorize and direct the Federal Reserve Bank of New York, until it was instructed otherwise, to execute transactions in the SOMA in accordance with the following domestic policy directive:

> "Consistent with its statutory mandate, the Federal Open Market Committee seeks monetary and financial conditions that will foster maximum employment and price stability. In particular, the Committee seeks conditions in reserve markets consistent with federal funds trading in a range from 0 to ¼ percent. The Committee directs the Desk to undertake open market operations as necessary to maintain such conditions. The Committee directs the Desk to maintain its policy of rolling over maturing Treasury securities into new issues and its policy of reinvesting principal payments on all agency debt and agency mortgage-backed securities in agency mortgage-backed securities. The Committee also directs the Desk to engage in dollar roll and coupon swap transactions as necessary to facilitate settlement of the Federal Reserve's agency mortgage-backed securities transactions. The System Open Market Account manager and the secretary will keep the Committee informed of ongoing developments regarding the System's balance sheet that could affect the attainment over time of the Committee's objectives of maximum employment and price stability."

The vote encompassed approval of the statement below to be released at 2:00 p.m.:

> "Information received since the Federal Open Market Committee met in December suggests that economic activity has been expanding at a solid pace. Labor market conditions have improved further, with strong job gains and a lower unemployment rate. On balance, a range of labor market indicators suggests that underutilization of labor resources continues to diminish. Household spending is rising moderately; recent declines in energy prices have boosted household purchasing power. Business fixed investment is advancing, while the recovery in the housing sector remains slow. Inflation has declined further below the Committee's longer-

run objective, largely reflecting declines in energy prices. Market-based measures of inflation compensation have declined substantially in recent months; survey-based measures of longer-term inflation expectations have remained stable.

Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee expects that, with appropriate policy accommodation, economic activity will expand at a moderate pace, with labor market indicators continuing to move toward levels the Committee judges consistent with its dual mandate. The Committee continues to see the risks to the outlook for economic activity and the labor market as nearly balanced. Inflation is anticipated to decline further in the near term, but the Committee expects inflation to rise gradually toward 2 percent over the medium term as the labor market improves further and the transitory effects of lower energy prices and other factors dissipate. The Committee continues to monitor inflation developments closely.

To support continued progress toward maximum employment and price stability, the Committee today reaffirmed its view that the current 0 to ¼ percent target range for the federal funds rate remains appropriate. In determining how long to maintain this target range, the Committee will assess progress—both realized and expected—toward its objectives of maximum employment and 2 percent inflation. This assessment will take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments. Based on its current assessment, the Committee judges that it can be patient in beginning to normalize the stance of monetary policy. However, if incoming information indicates faster progress toward the Committee's employment and inflation objectives than the Committee now expects, then increases in the target range for the federal funds rate are likely to occur sooner than currently anticipated. Conversely, if progress proves slower than expected, then increases in the target range are likely to occur later than currently anticipated.

The Committee is maintaining its existing policy of reinvesting principal payments from its holdings of agency debt and agency mortgage-backed securities in agency mortgage-backed securities and of rolling over maturing Treasury securities at auction. This policy, by keeping the Committee's holdings of longer-term securities at sizable levels, should help maintain accommodative financial conditions.

When the Committee decides to begin to remove policy accommodation, it will take a balanced approach consistent with its longer-run goals of maximum employment and inflation of 2 percent. The Committee currently anticipates that, even after employment and inflation are near mandate-consistent levels, economic conditions may, for some time, warrant keeping the target federal funds rate below levels the Committee views as normal in the longer run."

Voting for this action: Janet L. Yellen, William C. Dudley, Lael Brainard, Charles L. Evans, Stanley Fischer, Jeffrey M. Lacker, Dennis P. Lockhart, Jerome H. Powell, Daniel K. Tarullo, and John C. Williams.

Voting against this action: None.

It was agreed that the next meeting of the Committee would be held on Tuesday–Wednesday, March 17–18, 2015. The meeting adjourned at 12:55 p.m. on January 28, 2015.

Notation Vote

By notation vote completed on January 6, 2015, the Committee unanimously approved the minutes of the Committee meeting held on December 16–17, 2014.

Thomas Laubach
Secretary

Meeting Held on March 17–18, 2015

A meeting of the Federal Open Market Committee was held in the offices of the Board of Governors of the Federal Reserve System in Washington, D.C., on Tuesday, March 17, 2015, at 10:30 a.m. and continued on Wednesday, March 18, 2015, at 9:00 a.m.

Present

Janet L. Yellen
Chair

William C. Dudley
Vice Chairman

Lael Brainard

Charles L. Evans

Stanley Fischer

Jeffrey M. Lacker

Dennis P. Lockhart

Jerome H. Powell

Daniel K. Tarullo

John C. Williams

James Bullard, Christine Cumming, Esther L. George, Loretta J. Mester, and Eric Rosengren
Alternate Members of the Federal Open Market Committee

Narayana Kocherlakota
President of the Federal Reserve Bank of Minneapolis

Helen E. Holcomb and Blake Prichard
First Vice Presidents, Federal Reserve Banks of Dallas and Philadelphia, respectively

Thomas Laubach
Secretary and Economist

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Developments in Financial Markets and the Federal Reserve's Balance Sheet

In a joint session of the Federal Open Market Committee (FOMC) and the Board of Governors of the Federal Reserve System, the manager of the System Open Market Account (SOMA) reported on developments in domestic and foreign financial markets. The deputy manager followed with a review of System open market operations conducted during the period since the Committee met on January 27–28, 2015. The deputy manager also discussed the outcomes of recent tests of supplementary normalization tools—namely, the Term Deposit Facility (TDF) and term and overnight reverse repurchase agreement operations (term RRP operations and ON RRP operations, respectively). The TDF operations were executed as three overlapping 21-day term operations with same-day settlement; the total amount of term deposits outstanding peaked at roughly the same level as in the largest operation conducted in prior testing. The term RRP operations were executed as a series of four one-week operations and conducted away from quarter-end; take-up primarily represented substitution away from ON RRP operations. The combination of these term and ON RRP test operations continued to provide a soft floor for money market rates over the intermeeting period.

By unanimous vote, the Committee ratified the Open Market Desk's domestic transactions over the intermeeting period. There were no intervention operations in foreign currencies for the System's account over the intermeeting period.

Normalization Tools

A staff briefing provided background on options for setting the aggregate capacity of the ON RRP facility in the early stages of the normalization process. Two options were discussed: initially setting a temporarily elevated aggregate cap or suspending the aggregate cap for a time. The briefing noted that, as the balance sheet normalizes and reserve balances decline, usage of the ON RRP facility should diminish, allowing the facility to be phased out over time. In addition, the briefing outlined strategies for actively reducing

[2] Attended the portion of the meeting following the joint session of the Federal Open Market Committee and the Board of Governors.

take-up at the ON RRP facility after policy normalization is under way, while maintaining an appropriate degree of monetary control, if take-up is larger than the FOMC desires. These strategies included adjusting the values of the interest on excess reserves (IOER) and ON RRP rates associated with a given target range for the federal funds rate, relying on tools such as term RRPs and the TDF to broaden arbitrage opportunities and to drain reserve balances, and selling shorter-term Treasury securities to reduce the size of the balance sheet at a faster pace. In addition, the briefing presented some information on specific calibrations of policy tools that could be used during the early stages of policy normalization.

In their discussion of the options and strategies surrounding the use of tools at liftoff and the potential subsequent reduction in aggregate ON RRP capacity, participants emphasized that during the early stages of policy normalization, it will be a priority to ensure appropriate control over the federal funds rate and other short-term interest rates. Against this backdrop, participants generally saw some advantages to a temporarily elevated aggregate cap or a temporary suspension of the cap to ensure that the facility would have sufficient capacity to support policy implementation at the time of liftoff, but they also indicated that they expected that it would be appropriate to reduce ON RRP capacity fairly soon after the Committee begins firming the stance of policy. A couple of participants stated their view that the risks to financial stability that might arise from a temporarily elevated aggregate ON RRP capacity were likely to be small, and it was noted that there might be little potential for a temporarily large Federal Reserve presence in money markets to affect the structure of those markets if plans for reducing the facility's capacity were clearly communicated and well understood. However, a couple of participants expressed financial stability concerns, and one stressed that more planning was needed to address the potential risks before the Committee decides on the appropriate level of ON RRP capacity at the time of liftoff.

In their discussion regarding strategies for reducing ON RRP usage, should it become undesirably large during the early stages of normalization, most participants viewed raising the IOER rate, thereby widening the spread between the IOER and ON RRP rates, as an appropriate initial step. A majority of participants thought term reserve draining tools could be useful in reducing ON RRP usage, although a couple of participants questioned their effectiveness in placing upward pressure on market interest rates, and a few did not see term RRPs as reducing the Federal Reserve's presence in money markets, arguing that investors view term and overnight RRPs as close substitutes. Many participants mentioned that selling assets that will mature in a relatively short time could be considered at some stage, if necessary to reduce ON RRP usage. However, a number of participants noted that it could be difficult to communicate the reason for such sales to the public, and, in particular, that the announcement of such sales would risk an outsized market reaction, as the public could view the sales as a signal of a tighter overall stance of monetary policy than they had anticipated or as an indication that the Committee might be more willing than had been thought to sell longer-term assets. Some participants pointed out that an earlier end to reinvestments of principal on maturing or prepaying securities would help reduce the level of reserve balances, thereby increasing the effectiveness of the IOER rate and allowing a more rapid reduction in the size of the ON RRP facility. A number of participants suggested that it would be useful to consider specific plans for these and other details of policy normalization under a range of post-liftoff scenarios.

Participants also discussed whether to communicate to the public additional details regarding the approach they intend to take when it becomes appropriate to begin the normalization process, including the width of the target range for the federal funds rate, the settings of the IOER and ON RRP rates, and the use of supplementary tools. A couple of participants suggested communicating a specific commitment to reducing ON RRP capacity soon after liftoff. However, a number of participants emphasized that maintaining control of short-term interest rates would be paramount in the initial stages of policy normalization, and that it was difficult to know in advance when a reduction would be appropriate. They therefore desired to retain some flexibility over the timing of any reduction. That said, many participants agreed that an elevated aggregate capacity for the facility would likely be appropriate only for a short period after liftoff.

At the conclusion of their discussion, all participants agreed to augment the Committee's Policy Normalization Principles and Plans by providing the following additional details regarding the operational approach the FOMC intends to use when it becomes

appropriate to begin normalizing the stance of monetary policy.[3]

When economic conditions warrant the commencement of policy firming, the Federal Reserve intends to:

- Continue to target a range for the federal funds rate that is 25 basis points wide.
- Set the IOER rate equal to the top of the target range for the federal funds rate and set the offering rate associated with an ON RRP facility equal to the bottom of the target range for the federal funds rate.
- Allow aggregate capacity of the ON RRP facility to be temporarily elevated to support policy implementation; adjust the IOER rate and the parameters of the ON RRP facility, and use other tools such as term operations, as necessary for appropriate monetary control, based on policymakers' assessments of the efficacy and costs of their tools. The Committee expects that it will be appropriate to reduce the capacity of the facility fairly soon after it commences policy firming.

A staff briefing outlined some options for further testing of term RRP operations over future quarter-ends. While the tests of term RRPs to date had been informative, the staff suggested that if the Committee envisioned using term RRPs as part of its strategy at liftoff, or potentially at some other point during normalization, continued testing may be useful. Participants discussed whether a resolution that authorized term RRP test operations at quarter-ends through the end of 2015 might reduce the probability that market participants mistakenly interpret future decisions about testing term RRPs over quarter-ends as containing information about the likely timing of liftoff. It was noted that such a resolution would be more efficient from an administrative and communications standpoint, as it would simply allow a continuation of recent quarter-end testing of term RRPs. Moreover, the resolution would not convey any information regarding either the timing of the start of policy normalization or whether term RRP operations might be employed at the time of liftoff and, if so, for how long.

Following the discussion of the testing of term RRP operations, the Committee approved the following resolution on term RRP testing over quarter-ends through January 29, 2016:

> "During each of the periods of June 18 to 29, 2015; September 18 to 29, 2015; and December 17 to 30, 2015, the Federal Open Market Committee (FOMC) authorizes the Federal Reserve Bank of New York to conduct a series of term reverse repurchase operations involving U.S. government securities. Such operations shall: (i) mature no later than July 8, 2015, October 7, 2015, and January 8, 2016, respectively; (ii) be subject to an overall size limit of $300 billion outstanding at any one time; (iii) be subject to a maximum bid rate of five basis points above the ON RRP offering rate in effect on the day of the operation; (iv) be awarded to all submitters: (A) at the highest submitted rate if the sum of the bids received is less than or equal to the preannounced size of the operation, or (B) at the stop-out rate, determined by evaluating bids in ascending order by submitted rate up to the point at which the total quantity of bids equals the preannounced size of the operation, with all bids below this rate awarded in full at the stop-out rate and all bids at the stop-out rate awarded on a pro rata basis, if the sum of the counterparty offers received is greater than the preannounced size of the operation. Such operations may be for forward settlement. The System Open Market Account manager will inform the FOMC in advance of the terms of the planned operations. The Chair must approve the terms of, timing of the announcement of, and timing of the operations. These operations shall be conducted in addition to the authorized overnight reverse repurchase agreements, which remain subject to a separate overall size limit authorized by the FOMC."

Mr. Lacker dissented in the vote on the resolution because the March end-of-quarter testing had not yet been completed and he felt that there was no need to authorize additional testing before then.

The Board meeting concluded at the end of the discussion of normalization tools.

Staff Review of the Economic Situation

The information reviewed for the March 17–18 meeting suggested that real gross domestic product (GDP) growth moderated in the first quarter and that labor market conditions improved further. Consumer price

[3] The statement titled Policy Normalization Principles and Plans is available on the Board's website at www.federalreserve.gov/newsevents/press/monetary/20140917c.htm.

inflation was restrained significantly by declines in energy prices and continued to run below the FOMC's longer-run objective of 2 percent. Market-based measures of inflation compensation were still low, while survey measures of longer-run inflation expectations remained stable.

Nonfarm payroll employment continued to expand strongly in January and February. The unemployment rate declined to 5.5 percent in February. Both the labor force participation rate and the employment-to-population ratio rose slightly over the first two months of the year, and the share of workers employed part time for economic reasons edged down. The rate of private-sector job openings moved up in January and was at an elevated level; the rate of quits remained the same as in the fourth quarter, but the rate of hiring stepped down.

Industrial production decreased a little, on net, in January and February, as declines in the output of the manufacturing and mining sectors more than offset an increase in utilities production. Some indicators of mining activity, such as counts of drilling rigs in operation, dropped further. However, automakers' assembly schedules and broader indicators of manufacturing production, such as the readings on new orders from national and regional manufacturing surveys, generally pointed to modest gains in factory output in coming months.

Real personal consumption expenditures (PCE) appeared to decelerate somewhat going into the first quarter after rising markedly in the fourth quarter. The components of the nominal retail sales data used by the Bureau of Economic Analysis to construct its estimate of PCE declined slightly in January and February, and light motor vehicle sales stepped down; unusually severe weather in some regions in February may have accounted for a small part of the slowing in consumer spending in that month. Recent information about key factors that influence household spending pointed toward a pickup in PCE in the coming months. The purchasing power of households' income continued to be supported by low energy prices, and real disposable income rose briskly in January. Moreover, households' net worth likely increased as equity prices and home values advanced further, and consumer sentiment in the University of Michigan Surveys of Consumers was still near its highest level since prior to the most recent recession.

The pace of activity in the housing sector remained slow. Both starts and building permits for new single-family homes declined over January and February. Starts of multifamily units also decreased, on net, over the past two months. Sales of new and existing homes moved down in January, although pending home sales increased somewhat.

Real private expenditures for business equipment and intellectual property products appeared to be expanding in the first quarter at about the same modest pace as in the previous quarter. Both nominal orders and shipments of nondefense capital goods excluding aircraft rose in January. New orders for these capital goods remained above the level of shipments, indicating that shipments may increase in subsequent months. Other forward-looking indicators, such as national and regional surveys of business conditions, were generally consistent with modest increases in business equipment spending in the near term. Firms' nominal spending for nonresidential structures moved down in January after rising in the fourth quarter.

Federal spending data for January and February pointed toward a further decline in real federal government purchases in the first quarter. Real state and local government purchases appeared to be rising modestly in the first quarter as their payrolls increased in recent months, although their construction expenditures decreased a little in January.

The U.S. international trade deficit widened substantially in December before narrowing somewhat in January. Exports declined in both December and January, reflecting weak agricultural goods exports, the lower price of petroleum products, and falling or flat exports of most other categories of goods. Imports rose in December, with an increased volume of petroleum imports, but declined in January, driven by lower prices and volumes for petroleum.

Total U.S. consumer prices, as measured by the PCE price index, edged up only ¼ percent over the 12 months ending in January, as energy prices declined significantly. The core PCE price index, which excludes food and energy prices, rose 1¼ percent over the same 12-month period. Measures of expected long-run inflation from a variety of surveys, including the Michigan survey, the *Blue Chip Economic Indicators*, the Survey of Professional Forecasters, and the Desk's Survey of Primary Dealers, remained stable. Market-based measures of inflation compensation were still low. Measures of labor compensation continued to increase at a modest pace, although faster than consumer prices. Both compen-

sation per hour in the nonfarm business sector and the employment cost index rose 2¼ percent over the year ending in the fourth quarter. Average hourly earnings for all employees increased 2 percent over the 12 months ending in February.

Foreign real GDP appeared to expand at a moderate pace in the fourth quarter. While GDP growth stepped down in several economies, including Canada and China, it picked up in the euro area, Japan, and Mexico. Indicators for the first quarter suggested continued firming in the euro area and further slowing in China and Canada. Consumer prices in many foreign economies declined further in the first months of this year, reflecting the falls in energy prices as well as decreases in food prices in some emerging market economies. Many central banks took steps to ease monetary policy during the period, including the European Central Bank (ECB), which began purchasing sovereign bonds under its public sector purchase program (PSPP), and the People's Bank of China, which lowered required reserve ratios for banks. A number of other central banks in advanced and emerging market economies cut policy interest rates.

Staff Review of the Financial Situation

Movements in asset prices over the intermeeting period largely seemed to reflect receding concerns about downside risks to the global economic outlook. Two strong U.S. employment reports and the January consumer price index release, all of which were above market expectations; the start of sovereign bond purchases by the ECB; and the somewhat more encouraging economic news from Europe all appeared to contribute to the improved sentiment in financial markets. Equity prices were higher, on net, although they declined later in the period.

Federal Reserve communications over the intermeeting period, including the minutes of the January FOMC meeting, reportedly were perceived as slightly more accommodative than expected on balance. Market commentary also highlighted Chair Yellen's statement at the *Monetary Policy Report* testimony that the eventual removal of the language in the policy statement noting that "the Committee judges that it can be patient in beginning to normalize the stance of monetary policy" should not be viewed as indicating that the federal funds rate would necessarily be increased within a couple of meetings. However, the effects of these communications on the expected path for the federal funds rate were more than offset by reactions to stronger-than-expected data for the labor market and consumer inflation, along with perceptions of receding downside risks to the foreign economic outlook. On net, the expected path for the federal funds rate implied by financial market quotes shifted up over the period.

Yields on nominal Treasury securities increased across the maturity spectrum, and the Treasury yield curve steepened. Measures of inflation compensation based on Treasury Inflation-Protected Securities increased early in the intermeeting period amid rising oil prices but ended the period little changed, on net, after oil prices dropped back.

Broad U.S. equity price indexes moved up, on balance, over the intermeeting period, and one-month option-implied volatility on the S&P 500 index moved down on net. Spreads of 10-year corporate bond yields over those on comparable-maturity Treasury securities for both BBB-rated and speculative-grade issuers narrowed notably, likely reflecting increased appetite for riskier investments. While the tightening of spreads was broad based, the declines in short- and intermediate-term spreads for speculative-grade energy firms were particularly pronounced, retracing most of their strong run-up approaching the end of last year.

Results from the Desk's Survey of Primary Dealers and Survey of Market Participants for March indicated that the respondents attached the greatest probabilities to the first increase in the target range for the federal funds rate occurring at either the June or September FOMC meeting; those probabilities were marked up relative to the January survey. In addition, survey respondents widely expected the "patient" language to be removed from the FOMC statement following the March meeting. Conditional on this change in the statement, respondents assigned a roughly 40 percent probability, on average, to liftoff occurring two meetings ahead and assigned most of the remaining probability to later dates.

Credit conditions faced by large nonfinancial firms remained generally accommodative. Corporate bond issuance increased in February, mostly reflecting activity by investment-grade firms. Commercial and industrial loans on banks' books continued to expand strongly, reportedly in part to fund increased merger and acquisition activity. Institutional leveraged loan issuance during January and February was supported by strong issuance of new money loans, while refinancing activity effectively came to a stop,

likely reflecting elevated loan spreads. On net, issuance of collateralized loan obligations was only modestly below the strong pace registered in the fourth quarter of 2014.

Financing for the commercial real estate (CRE) sector stayed broadly available over the intermeeting period. Growth of CRE loans on banks' books remained solid, in part supported by loans to finance construction activity. The issuance of commercial mortgage-backed securities (CMBS) was still robust so far this year, and spreads continued to be low. After taking into account deals in the pipeline for March, issuance in the first quarter of 2015 was expected to be the strongest since the financial crisis. According to the March Senior Credit Officer Opinion Survey on Dealer Financing Terms, dealers' willingness to provide warehouse financing for loans intended for inclusion in CMBS increased since the beginning of 2014. In addition, demand for funding of CMBS by hedge funds and real estate investment trusts reportedly rose over the same period.

Credit conditions for mortgages remained tight for riskier borrowers, with relatively few mortgages originated to borrowers in the lower portion of the credit score distribution. For borrowers who qualify for a mortgage, the cost of credit stayed low by historical standards.

Consumer credit rose further over the intermeeting period. Auto and student loan balances continued to expand robustly through January, while credit card balances decelerated slightly. Issuance of consumer asset-backed securities remained robust.

The dollar appreciated against most other currencies over the intermeeting period, as policymakers in the euro area, Sweden, Denmark, and many emerging market economies eased monetary policy even as market participants anticipated monetary policy tightening in the United States. Central bank policymakers in Sweden and Denmark lowered the rates on their respective deposit facilities further below zero. In addition, in Sweden, the benchmark repurchase agreement (or repo) rate was reduced in February to below zero for the first time, and a further cut was announced in March. Equity prices rose in most of the advanced foreign economies, with euro-area stocks rallying both before and after the early March commencement of sovereign bond purchases by the ECB under its PSPP. Stock market performance in the emerging market economies was more varied, with net losses in some and net gains in others. Yields on German government securities declined, with negative yields extending to longer maturities than at the time of the January meeting, likely in reaction to the PSPP, and yield spreads of most other euro-area sovereign bonds over German bonds narrowed. The main exception was Greek bonds, spreads on which widened, on net, amid heightened volatility as negotiations between Greece and its official creditors over support for the country's public finances continued. Yields on the long-term sovereign bonds of many other countries, including Japan and the United Kingdom, rose during the period.

Staff Economic Outlook

In the U.S. economic forecast prepared by the staff for the March FOMC meeting, projected real GDP growth in the first half of this year was lower than in the forecast prepared for the January meeting, largely reflecting downward revisions to the near-term forecasts for household spending, net exports, and residential investment. The staff's medium-term forecast for real GDP growth also was revised down, mostly because of the effects of a higher projected path for the foreign exchange value of the dollar. Nonetheless, the staff continued to forecast that real GDP would expand at a faster pace than potential output in 2015 and 2016, supported by increases in consumer and business confidence and a small pickup in foreign economic growth, even as the normalization of monetary policy was assumed to begin. In 2017, real GDP growth was projected to slow toward, but to remain above, the rate of potential output growth. The expansion in economic activity over the medium term was anticipated to gradually reduce resource slack; the unemployment rate was expected to decline slowly and to temporarily move a little below the staff's estimate of its longer-run natural rate. In its medium-term and longer-run projections, the staff slightly lowered its assumptions for potential GDP growth and real equilibrium interest rates.

The staff's forecast for inflation in the near term was little changed, with the large declines in energy prices since last June still anticipated to lead to a temporary decrease in the 12-month change in total PCE prices in the first half of this year. The staff's forecast for inflation in 2016 and 2017 was unchanged, as energy prices and non-oil import prices were still expected to bottom out and begin rising later this year; inflation was projected to move closer to, but remain below, the Committee's longer-run objective of 2 percent over those years. Inflation was anticipated to move back to 2 percent thereafter, with inflation expecta-

tions in the longer run assumed to be consistent with the Committee's objective and slack in labor and product markets projected to have waned.

The staff viewed the extent of uncertainty around its March projections for real GDP growth, the unemployment rate, and inflation as similar to the average over the past 20 years. The risks to the forecasts for real GDP growth and inflation were viewed as tilted a little to the downside, reflecting the staff's assessment that neither monetary policy nor fiscal policy was well positioned to help the economy withstand adverse shocks. At the same time, the staff viewed the risks around its outlook for the unemployment rate as roughly balanced.

Participants' Views on Current Conditions and the Economic Outlook

In conjunction with this FOMC meeting, members of the Board of Governors and participating Federal Reserve Bank presidents submitted their projections of the most likely outcomes for real GDP growth, the unemployment rate, inflation, and the federal funds rate for each year from 2015 through 2017 and over the longer run, conditional on each participant's judgment of appropriate monetary policy.[4] The longer-run projections represent each participant's assessment of the rate to which each variable would be expected to converge, over time, under appropriate monetary policy and in the absence of further shocks to the economy. These economic projections and policy assessments are described in the Summary of Economic Projections, which is attached as an addendum to these minutes.

In their discussion of the economic situation and the outlook, meeting participants regarded the information received over the intermeeting period as indicating that the pace of economic activity had moderated somewhat. Labor market conditions continued to improve, with strong job gains and a lower unemployment rate, and participants judged that underutilization of labor resources was continuing to diminish. A number of participants noted that slow growth of productivity or the labor force could reconcile the moderation in economic growth with the solid performance of some labor market indicators. Participants expected that, over the medium term, real economic activity would expand at a moderate pace and there would be additional improvements in labor market conditions. Participants generally regarded the net effect of declines in energy prices as likely to be positive for economic activity and employment in the United States, although a couple noted that physical limits on the accumulation of stocks of crude oil could result in further downward pressure on prices and reduce U.S. oil and gas production and investment. Inflation had declined further below the Committee's longer-run objective, largely reflecting declines in energy prices, and was expected to stay near its recent low level in the near term. Market-based measures of inflation compensation 5 to 10 years ahead remained low, while survey-based measures of longer-term inflation expectations had remained stable. Participants generally anticipated that inflation would rise gradually toward the Committee's 2 percent objective as the labor market improved further and the transitory effects of energy price declines and other factors dissipated. While almost all participants noted potential risks to the economic outlook resulting from foreign economic and financial developments, most saw the risks to the outlook for economic growth and the labor market as nearly balanced.

Household spending appeared to have slowed somewhat over the intermeeting period, with some participants suggesting that the recent softness in spending indicators was likely due in part to transitory factors, such as unseasonably cold winter weather in parts of the country. Some participants expressed the view that growth in consumer spending over the medium term would be supported by the strong labor market and rising income, increases in wealth and improvements in household balance sheets, lower gasoline prices, and gains in consumer confidence. Although activity in the housing sector remained sluggish, a few participants were cautiously optimistic that recent higher rates of household formation, together with low mortgage rates, would enable a faster pace of recovery.

Business contacts in many parts of the country continued to express optimism about prospects for future sales or investment. However, there were widespread reports of a slowdown in growth during the first quarter across a range of industries, partly reflecting severe winter weather in some regions as well as labor disputes at West Coast ports that temporarily disrupted some supply chains. In several parts of the country, persistently low oil prices had resulted in

[4] The president of the Federal Reserve Bank of Dallas did not participate in this FOMC meeting, and the incoming president of the Federal Reserve Bank of Philadelphia is scheduled to assume office on July 1. Helen E. Holcomb and Blake Prichard, First Vice Presidents of the Federal Reserve Banks of Dallas and Philadelphia, respectively, submitted economic projections.

declines in drilling and delays in planned capital expenditures in the energy sector, and had negatively affected state government revenues. Manufacturing contacts in a couple of regions reported a softening in export sales. In contrast, service-sector activity had been reasonably strong in several parts of the country, as had auto sales, and the increase in household purchasing power from lower gasoline prices was expected to boost retail sales. Labor market conditions continued to improve in most regions, with wage pressures generally reported to be modest.

In their discussion of the foreign economic outlook, several participants noted that the dollar's further appreciation over the intermeeting period was likely to restrain U.S. net exports and economic growth for a time. A few participants suggested that accommodative policy actions by a number of foreign central banks could lead to a further appreciation of the dollar, but another noted that such actions had also strengthened the outlook for growth abroad, which would bolster U.S. exports. Participants pointed to a number of risks to the international economic outlook, including the slowdown in growth in China, fiscal and financial problems in Greece, and geopolitical tensions.

Participants saw broad-based improvement in labor market conditions over the intermeeting period, including strong gains in payroll employment and a further reduction in the unemployment rate. Several participants judged, based on the improvement in a variety of labor market indicators, that the economy was making further progress toward the Committee's goal of maximum employment. Nonetheless, many judged that some degree of labor market slack remained, as evidenced by the low rate of labor force participation, still-elevated involuntary part-time employment, or subdued growth in wages. A few of them noted that continued modest wage growth could prompt them to reduce their estimates of the longer-run normal rate of unemployment. A few participants observed that the absence of a notable pickup in wages might not be a useful yardstick for evaluating the degree of remaining slack because of the long lags between declines in unemployment and the response of wages or uncertainty about trend productivity growth. One participant, however, saw some evidence of rising wage growth and suggested that compositional changes in the labor force could be masking underlying wage pressures, particularly as measured by average hourly earnings.

Many participants judged that the inflation data received over the intermeeting period had been about in line with their expectations that inflation would move temporarily further below the Committee's goal, largely reflecting declines in energy prices and lower prices of non-oil imports. They continued to expect that inflation would move up toward the Committee's 2 percent objective over the medium term as the effects of these transitory factors waned and conditions in the labor market improved further. Survey-based measures of inflation expectations had remained stable, and market-based measures of inflation compensation over the longer term were about unchanged from the time of the January meeting, although they had exhibited some volatility over the intermeeting period. It was noted that the market-based measures had tracked quite closely the movements in crude oil prices over the period, first rising and then falling back. Participants offered various explanations for this correlation, including that market-based measures of inflation compensation were responding to the same global developments as oil prices, that these measures were capturing changes in risk or liquidity premiums, or that inflation-indexed securities were subject to mispricing. A couple of participants pointed out that the movements in crude oil prices and market-based inflation compensation measures had not been particularly well aligned over a longer historical period, or that information gleaned from inflation derivatives suggested a substantial increase in the probability that inflation would remain well below the Committee's target over the next decade. One of them judged that the low level of inflation compensation could reflect increased concern on the part of investors about adverse outcomes in which low inflation was accompanied by weak economic activity, and that it was important not to dismiss this possible interpretation.

In their discussion of communications regarding the path of the federal funds rate over the medium term, almost all participants favored removing from the forward guidance in the Committee's postmeeting statement the indication that the Committee would be patient in beginning to normalize the stance of monetary policy. These participants continued to think that an increase in the target range for the federal funds rate was unlikely in April. But, with continued improvement in economic conditions, they preferred language that would provide the Committee with the flexibility to subsequently adjust the target range for the federal funds rate on a meeting-by-

meeting basis. It was noted that eliminating the reference to being patient would be appropriate in light of the considerable progress achieved toward the Committee's objective of maximum employment, and that such a change would not indicate that the Committee had decided on the timing of the initial increase in the target range for the federal funds rate. Participants generally judged that the appropriate timing of liftoff would depend on their assessment of improvement in the labor market and their degree of confidence that inflation would move back to the Committee's 2 percent objective over the medium term, and that it would be helpful to convey to the public this data-dependent approach to monetary policy. A few participants emphasized that the decision regarding the appropriate timing of liftoff should take account of the risks that could be associated with departing from the effective lower bound later and those that could be associated with departing earlier. One participant did not favor the change to the forward guidance because, with inflation well below the Committee's 2 percent longer-run target, the announcement of a meeting-by-meeting approach to policy could lead to a tightening of financial conditions that would slow progress toward the Committee's objectives.

Participants expressed a range of views about how they would assess the outlook for inflation and when they might deem it appropriate to begin removing policy accommodation. It was noted that there were no simple criteria for such a judgment, and, in particular, that, in a context of progress toward maximum employment and reasonable confidence that inflation will move back to 2 percent over the medium term, the normalization process could be initiated prior to seeing increases in core price inflation or wage inflation. Further improvement in the labor market, a stabilization of energy prices, and a leveling out of the foreign exchange value of the dollar were all seen as helpful in establishing confidence that inflation would turn up. Several participants judged that the economic data and outlook were likely to warrant beginning normalization at the June meeting. However, others anticipated that the effects of energy price declines and the dollar's appreciation would continue to weigh on inflation in the near term, suggesting that conditions likely would not be appropriate to begin raising rates until later in the year, and a couple of participants suggested that the economic outlook likely would not call for liftoff until 2016. With regard to communications about the timing of the first increase in the target range for the federal funds rate, two participants thought that the Committee should seek to signal its policy intentions at the meeting before liftoff appeared likely, but two others judged that doing so would be inconsistent with a meeting-by-meeting approach. Finally, many participants commented that it would be desirable to provide additional information to the public about the Committee's strategy for policy after the beginning of normalization. Some participants emphasized that the stance of policy would remain highly accommodative even after the first increase in the target range for the federal funds rate, and several noted that they expected economic developments would call for a fairly gradual pace of normalization or that a data-dependent approach would not necessarily dictate increases in the target range at every meeting.

Committee Policy Action

In their discussion of monetary policy for the period ahead, members judged that information received since the FOMC met in January indicated that economic growth had moderated somewhat. Labor market conditions had improved further, with strong job gains and a lower unemployment rate; a variety of labor market indicators suggested that the underutilization of labor resources continued to diminish. Household spending was rising moderately, with declines in energy prices boosting household purchasing power. Business fixed investment was advancing, although the recovery in the housing sector remained slow and export growth had weakened. Inflation had declined further below the Committee's longer-run objective, largely reflecting the declines in energy prices. Market-based measures of inflation compensation remained low; survey-based measures of longer-term inflation expectations had been stable. The Committee expected that, with appropriate monetary policy accommodation, economic activity would expand at a moderate pace and labor market indicators would continue to move toward levels the Committee judges consistent with its dual mandate. The Committee also expected that inflation would remain near its recent low level in the near term but rise gradually toward 2 percent over the medium term as the labor market improves further and the transitory effects of energy price declines and other factors dissipate. In light of the uncertainties attending the outlook for inflation, the Committee agreed that it should continue to monitor inflation developments closely.

In their discussion of language for the postmeeting statement, the Committee agreed that the data

received over the intermeeting period suggested that economic growth had moderated somewhat. One factor behind that moderation was a slowdown in the growth of exports, and members decided that the statement should explicitly note that factor. In addition, data received over the intermeeting period indicated that inflation had declined, as the Committee had anticipated, and members agreed to update the statement to reflect their judgment that inflation was likely to remain near its recent low level in the near term. Members also judged that it was appropriate to note that market-based measures of inflation compensation remained near levels registered at the time of the January FOMC meeting.

The Committee agreed to maintain the target range for the federal funds rate at 0 to ¼ percent and to reaffirm in the statement that the Committee's decision about how long to maintain the current target range for the federal funds rate would depend on its assessment of actual and expected progress toward its objectives of maximum employment and 2 percent inflation. Members continued to judge that this assessment of progress would take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments. In light of the considerable progress to date toward the Committee's maximum-employment objective and the implications of that progress for the outlook for inflation, members agreed to remove from the forward guidance in the postmeeting statement the indication that the Committee judges that it can be patient in beginning to normalize the stance of monetary policy and to indicate instead that the Committee anticipates that it will be appropriate to raise the target range for the federal funds rate when it has seen further improvement in the labor market and is reasonably confident that inflation will move back to its 2 percent objective over the medium term. Members viewed the new guidance as consistent with the outlook for policy that the Committee had expressed in January, and they agreed that the postmeeting statement should note that an increase in the target range for the federal funds rate remained unlikely at the April FOMC meeting; in addition, they generally saw the new language as providing the Committee with the flexibility to begin raising the target range for the federal funds rate in June or at a subsequent meeting. Members noted that the timing of the first increase would depend on the evolution of economic conditions and the outlook, and that the change in the forward guidance was not intended to indicate that the Committee had decided on the timing of the initial increase in the target range for the federal funds rate.

The Committee also decided to maintain its policy of reinvesting principal payments from agency debt and agency mortgage-backed securities in agency mortgage-backed securities and of rolling over maturing Treasury securities at auction. This policy, by keeping the Committee's holdings of longer-term securities at sizable levels, should help maintain accommodative financial conditions. The Committee agreed to reiterate its expectation that, even after employment and inflation are near mandate-consistent levels, economic conditions may, for some time, warrant keeping the target federal funds rate below levels the Committee views as normal in the longer run.

At the conclusion of the discussion, the Committee voted to authorize and direct the Federal Reserve Bank of New York, until it was instructed otherwise, to execute transactions in the SOMA in accordance with the following domestic policy directive:

> "Consistent with its statutory mandate, the Federal Open Market Committee seeks monetary and financial conditions that will foster maximum employment and price stability. In particular, the Committee seeks conditions in reserve markets consistent with federal funds trading in a range from 0 to ¼ percent. The Committee directs the Desk to undertake open market operations as necessary to maintain such conditions. The Committee directs the Desk to maintain its policy of rolling over maturing Treasury securities into new issues and its policy of reinvesting principal payments on all agency debt and agency mortgage-backed securities in agency mortgage-backed securities. The Committee also directs the Desk to engage in dollar roll and coupon swap transactions as necessary to facilitate settlement of the Federal Reserve's agency mortgage-backed securities transactions. The System Open Market Account manager and the secretary will keep the Committee informed of ongoing developments regarding the System's balance sheet that could affect the attainment over time of the Committee's objectives of maximum employment and price stability."

The vote encompassed approval of the statement below to be released at 2:00 p.m.:

"Information received since the Federal Open Market Committee met in January suggests that economic growth has moderated somewhat. Labor market conditions have improved further, with strong job gains and a lower unemployment rate. A range of labor market indicators suggests that underutilization of labor resources continues to diminish. Household spending is rising moderately; declines in energy prices have boosted household purchasing power. Business fixed investment is advancing, while the recovery in the housing sector remains slow and export growth has weakened. Inflation has declined further below the Committee's longer-run objective, largely reflecting declines in energy prices. Market-based measures of inflation compensation remain low; survey-based measures of longer-term inflation expectations have remained stable.

Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee expects that, with appropriate policy accommodation, economic activity will expand at a moderate pace, with labor market indicators continuing to move toward levels the Committee judges consistent with its dual mandate. The Committee continues to see the risks to the outlook for economic activity and the labor market as nearly balanced. Inflation is anticipated to remain near its recent low level in the near term, but the Committee expects inflation to rise gradually toward 2 percent over the medium term as the labor market improves further and the transitory effects of energy price declines and other factors dissipate. The Committee continues to monitor inflation developments closely.

To support continued progress toward maximum employment and price stability, the Committee today reaffirmed its view that the current 0 to ¼ percent target range for the federal funds rate remains appropriate. In determining how long to maintain this target range, the Committee will assess progress—both realized and expected—toward its objectives of maximum employment and 2 percent inflation. This assessment will take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments. Consistent with its previous statement, the Committee judges that an increase in the target range for the federal funds rate remains unlikely at the April FOMC meeting. The Committee anticipates that it will be appropriate to raise the target range for the federal funds rate when it has seen further improvement in the labor market and is reasonably confident that inflation will move back to its 2 percent objective over the medium term. This change in the forward guidance does not indicate that the Committee has decided on the timing of the initial increase in the target range.

The Committee is maintaining its existing policy of reinvesting principal payments from its holdings of agency debt and agency mortgage-backed securities in agency mortgage-backed securities and of rolling over maturing Treasury securities at auction. This policy, by keeping the Committee's holdings of longer-term securities at sizable levels, should help maintain accommodative financial conditions.

When the Committee decides to begin to remove policy accommodation, it will take a balanced approach consistent with its longer-run goals of maximum employment and inflation of 2 percent. The Committee currently anticipates that, even after employment and inflation are near mandate-consistent levels, economic conditions may, for some time, warrant keeping the target federal funds rate below levels the Committee views as normal in the longer run."

Voting for this action: Janet L. Yellen, William C. Dudley, Lael Brainard, Charles L. Evans, Stanley Fischer, Jeffrey M. Lacker, Dennis P. Lockhart, Jerome H. Powell, Daniel K. Tarullo, and John C. Williams.

Voting against this action: None.

It was agreed that the next meeting of the Committee would be held on Tuesday–Wednesday, April 28–29, 2015. The meeting adjourned at 10:45 a.m. on March 18, 2015.

Notation Vote

By notation vote completed on February 17, 2015, the Committee unanimously approved the minutes of the Committee meeting held on January 27–28, 2015.

Thomas Laubach
Secretary

Addendum: Summary of Economic Projections

In conjunction with the Federal Open Market Committee (FOMC) meeting held on March 17–18, 2015, meeting participants submitted their projections of the most likely outcomes for real output growth, the unemployment rate, inflation, and the federal funds rate for each year from 2015 to 2017 and over the longer run.[5] Each participant's projection was based on information available at the time of the meeting plus his or her assessment of appropriate monetary policy and assumptions about the factors likely to affect economic outcomes. The longer-run projections represent each participant's assessment of the value to which each variable would be expected to converge, over time, under appropriate monetary policy and in the absence of further shocks to the economy. "Appropriate monetary policy" is defined as the future path of policy that each participant deems most likely to foster outcomes for economic activity and inflation that best satisfy his or her individual interpretation of the Federal Reserve's objectives of maximum employment and stable prices.

All FOMC participants but one expected that economic growth under appropriate policy would be somewhat faster in 2015 and in 2016 than their individual estimates of the U.S. economy's longer-run normal growth rate and at or near its longer-run rate in 2017 (table 1 and figure 1). Most participants projected that the unemployment rate would continue to decline in 2015 and 2016, and all participants projected that the unemployment rate would be at or below their individual judgments of its longer-run normal level by the end of 2017. Participants saw inflation, as measured by the four-quarter change in the price index for personal consumption expenditures (PCE), slowing this year but picking up notably next year; almost all of the participants projected that inflation would be at or close to the Committee's 2 percent longer-run objective in 2017.

As shown in figure 2, all but two participants anticipated that it would be appropriate to begin raising the target range for the federal funds rate in 2015.

[5] The president of the Federal Reserve Bank of Dallas did not participate in this FOMC meeting, and the incoming president of the Federal Reserve Bank of Philadelphia is scheduled to assume office on July 1. Helen E. Holcomb and Blake Prichard, First Vice Presidents of the Federal Reserve Banks of Dallas and Philadelphia, respectively, submitted economic projections.

Table 1. Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents, March 2015*
Percent

Variable	Central tendency[1]				Range[2]			
	2015	2016	2017	Longer run	2015	2016	2017	Longer run
Change in real GDP	2.3 to 2.7	2.3 to 2.7	2.0 to 2.4	2.0 to 2.3	2.1 to 3.1	2.2 to 3.0	1.8 to 2.5	1.8 to 2.5
December projection	2.6 to 3.0	2.5 to 3.0	2.3 to 2.5	2.0 to 2.3	2.1 to 3.2	2.1 to 3.0	2.0 to 2.7	1.8 to 2.7
Unemployment rate	5.0 to 5.2	4.9 to 5.1	4.8 to 5.1	5.0 to 5.2	4.8 to 5.3	4.5 to 5.2	4.8 to 5.5	4.9 to 5.8
December projection	5.2 to 5.3	5.0 to 5.2	4.9 to 5.3	5.2 to 5.5	5.0 to 5.5	4.9 to 5.4	4.7 to 5.7	5.0 to 5.8
PCE inflation	0.6 to 0.8	1.7 to 1.9	1.9 to 2.0	2.0	0.6 to 1.5	1.6 to 2.4	1.7 to 2.2	2.0
December projection	1.0 to 1.6	1.7 to 2.0	1.8 to 2.0	2.0	1.0 to 2.2	1.6 to 2.1	1.8 to 2.2	2.0
Core PCE inflation[3]	1.3 to 1.4	1.5 to 1.9	1.8 to 2.0		1.2 to 1.6	1.5 to 2.4	1.7 to 2.2	
December projection	1.5 to 1.8	1.7 to 2.0	1.8 to 2.0		1.5 to 2.2	1.6 to 2.1	1.8 to 2.2	

Note: Projections of change in real gross domestic product (GDP) and projections for both measures of inflation are from the fourth quarter of the previous year to the fourth quarter of the year indicated. PCE inflation and core PCE inflation are the percentage rates of change in, respectively, the price index for personal consumption expenditures (PCE) and the price index for PCE excluding food and energy. Projections for the unemployment rate are for the average civilian unemployment rate in the fourth quarter of the year indicated. Each participant's projections are based on his or her assessment of appropriate monetary policy. Longer-run projections represent each participant's assessment of the rate to which each variable would be expected to converge under appropriate monetary policy and in the absence of further shocks to the economy. The December projections were made in conjunction with the meeting of the Federal Open Market Committee on December 16–17, 2014.

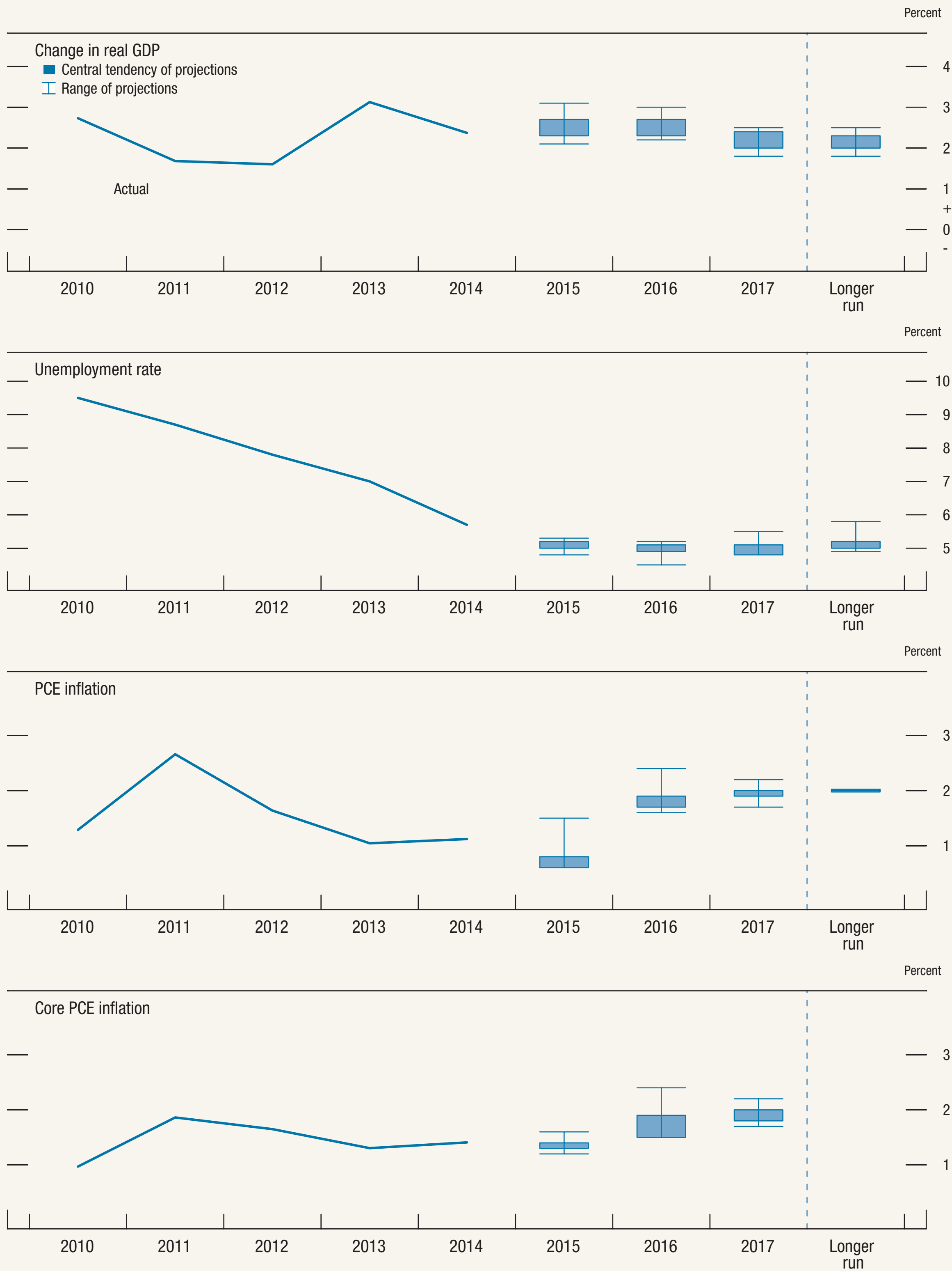
1 The central tendency excludes the three highest and three lowest projections for each variable in each year.

2 The range for a variable in a given year includes all participants' projections, from lowest to highest, for that variable in that year.

3 Longer-run projections for core PCE inflation are not collected.

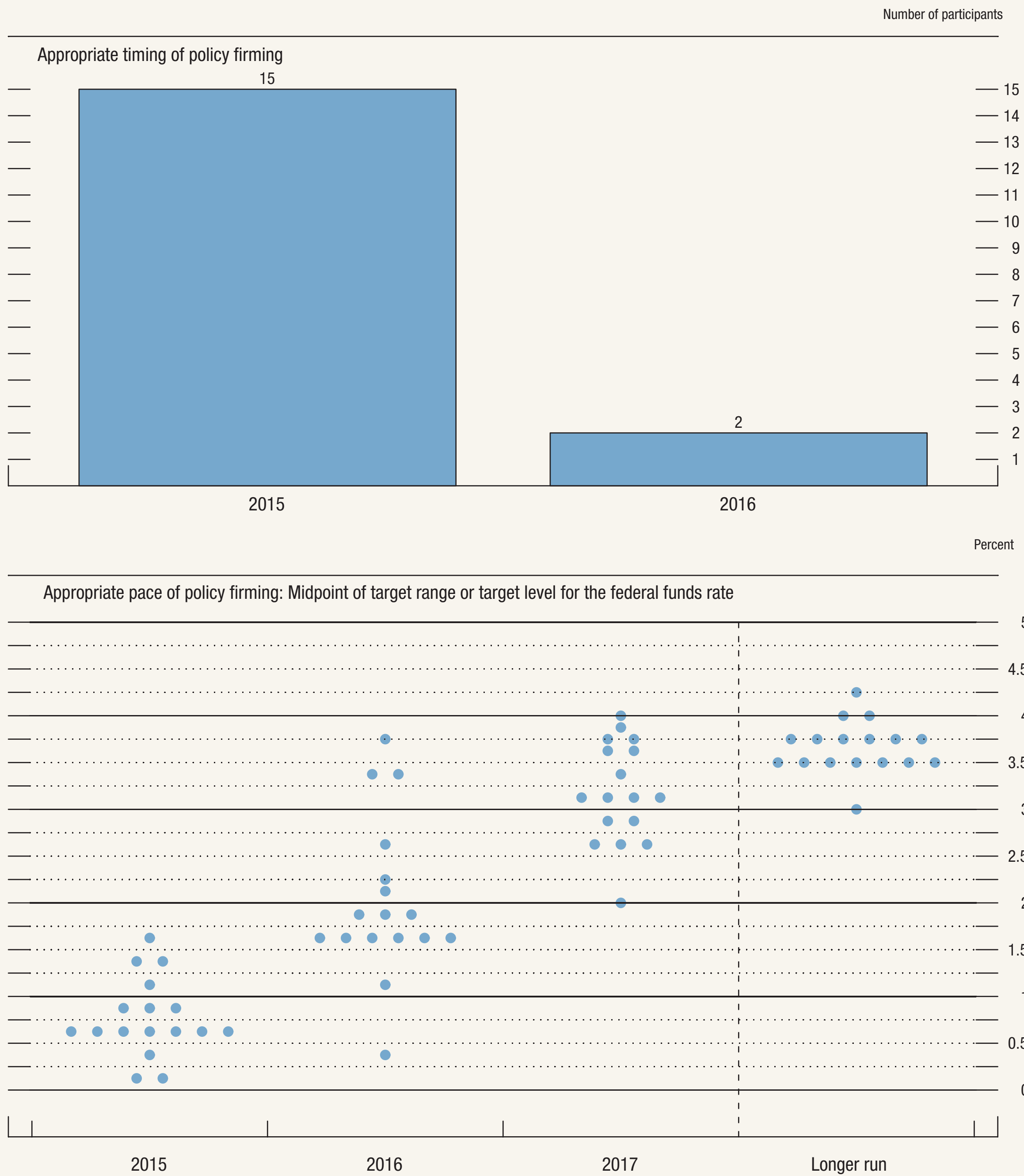
* The lower end of the central tendency for longer-run unemployment from the December projections was corrected on April 8, 2015. The error only affected the PDF version of the March Summary of Economic Projections.

Figure 1. Central tendencies and ranges of economic projections, 2015–17 and over the longer run



Note: Definitions of variables are in the general note to table 1. The data for the actual values of the variables are annual.

Figure 2. Overview of FOMC participants' assessments of appropriate monetary policy



Note: In the upper panel, the height of each bar denotes the number of FOMC participants who judge that, under appropriate monetary policy, the first increase in the target range for the federal funds rate from its current range of 0 to ¼ percent will occur in the specified calendar year. In December 2014, the numbers of FOMC participants who judged that the first increase in the target federal funds rate would occur in 2015, and 2016 were, respectively, 15, and 2. In the lower panel, each shaded circle indicates the value (rounded to the nearest ⅛ percentage point) of an individual participant's judgment of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate at the end of the specified calendar year or over the longer run.

Most expected that it would be appropriate to raise the target federal funds rate fairly gradually over the projection period as labor market conditions and inflation move toward values the Committee judges consistent with the attainment of its mandated objectives of maximum employment and stable prices. Most participants continued to expect that it would be appropriate for the federal funds rate to stay appreciably below its longer-run level after inflation and unemployment are near mandate-consistent levels, reflecting the effects of remaining headwinds holding back the recovery, along with other factors.

Most participants viewed the uncertainty associated with their outlooks for economic growth and the unemployment rate as broadly similar to the average level of the past 20 years. Most participants also judged the level of uncertainty about inflation to be broadly similar to the average level of the past 20 years, although several participants viewed it as higher. In addition, most participants continued to see the risks to the outlook for economic growth and for the unemployment rate as broadly balanced, though some viewed the risks to economic growth as weighted to the downside. Equal numbers of participants saw the risks to inflation as balanced or as weighted to the downside, while one judged these risks as tilted to the upside.

The Outlook for Economic Activity

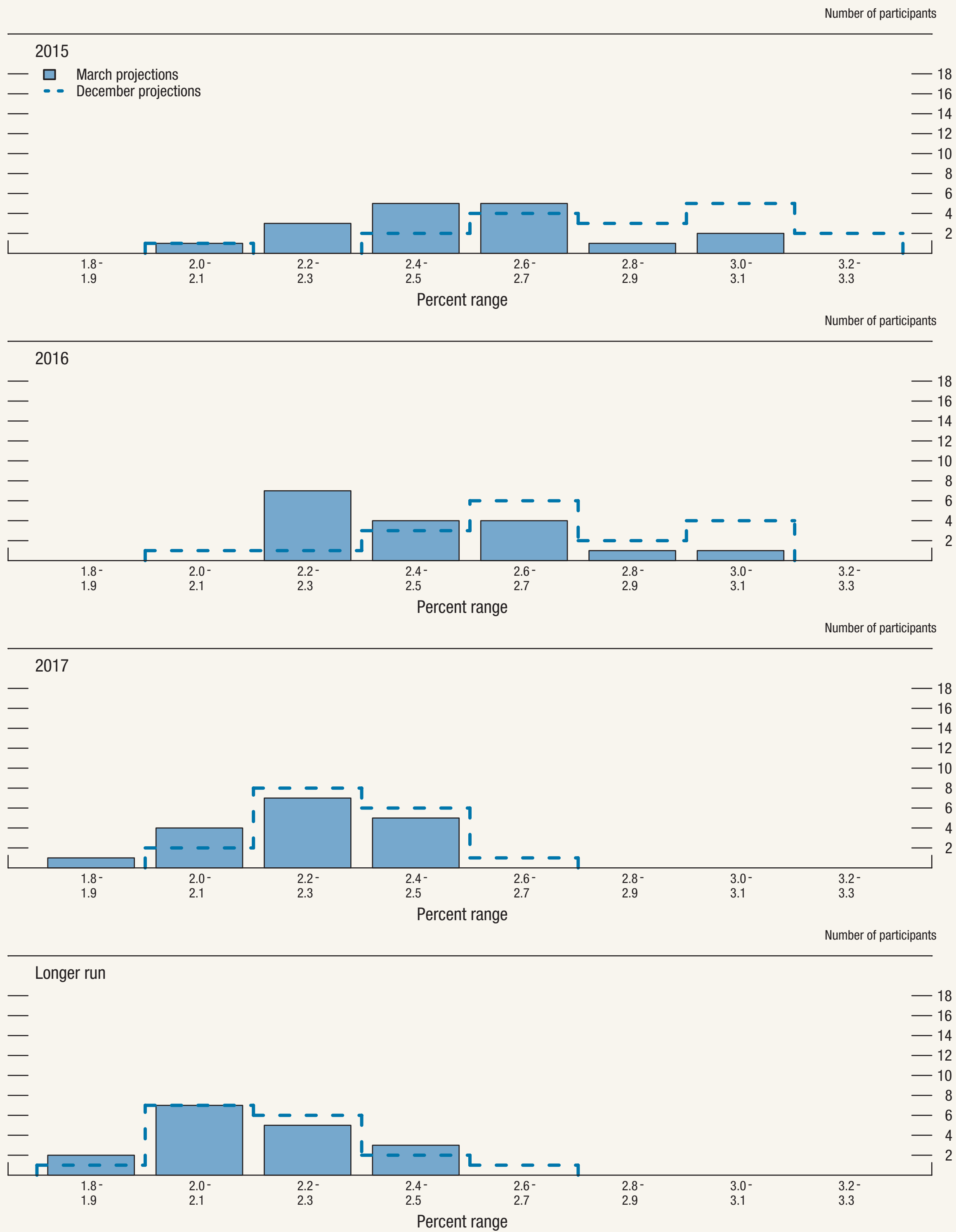
Participants generally projected that, conditional on their individual assumptions about appropriate monetary policy, real gross domestic product (GDP) would grow in 2015 and 2016 at a pace somewhat faster than their estimates of its longer-run normal rate and at or near its longer-run rate in 2017. Participants pointed to a number of factors that they expected would contribute to solid real output growth over the next few years, including improving labor market conditions, strengthened household and business balance sheets, the boost to consumer spending from low energy prices, diminishing restraint from fiscal policy, and still-accommodative monetary policy.

Compared with their Summary of Economic Projections (SEP) contributions in December, all but a couple of participants revised down their projections of real GDP growth over the forecast period. A number of participants cited the further appreciation of the dollar and recent weakness in spending and production data as reasons for their revision. The central tendencies of participants' current projections for real GDP growth were 2.3 to 2.7 percent in 2015 and in 2016, and 2.0 to 2.4 percent in 2017. The central tendency of the projections of real GDP growth over the longer run was 2.0 to 2.3 percent, unchanged from December.

Most participants projected that the unemployment rate would continue to decline through 2016, and all projected that by the fourth quarter of 2017 the unemployment rate would be at or below their individual judgments of its longer-run normal level. The central tendencies of participants' forecasts for the unemployment rate in the fourth quarter of each year were 5.0 to 5.2 percent in 2015, 4.9 to 5.1 percent in 2016, and 4.8 to 5.1 percent in 2017. Compared with the December SEP, participants' projected paths for the unemployment rate generally shifted down slightly through 2017. Many participants noted that recent data pointing to faster-than-expected improvement in labor market conditions were an important factor underlying the downward revisions to their unemployment rate forecasts. More than half of the participants revised down their estimates of the longer-run normal rate of unemployment; as a result, the central tendency of these estimates shifted down to 5.0 to 5.2 percent. Several participants noted that still-subdued wage and price inflation despite the stronger-than-expected momentum in the labor market suggested a lower level of the longer-run normal unemployment rate than they had thought previously, and a couple mentioned research indicating that demographic groups with lower average unemployment rates have accounted for an increasing fraction of the labor force.

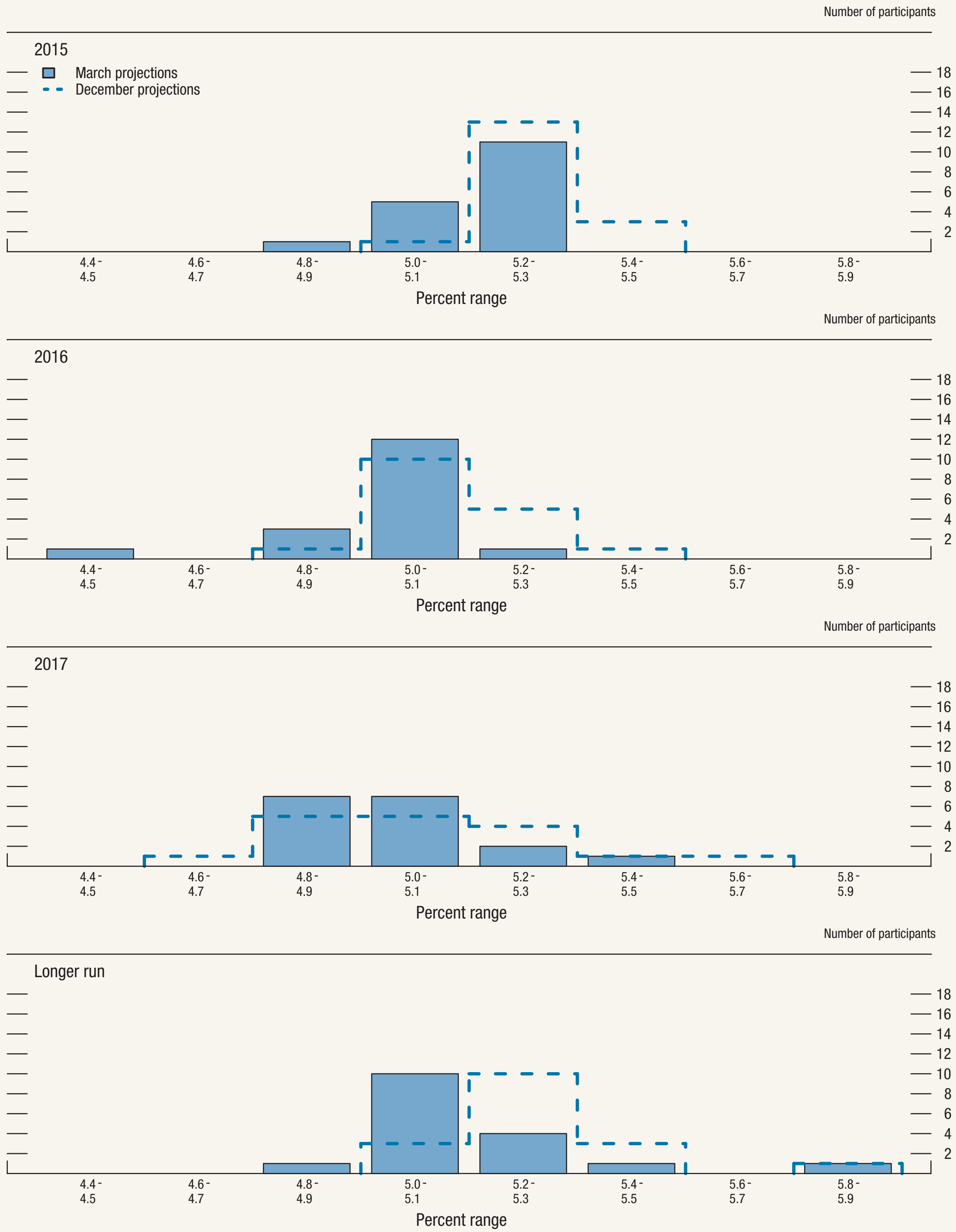
Figures 3.A and 3.B show the distribution of participants' views regarding the likely outcomes for real GDP growth and the unemployment rate through 2017. Some of the diversity of views reflected participants' individual assessments of the effects of lower oil prices on consumer spending and business investment, of the extent to which dollar appreciation would affect real activity, of the rate at which the forces that have been restraining the pace of the economic recovery would continue to abate, of the trajectory for growth in consumption as labor market slack diminishes, and of the appropriate path of monetary policy. Relative to the December SEP, the dispersion of participants' projections for real GDP growth was a bit narrower from 2015 through 2017, while for the unemployment rate, the dispersion was roughly unchanged.

Figure 3.A. Distribution of participants' projections for the change in real GDP, 2015–17 and over the longer run



Note: Definitions of variables are in the general note to table 1.

Figure 3.B. Distribution of participants' projections for the unemployment rate, 2015–17 and over the longer run



Note: Definitions of variables are in the general note to table 1.

The Outlook for Inflation

Compared with the December SEP, all participants marked down their projections for PCE inflation this year, noting that inflation had been running below their earlier projections and that significant declines in energy prices and import prices were putting temporary downward pressure on inflation. All participants saw PCE inflation picking up in 2016, and almost all saw inflation at or close to the Committee's 2 percent longer-run objective in 2017. All of the participants also marked down their projections for core PCE inflation this year, and nearly half revised down their projections for core PCE inflation in 2016 by 0.2 percentage point or more, with many noting that core inflation had run below their earlier projections in recent months and several citing declines in non-oil import prices and pass-through of declines in energy prices. Almost all expected core inflation to rise gradually over the projection period and to reach a level at or near 2 percent in 2017. The central tendencies for PCE inflation were 0.6 to 0.8 percent in 2015, 1.7 to 1.9 percent in 2016, and 1.9 to 2.0 percent in 2017, and the central tendencies for core PCE inflation were 1.3 to 1.4 percent in 2015, 1.5 to 1.9 percent in 2016, and 1.8 to 2.0 percent in 2017. Factors cited by participants as likely to contribute to a rise of inflation toward 2 percent included stable longer-term inflation expectations, steadily diminishing resource slack, a pickup in wage growth, the waning effects of declines in energy prices, and still-accommodative monetary policy.

Figures 3.C and 3.D provide information on the distribution of participants' views about the outlook for inflation. The range of participants' projections for PCE inflation in 2015 narrowed somewhat compared with December. The range for PCE inflation in 2016 widened slightly, likely reflecting in part differences in participants' assessments of the effects of the declines in energy and import prices on the outlook for inflation. Similarly, the ranges for core PCE inflation narrowed in 2015 and widened slightly in 2016. The range for both measures in 2017 was relatively little changed and continued to show a very substantial concentration near the Committee's 2 percent longer-run objective by that time.

Appropriate Monetary Policy

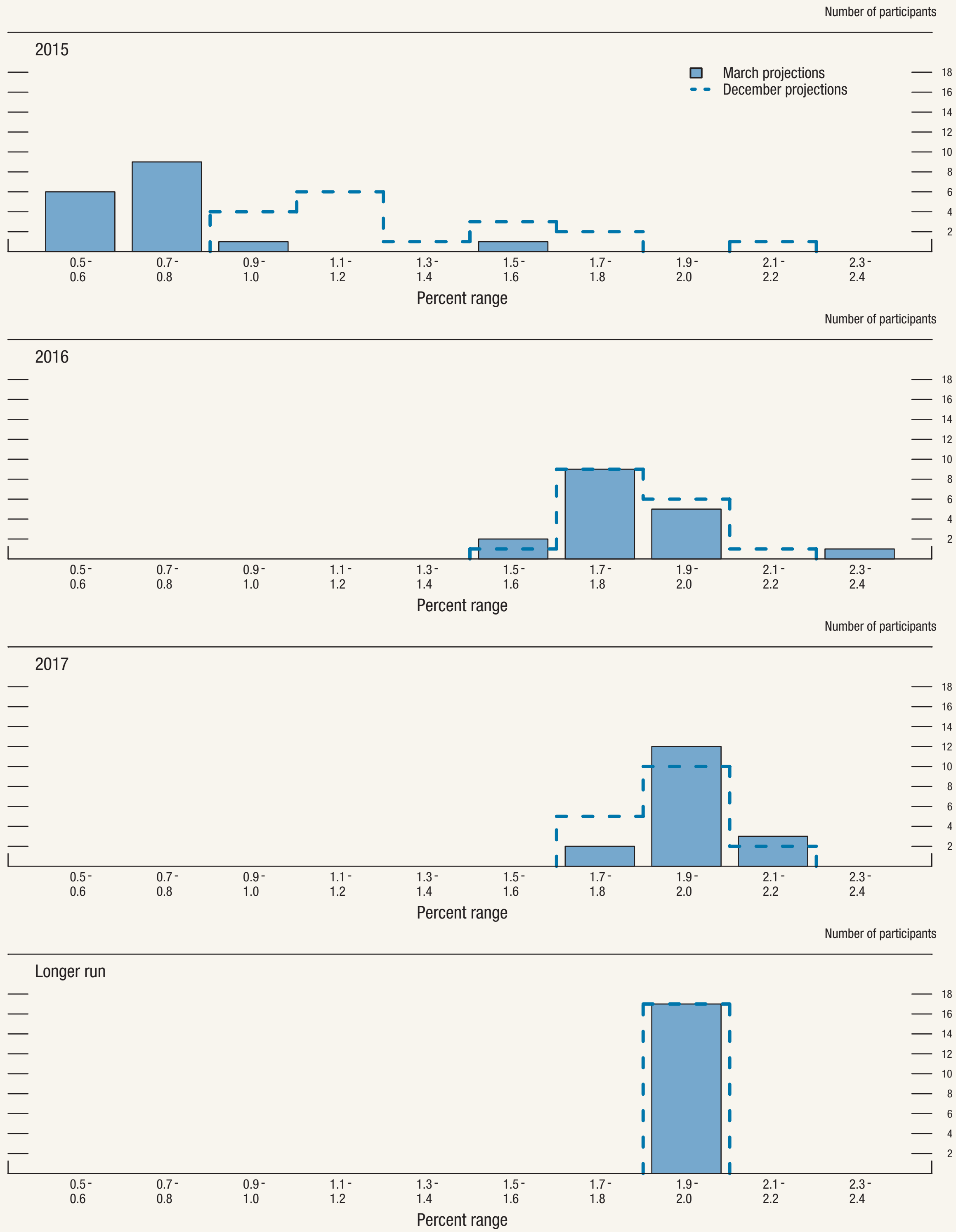
Participants judged that it would be appropriate to raise the target range for the federal funds rate over the projection period as labor market conditions and inflation move toward values the Committee judges consistent with the attainment of its mandated objectives of maximum employment and price stability. As shown in figure 2, all but two participants anticipated that it would be appropriate to begin raising the target range for the federal funds rate during 2015. However, a large majority projected that the appropriate level of the federal funds rate would remain below their individual estimates of its longer-run normal level through 2017.

Most participants projected that the unemployment rate would be at or somewhat above their estimates of its longer-run normal level at the end of the year in which they judged the initial increase in the target range for the federal funds rate would be warranted. Almost all participants projected that inflation would be below the Committee's 2 percent objective that year, but they also saw inflation rising substantially closer to 2 percent in the following year.

Figure 3.E provides the distribution of participants' judgments regarding the appropriate level of the target federal funds rate at the end of each calendar year from 2015 to 2017 and over the longer run. The median values of the federal funds rate at the end of 2015, 2016, and 2017 decreased 50, 62, and 50 basis points, respectively, relative to December, to 0.63, 1.88, and 3.13 percent, while the mean values for those years declined 35, 52, and 32 basis points, respectively, to 0.78, 2.03, and 3.19 percent. Compared with December, the dispersion of the projections for the appropriate level of the federal funds rate was a bit narrower over the projection period.

Most participants judged that it would be appropriate for the federal funds rate in 2017 to remain below its longer-run normal level, with nearly half of them projecting the federal funds rate in 2017 to be more than ½ percentage point lower than their estimates of its longer-run value. Participants provided a number of reasons why they thought it would be appropriate for the federal funds rate to remain below its longer-run normal level for some time after inflation and the unemployment rate were near mandate-consistent levels. These reasons included an assessment that the headwinds that have been holding back the recovery will continue to exert some restraint on economic activity at that time, that weak real activity abroad and the recent appreciation of the dollar are likely to continue to restrain U.S. net exports for some time, that residual slack in the labor market will still be evident in measures of labor utilization other than the unemployment rate, and that the risks to the economic outlook are asymmetric as a result of the con-

Figure 3.C. Distribution of participants' projections for PCE inflation, 2015–17 and over the longer run

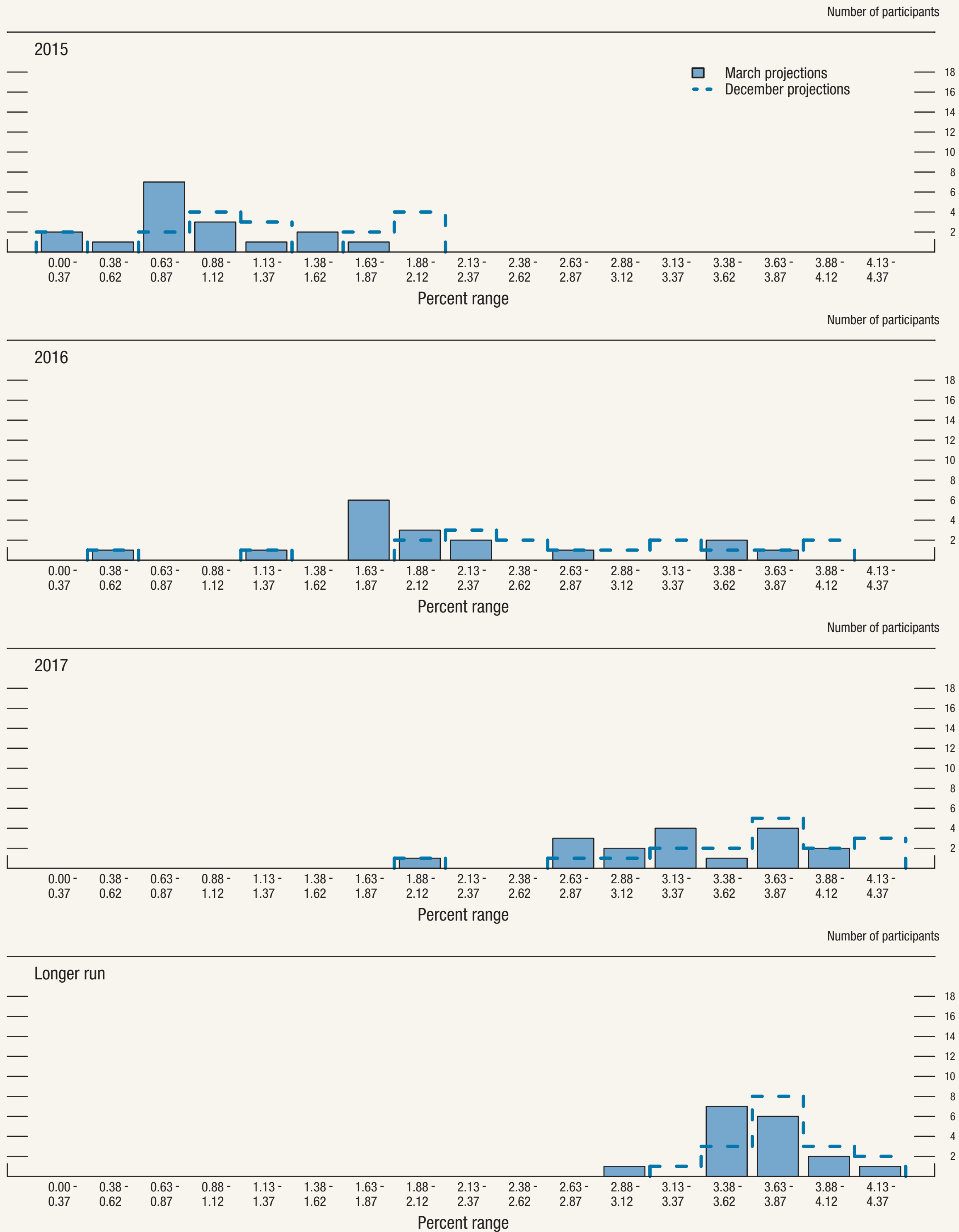


Note: Definitions of variables are in the general note to table 1.

Figure 3.D. Distribution of participants' projections for core PCE inflation, 2015–17

Note: Definitions of variables are in the general note to table 1.

Figure 3.E. Distribution of participants' judgments of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate, 2015–17 and over the longer run



Note: The midpoints of the target ranges for the federal funds rate and the target levels for the federal funds rate are measured at the end of the specified calendar year or over the longer run.

Table 2. Average historical projection error ranges
Percentage points

Variable	2015	2016	2017
Change in real GDP[1]	±1.6	±2.1	±2.0
Unemployment rate[1]	±0.5	±1.2	±1.7
Total consumer prices[2]	±0.9	±1.0	±1.0

Note: Error ranges shown are measured as plus or minus the root mean squared error of projections for 1995 through 2014 that were released in the winter by various private and government forecasters. As described in the box "Forecast Uncertainty," under certain assumptions, there is about a 70 percent probability that actual outcomes for real GDP, unemployment, and consumer prices will be in ranges implied by the average size of projection errors made in the past. For more information, see David Reifschneider and Peter Tulip (2007), "Gauging the Uncertainty of the Economic Outlook from Historical Forecasting Errors," Finance and Economics Discussion Series 2007-60 (Washington: Board of Governors of the Federal Reserve System, November), available at www.federalreserve.gov/pubs/feds/2007/200760/200760abs.html; and Board of Governors of the Federal Reserve System, Division of Research and Statistics (2014), "Updated Historical Forecast Errors," memorandum, April 9, www.federalreserve.gov/foia/files/20140409-historical-forecast-errors.pdf.

1 Definitions of variables are in the general note to table 1.

2 Measure is the overall consumer price index, the price measure that has been most widely used in government and private economic forecasts. Projection is percent change, fourth quarter of the previous year to the fourth quarter of the year indicated.

straints on monetary policy associated with the effective lower bound on the federal funds rate.

Relative to the December SEP, almost half of the participants revised down their estimates of the longer-run level of the federal funds rate, typically by ¼ percentage point, with a lower assessment of the economy's longer-run potential growth rate generally cited as a contributing factor for those revisions. Though the median estimate of the longer-run normal federal funds rate was unchanged from December, the central tendency narrowed to 3.5 to 3.75 percent from 3.5 to 4.0 percent in December, and the range moved down a bit to 3.0 to 4.25 percent from 3.25 to 4.25 percent in December. All participants judged that inflation in the longer run would be equal to the Committee's inflation objective of 2 percent, implying that their individual judgments regarding the appropriate longer-run level of the real federal funds rate in the absence of further shocks to the economy ranged from 1.0 to 2.25 percent.

Participants' views of the appropriate path for monetary policy were informed by their judgments about the state of the economy, including the values of the unemployment rate and other labor market indicators that would be consistent with maximum employment, the extent to which the economy was currently falling short of maximum employment, the prospects for inflation to return to the Committee's longer-term objective of 2 percent, the implications of international developments for the domestic economy, the desire to minimize potential disruptions in financial markets, and the balance of risks around the outlook. Some participants also mentioned the prescriptions of various monetary policy rules as factors they considered in judging the appropriate path for the federal funds rate.

Uncertainty and Risks

Nearly all participants continued to judge the levels of uncertainty attending their projections for real GDP growth and the unemployment rate as broadly similar to the norms during the previous 20 years (figure 4).[6] Most participants continued to see the risks to their outlooks for real GDP growth as broadly balanced, though some participants viewed the risks to real GDP growth as weighted to the downside. Those participants who viewed the risks as weighted to the downside cited, for example, concern about the limited ability of monetary policy at the effective lower bound to respond to further negative shocks to the economy or about the trajectory for economic growth abroad. Nearly all participants again judged the risks to the outlook for the unemployment rate to be broadly balanced.

As in the December SEP, participants generally agreed that the levels of uncertainty associated with their inflation forecasts were broadly similar to historical norms. Almost half of participants viewed the risks to their inflation forecast as balanced. However, the risks were seen as tilted to the downside by an equal number of participants, an increase since the December SEP. These participants cited the possibility that the recent low levels of inflation could prove more persistent than anticipated or that the upward pressure on prices from inflation expectations might be weaker than assumed, or the judgment that, in current circumstances, it would be difficult for the Committee to respond effectively to low-inflation outcomes. Conversely, one participant saw upside risks to inflation, citing uncertainty about the timing and efficacy of the Committee's withdrawal of monetary policy accommodation.

6 Table 2 provides estimates of the forecast uncertainty for the change in real GDP, the unemployment rate, and total consumer price inflation over the period from 1995 through 2014. At the end of this summary, the box "Forecast Uncertainty" discusses the sources and interpretation of uncertainty in the economic forecasts and explains the approach used to assess the uncertainty and risks attending the participants' projections.

Figure 4. Uncertainty and risks in economic projections

Note: For definitions of uncertainty and risks in economic projections, see the box "Forecast Uncertainty." Definitions of variables are in the general note to table 1.

Forecast Uncertainty

The economic projections provided by the members of the Board of Governors and the presidents of the Federal Reserve Banks inform discussions of monetary policy among policymakers and can aid public understanding of the basis for policy actions. Considerable uncertainty attends these projections, however. The economic and statistical models and relationships used to help produce economic forecasts are necessarily imperfect descriptions of the real world, and the future path of the economy can be affected by myriad unforeseen developments and events. Thus, in setting the stance of monetary policy, participants consider not only what appears to be the most likely economic outcome as embodied in their projections, but also the range of alternative possibilities, the likelihood of their occurring, and the potential costs to the economy should they occur.

Table 2 summarizes the average historical accuracy of a range of forecasts, including those reported in past *Monetary Policy Reports* and those prepared by the Federal Reserve Board's staff in advance of meetings of the Federal Open Market Committee. The projection error ranges shown in the table illustrate the considerable uncertainty associated with economic forecasts. For example, suppose a participant projects that real gross domestic product (GDP) and total consumer prices will rise steadily at annual rates of, respectively, 3 percent and 2 percent. If the uncertainty attending those projections is similar to that experienced in the past and the risks around the projections are broadly balanced, the numbers reported in table 2 would imply a probability of about 70 percent that actual GDP would expand within a range of 1.4 to 4.6 percent in the current year, 0.9 to 5.1 percent in the second year, and 1.0 to 5.0 percent in the third year. The corresponding 70 percent confidence intervals for overall inflation would be 1.1 to 2.9 percent in the current year and 1.0 to 3.0 percent in the second and third years.

Because current conditions may differ from those that prevailed, on average, over history, participants provide judgments as to whether the uncertainty attached to their projections of each variable is greater than, smaller than, or broadly similar to typical levels of forecast uncertainty in the past, as shown in table 2. Participants also provide judgments as to whether the risks to their projections are weighted to the upside, are weighted to the downside, or are broadly balanced. That is, participants judge whether each variable is more likely to be above or below their projections of the most likely outcome. These judgments about the uncertainty and the risks attending each participant's projections are distinct from the diversity of participants' views about the most likely outcomes. Forecast uncertainty is concerned with the risks associated with a particular projection rather than with divergences across a number of different projections.

As with real activity and inflation, the outlook for the future path of the federal funds rate is subject to considerable uncertainty. This uncertainty arises primarily because each participant's assessment of the appropriate stance of monetary policy depends importantly on the evolution of real activity and inflation over time. If economic conditions evolve in an unexpected manner, then assessments of the appropriate setting of the federal funds rate would change from that point forward.

Meeting Held on April 28–29, 2015

A meeting of the Federal Open Market Committee was held in the offices of the Board of Governors of the Federal Reserve System in Washington, D.C., on Tuesday, April 28, 2015, at 1:00 p.m. and continued on Wednesday, April 29, 2015, at 9:00 a.m.

Present

Janet L. Yellen
Chair

William C. Dudley
Vice Chairman

Lael Brainard

Charles L. Evans

Stanley Fischer

Jeffrey M. Lacker

Dennis P. Lockhart

Jerome H. Powell

Daniel K. Tarullo

John C. Williams

James Bullard, Christine Cumming, Esther L. George, Loretta J. Mester, and Eric Rosengren
Alternate Members of the Federal Open Market Committee

Narayana Kocherlakota
President of the Federal Reserve Bank of Minneapolis

Helen E. Holcomb and Blake Prichard
First Vice Presidents, Federal Reserve Banks of Dallas and Philadelphia, respectively

Thomas Laubach
Secretary and Economist

Matthew M. Luecke
Deputy Secretary

David W. Skidmore
Assistant Secretary

Michelle A. Smith
Assistant Secretary

Scott G. Alvarez
General Counsel

Steven B. Kamin
Economist

David W. Wilcox
Economist

David Altig, Thomas A. Connors, Eric M. Engen, Michael P. Leahy, and William Wascher
Associate Economists

Simon Potter
Manager, System Open Market Account

Lorie K. Logan
Deputy Manager, System Open Market Account

Robert deV. Frierson[1]
Secretary of the Board, Office of the Secretary, Board of Governors

Michael S. Gibson
Director, Division of Banking Supervision and Regulation, Board of Governors

Nellie Liang
Director, Office of Financial Stability Policy and Research, Board of Governors

James A. Clouse and Stephen A. Meyer
Deputy Directors, Division of Monetary Affairs, Board of Governors

William B. English
Senior Special Adviser to the Board, Office of Board Members, Board of Governors

Andrew Figura, David Reifschneider, and Stacey Tevlin
Special Advisers to the Board, Office of Board Members, Board of Governors

Trevor A. Reeve
Special Adviser to the Chair, Office of Board Members, Board of Governors

Linda Robertson
Assistant to the Board, Office of Board Members, Board of Governors

Michael T. Kiley
Senior Adviser, Division of Research and Statistics, and
Senior Associate Director, Office of Financial Stability Policy and Research, Board of Governors

Ellen E. Meade and Joyce K. Zickler
Senior Advisers, Division of Monetary Affairs, Board of Governors

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[1] Attended the joint session of the Federal Open Market Committee and the Board of Governors.

Jeremy B. Rudd
Senior Adviser, Division of Research and Statistics, Board of Governors

Joshua Gallin
Associate Director, Division of Research and Statistics, Board of Governors

Fabio M. Natalucci[2]
Associate Director, Division of Monetary Affairs, Board of Governors

Beth Anne Wilson
Associate Director, Division of International Finance, Board of Governors

Jane E. Ihrig[1] **and David López-Salido**
Deputy Associate Directors, Division of Monetary Affairs, Board of Governors

Edward Nelson
Assistant Director, Division of Monetary Affairs, Board of Governors

Burcu Duygan-Bump
Adviser, Division of Monetary Affairs, Board of Governors

Eric C. Engstrom
Adviser, Division of Research and Statistics, Board of Governors

Penelope A. Beattie[1]
Assistant to the Secretary, Office of the Secretary, Board of Governors

Dana L. Burnett
Section Chief, Division of Monetary Affairs, Board of Governors

Katie Ross[1]
Manager, Office of the Secretary, Board of Governors

Jonathan E. Goldberg
Economist, Division of Monetary Affairs, Board of Governors

James M. Lyon
First Vice President, Federal Reserve Bank of Minneapolis

James J. McAndrews
Executive Vice President, Federal Reserve Bank of New York

Troy Davig, Michael Dotsey, Evan F. Koenig, and Spencer Krane
Senior Vice Presidents, Federal Reserve Banks of Kansas City, Philadelphia, Dallas, and Chicago, respectively

Todd E. Clark, Sylvain Leduc, Giovanni Olivei, Douglas Tillett, and David C. Wheelock
Vice Presidents, Federal Reserve Banks of Cleveland, San Francisco, Boston, Chicago, and St. Louis, respectively

Kei-Mu Yi
Special Policy Advisor to the President, Federal Reserve Bank of Minneapolis

Matthew D. Raskin
Assistant Vice President, Federal Reserve Bank of New York

Andreas L. Hornstein
Senior Advisor, Federal Reserve Bank of Richmond

James M. Egelhof[1]
Markets Officer, Federal Reserve Bank of New York

Developments in Financial Markets and the Federal Reserve's Balance Sheet

In a joint session of the Federal Open Market Committee (FOMC) and the Board of Governors of the Federal Reserve System, the manager of the System Open Market Account (SOMA) reported on developments in domestic and foreign financial markets. The deputy manager followed with a review of System open market operations conducted during the period since the Committee met on March 17–18, 2015. The deputy manager also discussed the outcomes of continued testing of the Federal Reserve's term and overnight reverse repurchase agreement operations (term RRP operations and ON RRP operations, respectively). The Open Market Desk conducted two term RRP operations over the March quarter-end. The combination of term and ON RRP operations continued to provide a soft floor for money market rates over the intermeeting period, including around quarter-end. Based on experience around recent quarter-ends, the deputy manager discussed possible plans for June test RRP operations. The manager summarized ongoing staff work related to improved data collection for, and possible adjustments to, the calculation of the effective federal funds rate that were intended to provide a more robust measure of trading conditions in the federal funds market over time.

2 Attended the portion of the meeting following the joint session of the Federal Open Market Committee and the Board of Governors.

The Committee voted to renew the reciprocal currency arrangements with the Bank of Canada and the Bank of Mexico; these arrangements are associated with the Federal Reserve's participation in the North American Framework Agreement of 1994. In addition, the Committee voted to renew the dollar and foreign currency liquidity swap arrangements with the Bank of Canada, the Bank of England, the Bank of Japan, the European Central Bank, and the Swiss National Bank. The votes to renew the Federal Reserve's participation in these standing arrangements are taken annually at the April meeting. Mr. Lacker dissented on both votes because of his opposition, as indicated at the January meeting, to foreign exchange market intervention by the Federal Reserve, which such swap arrangements might facilitate, and because, in his view, such arrangements were best left to fiscal authorities.

By unanimous vote, the Committee ratified the Desk's domestic transactions over the intermeeting period. There were no intervention operations in foreign currencies for the System's account over the intermeeting period.

Normalization Procedures

The staff provided a briefing on issues related to the implementation of monetary policy during the period immediately following the first increase in the target range for the federal funds rate, when it becomes appropriate. In their subsequent discussion, participants agreed that the Committee's testing of normalization tools, in conjunction with its other planning, had created conditions under which policy normalization would likely proceed smoothly once it commences. Nonetheless, as part of prudent contingency planning, participants agreed to have the staff provide more frequent updates on financial market developments for a period after firming begins. Such updates would ensure that, if adjustments to policy normalization tools prove necessary to maintain appropriate control over money market rates, policymakers could make such changes in a timely manner. Participants also considered whether it might be appropriate, when the Committee first raises the target range for the federal funds rate, to increase the spread between the primary credit rate and the top of the federal funds rate target range. One participant argued for such a step in order to bring the spread up to a level closer to that prevailing prior to the financial crisis, but several participants favored maintaining the current spread at least until the process of policy normalization was well under way and policymakers had considered carefully the potential benefits and costs of such a change. In part, that view reflected concerns that an increase in the spread that coincided with the initial step in policy normalization could complicate communications regarding the Committee's policy intentions.

The Board meeting concluded at the end of the discussion of normalization procedures.

Staff Review of the Economic Situation

The information reviewed for the April 28–29 meeting indicated that real gross domestic product (GDP) only edged up in the first quarter, with growth likely held down, in part, by transitory factors. The pace of improvement in labor market conditions moderated somewhat, and the unemployment rate was unchanged over the intermeeting period. Consumer price inflation continued to run below the FOMC's longer-run objective of 2 percent, partly restrained by earlier declines in energy prices along with further decreases in non-energy import prices. Market-based measures of inflation compensation were still low, while survey measures of longer-run inflation expectations remained stable.

Payroll employment expanded at a solid pace in the first quarter, on average, but the gain in March was smaller than in earlier months. The unemployment rate remained at 5.5 percent in March, the labor force participation rate edged down, and the employment-to-population ratio was little changed. The share of workers employed part time for economic reasons was also little changed. In the private sector, the rate of job openings edged up in February and was well above its pre-recession level, while the rates of hiring and of quits were about flat and remained slightly above their levels of a year ago.

Industrial production fell in the first quarter, with another drop in the drilling of new oil and gas wells as well as a decrease in manufacturing output that appeared to reflect, in part, the effects of the labor dispute at West Coast ports. Automakers' assembly schedules suggested that light motor vehicle production would increase at a solid pace in the second quarter, but broader indicators of manufacturing activity, such as the readings on new orders from national and regional manufacturing surveys, pointed to only modest gains in factory output over the next several months.

Real personal consumption expenditures (PCE) increased in the first quarter, albeit at a much slower pace than in the fourth quarter of 2014. Light motor vehicle sales, as well as the components of nominal retail sales used by the Bureau of Economic Analysis (BEA) to construct its estimate of PCE, rebounded in March after declining in February, suggesting that unusually severe winter weather in February likely held down spending. Among the factors that influence household spending, real disposable income rose strongly, on net, in the first quarter, buoyed in part by earlier declines in energy prices. In addition, further gains in house values and equity prices likely raised households' net worth, and the index of consumer sentiment in the University of Michigan Surveys of Consumers remained near its highest level since prior to the most recent recession.

Residential investment increased at a slow pace in the first quarter, and other indicators of housing-sector activity remained weak. Starts and building permits for single-family homes decreased during the first quarter despite small gains in March; starts of multifamily units also declined during the first quarter. Sales of new homes were little changed, on average, over February and March, while existing home sales edged up on net.

Real private expenditures on business equipment and intellectual property products rose modestly in the first quarter, and forward-looking indicators—including data on orders and shipments of nondefense capital goods and the national and regional surveys of business conditions—were generally consistent with only small further gains in the near term. Real spending for nonresidential structures fell considerably in the first quarter, as outlays for drilling and mining structures dropped sharply and outlays for other structures declined.

Real government purchases moved down in the first quarter. Federal spending was flat. But construction expenditures by state and local governments contracted, while these governments' payrolls were unchanged.

The U.S. international trade deficit narrowed sharply in February, as imports fell more than exports. Imports of all major categories of goods moved lower as imports from several major trading partners—including Canada, China, Japan, and Korea—registered declines. Disruptions related to the West Coast port labor disputes likely contributed to the decline in imports in February. The reduction in exports was largest for durable goods and industrial supplies, with exports to Canada and China accounting for most of the drop. Despite the narrowing of the nominal trade deficit in February, the BEA estimated that real net exports were a substantial drag on the growth of real GDP in the first quarter.

Total U.S. consumer prices in the first quarter, as measured by the PCE price index, were only ¼ percent higher than a year earlier, importantly reflecting the decrease in consumer energy prices. The core PCE price index, which excludes food and energy prices, increased 1¼ percent over the same four-quarter period, partly restrained by the declines in prices of non-energy imported goods. The PCE price index in February and the consumer price index (CPI) in March rose at a faster pace than in previous months, as energy prices reversed a small part of their earlier declines. Survey-based measures of expected long-run inflation were stable, with the measure from the Desk's Survey of Primary Dealers unchanged and the Michigan survey measure down a little but still in the range seen over recent years. Market-based measures of inflation compensation at longer horizons increased somewhat but were still low. Over the 12 months ending in March, nominal average hourly earnings for all employees increased 2 percent, somewhat faster than the increase in core consumer prices over the same period.

Economic growth in both advanced foreign and emerging market economies appeared to slow, on balance, in the first quarter of 2015. Global trade and industrial production weakened. Among advanced economies, output growth declined in the United Kingdom and economic indicators for Canada and Japan also pointed to slower growth in the first quarter. In contrast, real GDP growth seemed to have increased in the euro area. In emerging market economies, real GDP growth slowed sharply in China and indicators of activity weakened in Mexico and Brazil, but real GDP growth picked up in some emerging Asian economies. Inflation remained low in most economies, partly as a result of earlier declines in oil prices.

Staff Review of the Financial Situation

Financial conditions eased, on balance, over the intermeeting period. Federal Reserve communications that were reportedly viewed as more accommodative than anticipated put downward pressure on interest rates. A number of weaker-than-expected U.S. economic data releases, including the March

employment report, also pushed interest rates lower. On net, measures of inflation compensation rose, equity prices increased somewhat, and the foreign exchange value of the dollar declined.

The expected path of the federal funds rate moved down following the March FOMC statement and the Chair's postmeeting press conference. Investors reportedly took note of changes in the Summary of Economic Projections, including downward revisions to FOMC participants' projections of the appropriate level of the federal funds rate at the end of 2015, 2016, and 2017. During the remainder of the intermeeting period, the expected policy rate path implied by financial market quotes shifted down further, in part because U.S. economic data were weaker, on net, than anticipated. Results from the Survey of Primary Dealers and Survey of Market Participants for April indicated that respondents saw the September 2015 meeting as the most likely time for the first increase in the target range for the federal funds rate; the probabilities attached to scenarios in which policy firming did not begin until after the July 2015 meeting were higher than the corresponding probabilities in the surveys conducted before the March meeting.

Over the intermeeting period, 5- and 10-year nominal Treasury yields decreased, but yields on Treasury Inflation-Protected Securities declined by a greater amount. Measures of inflation compensation over the next 5 years rose significantly, consistent with increases in oil prices and somewhat higher-than-expected February and March consumer price inflation data. Inflation compensation 5 to 10 years ahead also increased but remained at the lower end of its range over the past few years.

On balance, U.S. equity price indexes rose somewhat and option-implied volatility for the S&P 500 index over the next month declined. Energy firms' stock prices retraced a small portion of their substantial drop since mid-2014. Spreads of yields on 10-year speculative-grade corporate bonds over those on comparable-maturity Treasury securities narrowed, in part because of a further decrease in spreads on speculative-grade bonds issued by energy firms. About 40 percent of firms in the S&P 500 index had reported earnings for the first quarter, with those reports generally viewed as better than anticipated. Nonetheless, first-quarter earnings per share were expected to be lower than in the previous quarter.

Financing conditions for nonfinancial firms remained accommodative. Corporate bond issuance was strong in the first quarter, and seasoned equity offerings rose. Commercial and industrial loans on banks' books again expanded briskly. In the leveraged loan market, issuance of new money loans to institutional investors slowed in the first quarter but stayed robust, supported by continued strong issuance of collateralized loan obligations.

Financing for commercial real estate (CRE) remained broadly available. CRE loans on banks' books increased appreciably in the first quarter, consistent with stronger loan demand reported in the April Senior Loan Officer Opinion Survey on Bank Lending Practices (SLOOS). Issuance of commercial mortgage-backed securities continued to be robust.

Measures of residential mortgage lending conditions were generally little changed over the intermeeting period, and lending volumes remained light. In the April SLOOS, some large banks reported having eased lending standards for a number of categories of residential mortgage loans in the first quarter. House prices continued to rise moderately in February. Nonetheless, estimates of the share of mortgages in a negative equity position were little changed in recent quarters, and they remained elevated when judged against levels prevailing prior to the crisis.

Financing conditions in consumer credit markets stayed generally accommodative. Auto and student loan balances expanded robustly through February. Growth in credit card loans slowed a bit on a year-over-year basis, likely reflecting weaker retail activity.

The U.S. dollar depreciated during the intermeeting period, as U.S. macroeconomic data generally came in weaker than expected, and as market participants appeared to mark down somewhat their expectations for the path of the federal funds rate. Nonetheless, the cumulative appreciation of the dollar since mid-2014 remained substantial. Government bond yields in most advanced foreign economies declined modestly, pushing some yields, particularly in Europe, further into negative territory. By contrast, Greek sovereign yields stayed elevated as the difficult negotiations between Greece and its official creditors continued. Spillovers from Greek markets into other peripheral financial markets remained limited. Equity prices in most advanced foreign economies moved higher, buoyed in part by ongoing monetary policy accommodation. Equity prices also rose in most emerging market economies, with the stock market in China outperforming.

The staff provided its latest report on potential risks to financial stability. A number of factors appeared to limit the vulnerability of the U.S. financial system to adverse shocks. Leverage in the banking system remained relatively low, and increases in household debt stayed modest and continued to be associated primarily with borrowers with strong credit scores. However, some indicators suggested that valuations remained stretched for some asset classes. An estimate of the expected real return on equities moved down, reflecting an increase in stock prices and downward revisions to forecasts of corporate earnings, and corporate bond spreads declined somewhat. The staff also noted changes in the structure of some fixed-income markets that could increase volatility. In addition, the staff discussed the risks to financial stability associated with the possibility of substantial unanticipated changes in longer-term U.S. interest rates, including the scope for a sharp increase in such rates to affect financial conditions in emerging market economies. A number of other risks were noted, including geopolitical tensions and the potential for an increase in financial strains related to the negotiations between Greece and its official creditors.

Staff Economic Outlook

In the U.S. economic forecast prepared by the staff for the April FOMC meeting, real GDP growth in the first half of the year was lower than in the projection prepared for the March meeting, as the data on economic activity received during the intermeeting period were generally weaker than the staff had expected. However, much of this weakness was attributed to transitory factors or statistical noise, with little implication for the pace of expansion beyond the near term. Indeed, the medium-term projection for real GDP growth was revised up modestly, as monetary policy was assumed to be a little more accommodative in this projection and the projected path for the foreign exchange value of the dollar was a little lower. The staff continued to project that real GDP would expand at a faster pace than potential output in 2015 and 2016, supported by increases in consumer and business confidence and a small pickup in foreign economic growth, even as the normalization of monetary policy was assumed to begin. In 2017, real GDP growth was projected to slow toward, but to remain above, the rate of growth of potential output. The expansion in economic activity over the medium term was expected to lead to a gradual reduction in resource slack; the unemployment rate was projected to decline slowly and to move a little below the staff's estimate of its longer-run natural rate for a time.

The staff's forecast for inflation in the near term was revised up a little, reflecting the slightly higher-than-expected recent monthly data on core consumer prices and a path for crude oil prices that was a bit higher than in the previous projection. The medium-term forecast for inflation was little changed, with inflation in 2016 and 2017 projected to move closer to, but remain below, the Committee's longer-run objective of 2 percent, as energy prices were expected to rise, import prices to turn up, and resource utilization to tighten further. Thereafter, inflation was anticipated to move back to 2 percent, with inflation expectations in the longer run assumed to be consistent with the Committee's objective and slack in labor and product markets projected to have waned.

The staff viewed the uncertainty around its April projections for real GDP growth, the unemployment rate, and inflation as similar to the average of the past 20 years. The risks to the forecast for real GDP and inflation were seen as tilted to the downside, reflecting the staff's assessment that neither monetary nor fiscal policy appeared well positioned to help the economy withstand substantial adverse shocks. At the same time, the staff viewed the risks around its outlook for the unemployment rate as roughly balanced.

Participants' Views on Current Conditions and the Economic Outlook

In their discussion of the economic situation and the outlook, meeting participants regarded the information received over the intermeeting period as suggesting that economic growth had slowed during the winter months, in part reflecting transitory factors. The pace of job gains had moderated, and the unemployment rate had remained steady, with a range of labor market indicators suggesting that underutilization of labor resources was little changed. Most participants expected that, following the slowdown in the first quarter, real economic activity would resume expansion at a moderate pace, and that labor market conditions would improve further. Inflation continued to run below the Committee's longer-run objective, partly reflecting earlier declines in energy prices and decreasing prices of non-energy imports. Market-based measures of inflation compensation remained low, while survey-based measures of longer-term inflation expectations had remained stable. Participants generally anticipated that inflation would rise

gradually toward the Committee's 2 percent objective as the labor market improved further and the transitory effects of declines in energy prices and nonenergy import prices dissipated. Participants judged that recent domestic economic developments had increased uncertainty regarding the economic outlook. While participants continued to see potential downside risks resulting from foreign economic and financial developments, most still viewed the risks to the outlook for economic growth and the labor market as nearly balanced.

Participants generally agreed that data on private spending for the first quarter had been disappointing, with unexpectedly weak household expenditures and investment spending. Retail sales had continued to be tepid, although consumer sentiment stayed high and auto sales rebounded in March. The recovery in the housing sector remained slow. Business fixed investment softened, in part reflecting sizable reductions in capital expenditures in the energy sector. Exports contracted, likely reflecting the damping influence of the dollar's appreciation. In combination with a decline in government spending, the weakness of private spending had led to a substantial slowing in economic growth in the first quarter.

Participants discussed whether the weakness of spending in the first quarter primarily reflected temporary factors or instead suggested a longer-lasting loss of momentum for the economy. A number of reasons were advanced for believing that the weakness in spending observed during the first quarter was partly or even largely transitory. Most notably, the severe winter weather in some regions had reportedly weighed on economic activity, and the labor dispute at West Coast ports temporarily disrupted some supply chains. Furthermore, a pattern observed in previous years of the current expansion was that the first quarter of the year tended to have weaker seasonally adjusted readings on economic growth than did the subsequent quarters. This tendency supported the expectation that economic growth would return to a moderate pace over the rest of this year. Participants also pointed to other reasons for anticipating that the weakness seen in the first quarter would not endure. A number of the fundamental factors that drive consumer spending remained favorable, among them low interest rates, high consumer confidence, and rising household real income. In addition, business contacts in several parts of the country continued to be optimistic and expected sales, investment, and hiring to expand over the rest of the year. In the agricultural sector, drought effects had worsened in some parts of the country, but effects on production were limited and planting intentions remained strong. Finally, if the decline in oil prices and the rise in the foreign exchange value of the dollar did not continue, then their influence on the growth rate of investment and the change in net exports would likely recede.

Various reasons were also advanced for believing that some of the recent weakness in the pace of economic activity might persist. A number of participants suggested that the damping effects of the earlier appreciation of the dollar on net exports or of the earlier decline in oil prices on firms' investment spending might be larger and longer-lasting than previously anticipated. In addition, the expected boost to household spending from lower energy prices had apparently so far not materialized, highlighting the possibility of less underlying momentum in consumer expenditures than participants had previously judged. Some participants expressed particular concern about this prospect, as their expectations of a moderate expansion of economic activity in the medium term, combined with further improvements in labor market conditions, rested largely on a scenario in which consumer spending grows robustly despite softness in other components of aggregate demand. Participants discussed downside risks to economic growth, and a few indicated that, in their assessment, such risks had risen since the March meeting. However, most participants continued to see the risks to the outlook for economic growth and the labor market as nearly balanced.

In their discussion of the foreign economic outlook, several participants noted that the foreign exchange value of the U.S. dollar had fallen back somewhat over the intermeeting period. Nonetheless, the value of the dollar had increased significantly since the middle of last year, and it was seen as likely to continue to be a factor restraining U.S. net exports and economic growth for a time. It was suggested that one element underpinning the strength of the U.S. dollar was the increasing prevalence of negative interest rates on sovereign debt in some key European economies. Participants also pointed to a number of risks to the international economic outlook, including the slowdown in growth in China and fiscal and financial problems in Greece.

Many participants judged that the pace of improvement in labor market conditions had slowed. The March increase in payrolls had been smaller than expected, and the unemployment rate had remained

steady. However, it was noted that the intermeeting period had also witnessed some more-positive news on labor market conditions, including a further increase in the rate of job openings. Various business contacts in energy-related sectors reported layoffs in response to low oil prices, but some information received from business contacts suggested a tightening in labor markets, with shortages of skilled labor reported in some areas and sectors; there had also been an increase in transitions of workers to better-paying jobs. Larger wage gains were also reported in some regions, although in other parts of the country wage pressures reportedly remained muted. One participant suggested that a significant rise in aggregate nominal wage growth should be a criterion in assessing the Committee's degree of confidence regarding the return of inflation to the Committee's 2 percent longer-run objective. However, a couple of other participants argued that the behavior of nominal wage growth should not play a significant role in that assessment, on the grounds that there was only a loose relationship between nominal wage growth and inflation in the United States.

Many participants noted that measures of inflation averaged over several months or more continued to run below the Committee's longer-run objective. However, this shortfall partly reflected the earlier declines in energy prices and decreasing prices of non-energy imports, and some participants pointed out that, by some measures, the most recent monthly inflation readings had firmed a bit. Although participants expected that inflation would continue, in the near term, to be below the Committee's 2 percent longer-run objective, energy prices were no longer declining and most participants continued to expect that inflation would move up toward the Committee's 2 percent objective over the medium term as the effects of the transitory factors waned and conditions in the labor market and the overall economy improved further. Survey-based measures of inflation expectations had remained broadly stable. Market-based measures of inflation compensation had risen slightly but remained low. One participant suggested that, in the past, market-based measures of inflation compensation had been of little value in predicting inflation one to two years ahead, and that measures of inflation expectations from surveys of professional forecasters were more useful for forecasting inflation. Another participant argued that low values for market-based measures of inflation compensation should concern policymakers, on the grounds that these low values reflected investors placing at least some likelihood on adverse outcomes in which low inflation was accompanied by weak economic activity.

In their discussion of financial market developments and financial stability issues, policymakers highlighted possible risks related to the low level of term premiums. Some participants noted the possibility that, at the time when the Committee decides to begin policy firming, term premiums could rise sharply—in a manner similar to the increase observed in the spring and summer of 2013—which might drive longer-term interest rates higher. In this connection, it was suggested that the tendency for bond prices to exhibit volatility may be greater than it had been in the past, in view of the increased role of high-frequency traders, decreased inventories of bonds held by broker-dealers, and elevated assets of bond funds. A couple of participants underscored the need for a better understanding of the structure of the bond market in the current environment, including the effect on bond market behavior of regulatory changes. Some participants noted that careful Committee communications regarding its policy intentions could help damp any resulting increase in market volatility around the time of the commencement of normalization. It was also noted that financial stability and the Committee's macroeconomic goals were likely to be complementary objectives, but different views were expressed about the potential implications for financial stability of monetary policy tightening in current economic conditions.

In their discussion of communications regarding the path of the federal funds rate over the medium term, participants expressed a range of views about when economic conditions were likely to warrant an increase in the target range for the federal funds rate. Participants continued to judge that it would be appropriate to raise the target range for the federal funds rate when they had seen further improvement in the labor market and were reasonably confident that inflation would move back to its 2 percent objective over the medium term. Although participants expressed different views about the likely timing and pace of policy firming, they agreed that the Committee's decision to begin firming would appropriately depend on the incoming data and their implications for the economic outlook. A few anticipated that the information that would accrue by the time of the June meeting would likely indicate sufficient improvement in the economic outlook to lead the Committee to judge that its conditions for beginning policy firming had been met. Many participants, however,

thought it unlikely that the data available in June would provide sufficient confirmation that the conditions for raising the target range for the federal funds rate had been satisfied, although they generally did not rule out this possibility. Participants discussed the merits of providing an explicit indication, in postmeeting statements released prior to the commencement of policy firming, that the target range for the federal funds rate would likely be raised in the near term. However, most participants felt that the timing of the first increase in the target range for the federal funds rate would appropriately be determined on a meeting-by-meeting basis and would depend on the evolution of economic conditions and the outlook. In keeping with this data-dependent approach, some participants further suggested that the postmeeting statement's description of the economic situation and outlook, and of progress toward the Committee's goals, provided the appropriate means by which the Committee could help the public assess the likely timing of the initial increase in the target range for the federal funds rate.

During their discussion of economic conditions and monetary policy, participants also commented on different concepts of the equilibrium real federal funds rate—that is, a reference value of the inflation-adjusted federal funds rate consistent with the economy achieving, over a specified time horizon, maximum employment and price stability. Estimates of such equilibrium real interest rates were highly uncertain, but some participants reported that their estimates were currently unusually low by historical standards, reflecting, for example, factors weighing persistently on aggregate demand. In light of their low estimates, a few of these participants questioned whether the Committee was providing sufficient accommodation at the present time and cautioned against initiating policy firming in the near future. However, other participants cited factors, including the current low level of term premiums, that might cast doubt on the notion that the equilibrium real federal funds rate was particularly low. Some participants observed that more discussion of this topic was likely to be helpful in assessing these issues. One participant suggested that, in part because of the evidence that the equilibrium real interest rate was low by historical standards, the Committee should discuss the possibility of increasing its longer-run inflation objective. This participant and a few others thought such a discussion could be useful but emphasized that any decision to change the Committee's longer-run goals and policy strategy should not be made lightly. One of these participants noted, in particular, that a decision to raise the Committee's longer-run inflation objective might work against the achievement of maximum employment and price stability because such a change could undermine the Committee's credibility and, in addition, lead to adverse changes in inflation dynamics that could pose significant challenges for policymakers.

Committee Policy Action

In their discussion of monetary policy for the period ahead, members judged that information received since the FOMC met in March suggested that economic growth slowed during the winter months, in part reflecting transitory factors. The pace of job gains moderated, and the unemployment rate remained steady. A range of labor market indicators suggested that underutilization of labor resources was little changed. Although growth in household spending declined, households' real incomes rose strongly, partly reflecting earlier declines in energy prices, and consumer sentiment remained high. Business fixed investment softened, the recovery in the housing sector remained slow, and exports declined. Inflation continued to run below the Committee's longer-run objective, but this partly reflected earlier declines in energy prices and decreasing prices of non-energy imports. Market-based measures of inflation compensation remained low, while survey-based measures of longer-term inflation expectations had remained stable. Despite the slower growth in output and employment observed of late, members continued to expect that, with appropriate policy accommodation, economic activity would expand at a moderate pace, with labor market indicators continuing to move toward levels the Committee judged consistent with its dual mandate. Members generally continued to see the risks to the outlook for economic activity and the labor market as nearly balanced. Inflation was anticipated to remain near its recent low level in the near term, but members expected inflation to rise gradually toward 2 percent over the medium term as further improvement in the labor market occurred and the transitory effects of declines in energy and import prices dissipated. In light of the uncertainties associated with the outlook for inflation, the Committee agreed that it would continue to monitor inflation developments closely.

In their discussion of language for the postmeeting statement, members agreed that the wording should reflect their assessment that economic conditions had progressed to a stage at which the Committee's decision to begin normalizing policy would appropriately

be determined on a meeting-by-meeting basis. The Committee agreed that the statement should indicate that the data received over the intermeeting period suggested that economic growth had slowed and to note that this partly reflected transitory factors. The Committee also agreed to change the statement's characterization of the labor market data to note that the pace of job growth slowed over the intermeeting period and that a number of labor market indicators suggested that there was little change in underutilization of labor resources, and to update the statement's description of investment and export behavior in light of the recent weaker readings. In addition, members agreed to modify the discussion of inflation developments to indicate that inflation, although no longer declining, was still below the Committee's longer-term objective and was likely to remain so in the near term, partly because of transitory factors such as earlier declines in energy prices and decreasing prices of non-energy imports. The Committee altered its characterization of the economic outlook to indicate that, while economic growth slowed in the first quarter, the Committee continued to expect that, with appropriate policy accommodation, economic activity would expand at a moderate pace, and that it anticipated that labor market indicators would resume their movement toward levels that the Committee judged consistent with its dual mandate. With respect to the outlook for inflation, members expected inflation to rise gradually toward 2 percent over the medium term as the labor market improves further and the transitory effects of declines in energy and import prices dissipate.

The Committee agreed to maintain the target range for the federal funds rate at 0 to ¼ percent and to reaffirm in the statement that the Committee's decision about how long to maintain the current target range for the federal funds rate would depend on its assessment of actual and expected progress toward its objectives of maximum employment and 2 percent inflation. Members continued to judge that this assessment of progress would take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments. Members agreed to retain the indication that the Committee anticipates that it will be appropriate to raise the target range for the federal funds rate when it has seen further improvement in the labor market and is reasonably confident that inflation will move back to its 2 percent objective over the medium term.

The Committee also decided to maintain its policy of reinvesting principal payments from agency debt and agency mortgage-backed securities in agency mortgage-backed securities and of rolling over maturing Treasury securities at auction. This policy, by keeping the Committee's holdings of longer-term securities at sizable levels, should help maintain accommodative financial conditions. The Committee agreed to reiterate its expectation that, even after employment and inflation are near mandate-consistent levels, economic conditions may, for some time, warrant keeping the target federal funds rate below levels the Committee views as normal in the longer run.

At the conclusion of the discussion, the Committee voted to authorize and direct the Federal Reserve Bank of New York, until it was instructed otherwise, to execute transactions in the SOMA in accordance with the following domestic policy directive:

> "Consistent with its statutory mandate, the Federal Open Market Committee seeks monetary and financial conditions that will foster maximum employment and price stability. In particular, the Committee seeks conditions in reserve markets consistent with federal funds trading in a range from 0 to ¼ percent. The Committee directs the Desk to undertake open market operations as necessary to maintain such conditions. The Committee directs the Desk to maintain its policy of rolling over maturing Treasury securities into new issues and its policy of reinvesting principal payments on all agency debt and agency mortgage-backed securities in agency mortgage-backed securities. The Committee also directs the Desk to engage in dollar roll and coupon swap transactions as necessary to facilitate settlement of the Federal Reserve's agency mortgage-backed securities transactions. The System Open Market Account manager and the secretary will keep the Committee informed of ongoing developments regarding the System's balance sheet that could affect the attainment over time of the Committee's objectives of maximum employment and price stability."

The vote encompassed approval of the statement below to be released at 2:00 p.m.:

> "Information received since the Federal Open Market Committee met in March suggests that economic growth slowed during the winter months, in part reflecting transitory factors. The

pace of job gains moderated, and the unemployment rate remained steady. A range of labor market indicators suggests that underutilization of labor resources was little changed. Growth in household spending declined; households' real incomes rose strongly, partly reflecting earlier declines in energy prices, and consumer sentiment remains high. Business fixed investment softened, the recovery in the housing sector remained slow, and exports declined. Inflation continued to run below the Committee's longer-run objective, partly reflecting earlier declines in energy prices and decreasing prices of non-energy imports. Market-based measures of inflation compensation remain low; survey-based measures of longer-term inflation expectations have remained stable.

Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. Although growth in output and employment slowed during the first quarter, the Committee continues to expect that, with appropriate policy accommodation, economic activity will expand at a moderate pace, with labor market indicators continuing to move toward levels the Committee judges consistent with its dual mandate. The Committee continues to see the risks to the outlook for economic activity and the labor market as nearly balanced. Inflation is anticipated to remain near its recent low level in the near term, but the Committee expects inflation to rise gradually toward 2 percent over the medium term as the labor market improves further and the transitory effects of declines in energy and import prices dissipate. The Committee continues to monitor inflation developments closely.

To support continued progress toward maximum employment and price stability, the Committee today reaffirmed its view that the current 0 to ¼ percent target range for the federal funds rate remains appropriate. In determining how long to maintain this target range, the Committee will assess progress—both realized and expected—toward its objectives of maximum employment and 2 percent inflation. This assessment will take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments. The Committee anticipates that it will be appropriate to raise the target range for the federal funds rate when it has seen further improvement in the labor market and is reasonably confident that inflation will move back to its 2 percent objective over the medium term.

The Committee is maintaining its existing policy of reinvesting principal payments from its holdings of agency debt and agency mortgage-backed securities in agency mortgage-backed securities and of rolling over maturing Treasury securities at auction. This policy, by keeping the Committee's holdings of longer-term securities at sizable levels, should help maintain accommodative financial conditions.

When the Committee decides to begin to remove policy accommodation, it will take a balanced approach consistent with its longer-run goals of maximum employment and inflation of 2 percent. The Committee currently anticipates that, even after employment and inflation are near mandate-consistent levels, economic conditions may, for some time, warrant keeping the target federal funds rate below levels the Committee views as normal in the longer run."

Voting for this action: Janet L. Yellen, William C. Dudley, Lael Brainard, Charles L. Evans, Stanley Fischer, Jeffrey M. Lacker, Dennis P. Lockhart, Jerome H. Powell, Daniel K. Tarullo, and John C. Williams.

Voting against this action: None.

It was agreed that the next meeting of the Committee would be held on Tuesday–Wednesday, June 16–17, 2015. The meeting adjourned at 11:00 a.m. on April 29, 2015.

Notation Vote

By notation vote completed on April 7, 2015, the Committee unanimously approved the minutes of the Committee meeting held on March 17–18, 2015.

Thomas Laubach
Secretary

Meeting Held on June 16–17, 2015

A meeting of the Federal Open Market Committee was held in the offices of the Board of Governors of the Federal Reserve System in Washington, D.C., on Tuesday, June 16, 2015, at 1:00 p.m. and continued on Wednesday, June 17, 2015, at 9:00 a.m.

Present

Janet L. Yellen
Chair

William C. Dudley
Vice Chairman

Lael Brainard

Charles L. Evans

Stanley Fischer

Jeffrey M. Lacker

Dennis P. Lockhart

Jerome H. Powell

Daniel K. Tarullo

John C. Williams

James Bullard, Esther L. George, Loretta J. Mester, and Eric Rosengren
Alternate Members of the Federal Open Market Committee

Narayana Kocherlakota
President of the Federal Reserve Bank of Minneapolis

Helen E. Holcomb and Blake Prichard
First Vice Presidents, Federal Reserve Banks of Dallas and Philadelphia, respectively

Brian F. Madigan
Secretary

Matthew M. Luecke
Deputy Secretary

David W. Skidmore
Assistant Secretary

Michelle A. Smith
Assistant Secretary

Scott G. Alvarez
General Counsel

Thomas C. Baxter
Deputy General Counsel

Steven B. Kamin
Economist

Thomas Laubach
Economist

David W. Wilcox
Economist

David Altig, Eric M. Engen,[1] Michael P. Leahy, Jonathan P. McCarthy, William R. Nelson, Glenn D. Rudebusch, and William Wascher
Associate Economists

Simon Potter
Manager, System Open Market Account

Lorie K. Logan
Deputy Manager, System Open Market Account

Robert deV. Frierson[2]
Secretary of the Board, Office of the Secretary, Board of Governors

Michael S. Gibson
Director, Division of Banking Supervision and Regulation, Board of Governors

James A. Clouse and Stephen A. Meyer
Deputy Directors, Division of Monetary Affairs, Board of Governors

Daniel M. Covitz
Deputy Director, Division of Research and Statistics, Board of Governors

Andreas Lehnert
Deputy Director, Office of Financial Stability Policy and Research, Board of Governors

William B. English
Senior Special Adviser to the Board, Office of Board Members, Board of Governors

David Bowman, Andrew Figura, David Reifschneider, and Stacey Tevlin
Special Advisers to the Board, Office of Board Members, Board of Governors

Trevor A. Reeve
Special Adviser to the Chair, Office of Board Members, Board of Governors

Linda Robertson
Assistant to the Board, Office of Board Members, Board of Governors

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[1] Attended Wednesday's session only.

[2] Attended the joint session of the Federal Open Market Committee and the Board of Governors.

Christopher J. Erceg and Beth Anne Wilson
Senior Associate Directors, Division of International Finance, Board of Governors

David E. Lebow and Michael G. Palumbo
Senior Associate Directors, Division of Research and Statistics, Board of Governors

Ellen E. Meade and Joyce K. Zickler
Senior Advisers, Division of Monetary Affairs, Board of Governors

Gretchen C. Weinbach
Associate Director, Division of Monetary Affairs, Board of Governors

Jane E. Ihrig
Deputy Associate Director, Division of Monetary Affairs, Board of Governors

Glenn Follette and Paul A. Smith
Assistant Directors, Division of Research and Statistics, Board of Governors

Robert J. Tetlow
Adviser, Division of Monetary Affairs, Board of Governors

Penelope A. Beattie[2]
Assistant to the Secretary, Office of the Secretary, Board of Governors

Katie Ross[2]
Manager, Office of the Secretary, Board of Governors

David H. Small
Project Manager, Division of Monetary Affairs, Board of Governors

Stephen Lin
Senior Economist, Division of International Finance, Board of Governors

Deborah J. Lindner
Senior Economist, Division of Research and Statistics, Board of Governors

Benjamin K. Johannsen, Marcel A. Priebsch, and Francisco Vazquez-Grande[3]
Economists, Division of Monetary Affairs, Board of Governors

Randall A. Williams
Information Management Analyst, Division of Monetary Affairs, Board of Governors

Mark A. Gould
First Vice President, Federal Reserve Bank of San Francisco

Michael Strine
Executive Vice President, Federal Reserve Bank of New York

Kartik B. Athreya, Evan F. Koenig, Susan McLaughlin,[3] **Samuel Schulhofer-Wohl, Ellis W. Tallman, Geoffrey Tootell, and Christopher J. Waller**
Senior Vice Presidents, Federal Reserve Banks of Richmond, Dallas, New York, Minneapolis, Cleveland, Boston, and St. Louis, respectively

Roc Armenter, Deborah L. Leonard, Anna Paulson, Douglas Tillett, and Jonathan L. Willis
Vice Presidents, Federal Reserve Banks of Philadelphia, New York, Chicago, Chicago, and Kansas City, respectively

Developments in Financial Markets and the Federal Reserve's Balance Sheet

In a joint session of the Federal Open Market Committee (FOMC) and the Board of Governors of the Federal Reserve System, the manager of the System Open Market Account (SOMA) reported on developments in domestic and foreign financial markets. The manager also discussed System open market operations conducted by the Open Market Desk during the period since the Committee met on April 28–29. The Desk's overnight reverse repurchase agreement (RRP) operations continued to provide a soft floor for money market interest rates. The manager updated the Committee on plans for term RRP operations at the end of the second quarter and noted that testing of the Federal Reserve's Term Deposit Facility continued. The manager also reviewed the reinvestment policy for maturing Treasury securities. Specifically, at Treasury auctions, the Desk rolls over the maturing securities held in the SOMA into newly issued securities in proportion to the issue amounts of the new securities, and the Federal Reserve receives the interest rate determined competitively in the public auction of the newly issued securities.

The manager updated the Committee on tentative plans to improve the calculation of the effective federal funds rate published by the Federal Reserve Bank of New York. The effective federal funds rate, currently defined as the volume-weighted mean of

[3] Attended Tuesday's session only.

interest rates on federal funds transactions, would be redefined as the volume-weighted median. Staff analysis suggested that the volume-weighted median would usually differ little from the volume-weighted mean, but that the median would be a more robust statistic when some trades occur at interest rates that are unrepresentative of general market conditions or when there are data problems such as reporting errors. The change in approach would be implemented next year in conjunction with the transition to the Report of Selected Money Market Rates (FR 2420) as the data source for the calculation of the effective federal funds rate. A volume-weighted median would also be used to construct a representative measure of conditions in the broader set of markets covered by the new overnight bank funding rate.[4] The manager noted that additional background information on these changes would be published by the Desk shortly following the release of the minutes from this meeting. Participants expressed no objections to the proposal.

The staff also provided an update to the Committee on a review of the current system of primary dealers and the Desk's overall framework for establishing, maintaining, and publishing information on the Federal Reserve's counterparty relationships for operations in both domestic and foreign financial markets. While the current sets of counterparties were performing well and meeting the Desk's needs, the staff noted that it would report back to the Committee in the future should potential enhancements to the counterparty framework be identified. The Desk anticipated that it would conduct regular reviews of the counterparty framework approximately every three years in the future.

By unanimous vote, the Committee ratified the Open Market Desk's domestic transactions over the intermeeting period. There were no intervention operations in foreign currencies for the System's account over the intermeeting period.

The Board meeting concluded at the end of the discussion of developments in financial markets and the Federal Reserve's balance sheet.

[4] On February 2, 2015, in addition to announcing preliminary plans to improve the calculation of the effective federal funds rate, the Federal Reserve Bank of New York indicated that it planned to begin to publish an additional interest rate, the overnight bank funding rate, which will be based on both federal funds transactions and the Eurodollar transactions of U.S.-managed banking offices.

Staff Review of the Economic Situation

The information reviewed for the June 16–17 meeting suggested that real gross domestic product (GDP) was increasing moderately in the second quarter after edging down in the first quarter. Labor market conditions improved somewhat further in recent months. Consumer price inflation continued to run below the FOMC's longer-run objective of 2 percent and was restrained significantly by earlier declines in energy prices and decreases in prices of non-energy imports. Survey measures of longer-run inflation expectations remained stable, while market-based measures of inflation compensation were still low.

Total nonfarm payroll employment expanded at a faster pace in April and May than in the first quarter. The unemployment rate was 5.5 percent in May, about the same as its first-quarter average. The labor force participation rate and the employment-to-population ratio rose a bit over April and May, and the share of workers employed part time for economic reasons edged down on net. The rate of private-sector job openings moved up a little, on balance, in March and April, while the rates of hiring and quits were essentially unchanged.

Industrial production decreased during April and May after declining in the first quarter. The output of both the manufacturing and mining sectors fell over the past two months, likely reflecting the continuing effects of earlier increases in the foreign exchange value of the dollar and lower crude oil prices. Automakers' assembly schedules suggested that light motor vehicle production would increase at a solid pace in the near term, but broader indicators of manufacturing production, such as the readings on new orders from national and regional manufacturing surveys, generally pointed to modest gains in factory output in the coming months.

Growth in real personal consumption expenditures (PCE) appeared to pick up early in the second quarter from its modest pace in the previous quarter. The components of the nominal retail sales data used by the Bureau of Economic Analysis to construct its estimate of PCE increased in May, and the data for sales in the previous two months were revised up. Sales of light motor vehicles were much higher in May than in April. Among the factors that influence household spending, real disposable income rose in April and gains in households' net worth were supported by further advances in home values. Moreover, consumer sentiment in the University of Michi-

gan Surveys of Consumers in early June remained near its highest level since prior to the most recent recession.

Activity in the housing sector improved somewhat in recent months but continued to be slow. Starts and building permits of both new single-family homes and multifamily units increased, on balance, in April and May. Sales of new homes rose in April; existing home sales moved down, although pending home sales increased.

Growth in real private expenditures for business equipment and intellectual property products appeared to remain relatively slow in the second quarter. Nominal shipments of nondefense capital goods excluding aircraft rose in April. Forward-looking indicators, such as new orders for these capital goods along with national and regional surveys of business conditions, pointed to only modest increases in business equipment spending in the near term. Firms' nominal spending for nonresidential structures excluding drilling and mining rose in April. In contrast, the number of oil rigs in operation continued to fall through early June, suggesting a further decline in real business spending for drilling and mining structures in the second quarter.

Nominal federal spending data for April and May pointed toward a further decline in real federal government purchases in the second quarter. Real state and local government purchases appeared to be rising in the second quarter, with increases in both payrolls and nominal construction spending in recent months.

The U.S. international trade deficit widened substantially in March but narrowed in April, leaving the deficit modestly wider than in February. After decreasing for four straight months, exports increased in both March and April, as shipments to Asia picked up following the resolution in February of labor disputes at West Coast ports. Imports rebounded in March from the depressed levels in January and February but fell back in April, close to the first-quarter average. While real net exports made a large negative contribution to the change in real GDP in the first quarter of 2015, April data suggested that net exports might be a considerably smaller drag on GDP growth in the second quarter of the year.

Total U.S. consumer prices, as measured by the PCE price index, only edged up over the 12 months ending in April, held down primarily by earlier large declines in energy prices. Core PCE inflation, which excludes food and energy prices, was 1¼ percent over the same 12-month period, restrained in part by declines in the prices of non-energy imports. Measures of expected longer-run inflation from a number of surveys, including the Michigan survey, the Survey of Professional Forecasters, and the Desk's Survey of Primary Dealers, remained stable. However, market-based measures of inflation compensation were still low, although somewhat higher than early in the year. Measures of labor compensation rose at moderate rates, outpacing the rise in consumer prices over the past year. The employment cost index increased 2¾ percent over the four quarters ending in the first quarter, while compensation per hour in the nonfarm business sector rose 1¾ percent over the same period. Average hourly earnings for all employees increased 2¼ percent over the 12 months ending in May. There were some tentative signs that these labor compensation measures were accelerating a little in the first quarter.

Economic growth in many foreign economies slowed in the first quarter. Real GDP contracted in Canada, where lower oil prices depressed investment, and in Brazil, where business and consumer confidence weakened and high inflation prompted a significant tightening of monetary policy. In addition, real GDP growth slowed in China and Mexico. By contrast, the euro-area economy continued its recovery, and real GDP growth in Japan increased sharply. Inflation rates turned positive in recent months in many foreign economies following the trough in oil prices earlier this year.

Staff Review of the Financial Situation

Over the intermeeting period, longer-term Treasury yields increased notably amid heightened volatility, apparently boosted by a rise in yields on core euro-area sovereign bonds and, to a lesser extent, stronger-than-anticipated news about the U.S. labor market late in the period. The sharp rise in yields on core euro-area sovereign bonds seemed to reflect a notable rise in term premiums from significantly compressed levels as well as an increase in the path of expected future short-term rates following some positive data for the European economy.

The nominal Treasury yield curve steepened appreciably, on net, with 2-, 5-, and 10-year yields ending the intermeeting period about 15 to 35 basis points higher. Most of the increase in nominal yields was

attributable to a rise in real yields, as measures of inflation compensation were relatively stable.

Various measures typically used to assess liquidity in Treasury and mortgage-backed securities (MBS) markets were little changed over the intermeeting period; they have generally pointed to relatively stable market functioning over the past several years. However, the majority of respondents to the June Senior Credit Officer Opinion Survey on Dealer Financing Terms indicated that, over the past five years, liquidity and functioning in these markets, especially in Treasury markets, have deteriorated. Respondents attributed the deterioration primarily to securities dealers' decreased willingness to provide balance sheet resources for market making as a result of both regulatory changes and changes in internal risk-management practices.

On balance, the expected path of the federal funds rate implied by futures contracts steepened noticeably beyond 2015, with a portion of this shift coming after the May employment report. Some evidence suggested that a significant part of the increase may have reflected higher term premiums. By contrast, Federal Reserve communications following the April FOMC meeting were characterized by investors as generally in line with expectations and elicited limited market reaction.

Results from the June Survey of Primary Dealers and the June Survey of Market Participants indicated little change since the April survey in modal forecasts of the federal funds rate through 2018. Respondents again saw the September 2015 FOMC meeting as the most likely time for the first increase in the target range for the federal funds rate. The expected pace of tightening after the initial increase in the target range for the federal funds rate, whenever that might occur, was similar to that reported in the April survey.

Over the intermeeting period, most broad U.S. equity price indexes moved down a bit, on net, amid mixed macroeconomic news and little information on earnings. Option-implied volatility on the S&P 500 index over the next month increased, on balance, but remained near the lower end of its historical range. Spreads on 10-year triple-B-rated corporate bonds over comparable-maturity Treasury securities widened somewhat, on net, while spreads on speculative-grade corporate bonds narrowed slightly.

Financing conditions for large nonfinancial businesses continued to be accommodative. Gross corporate bond issuance remained quite strong, and institutional leveraged loan issuance picked up significantly. Commercial and industrial loans on banks' balance sheets continued to increase at a solid pace. Meanwhile, financing conditions for small businesses continued to improve, though the growth of small business loans on banks' books remained subdued, partly reflecting still-tepid demand for credit from owners of small businesses.

Financing for commercial real estate remained broadly available, although the expansion of commercial real estate loans on banks' books slowed in April and May, reportedly because of sales of loans secured by nonfarm nonresidential properties into pools of commercial mortgage-backed securities. Measures of residential mortgage credit availability continued to improve gradually over the intermeeting period. Nevertheless, credit remained tight for borrowers with lower credit scores. Interest rates on 30-year fixed-rate mortgages increased about 30 basis points, broadly in line with MBS yields and other longer-term rates. Financing conditions in consumer credit markets stayed accommodative in March and April. Auto and student loans expanded at a robust pace through April, while revolving credit picked up in March and April after a slow start at the beginning of the year.

Sovereign bond yields in foreign economies rose notably during the intermeeting period, especially in the advanced economies, led by a substantial increase in German bund yields. A number of factors may have contributed to the increase in yields, including a reappraisal of term premiums, which appeared to have fallen to very low levels in April. The rise in yields was also supported by the release of some stronger-than-expected inflation data in the euro area and by European Central Bank communications that volatility in yields was to be expected. Against this backdrop and with a step-up in concerns about developments in Greece, equity prices declined in most countries. Stock prices in Japan and especially in China were the main exceptions. The foreign exchange value of the dollar increased a bit, on balance, during the intermeeting period against the currencies of major U.S. trading partners. While the dollar declined against the euro and other European currencies, it rose against the Canadian dollar, the yen,

and many emerging market currencies, boosted in part by the strong U.S. employment report for May.

Staff Economic Outlook

In the economic forecast prepared by the staff for the June FOMC meeting, real GDP growth in the second half of this year was expected to step up from its pace in the first half. However, economic growth in the second half was projected to be a little lower than in the projection prepared for the April meeting, largely reflecting a small downward revision to the forecast for household spending. The staff's medium-term projection for real GDP growth was essentially unrevised from the previous forecast. The staff continued to project that real GDP would expand at a faster pace than potential output in 2016 and 2017, supported primarily by increases in consumer spending, even as the normalization of the stance of monetary policy was assumed to proceed. The expansion in economic output over the medium term was anticipated to trim resource slack; the unemployment rate was expected to decline gradually to the staff's estimate of its longer-run natural rate.

The staff's forecast for inflation in the near term was little changed, and it was unrevised over the medium term. Energy prices and non-oil import prices were expected to begin steadily rising next year, but the staff projected that inflation would continue to be below the Committee's longer-run objective of 2 percent over 2016 and 2017. However, inflation was anticipated to reach 2 percent thereafter, with inflation expectations in the longer run assumed to be consistent with the Committee's objective and slack in labor and product markets projected to have waned.

The staff viewed the extent of uncertainty around its June projections for real GDP growth, the unemployment rate, and inflation as similar to the average over the past 20 years. The risks to the forecasts for real GDP growth and inflation were seen as tilted a little to the downside, reflecting the staff's assessment that neither monetary policy nor fiscal policy was well positioned to help the economy withstand substantial adverse shocks. At the same time, the staff saw the risks around its outlook for the unemployment rate as roughly balanced.

Participants' Views on Current Conditions and the Economic Outlook

In conjunction with this FOMC meeting, members of the Board of Governors and Federal Reserve Bank presidents submitted their projections of the most likely outcomes for real GDP growth, the unemployment rate, inflation, and the federal funds rate for each year from 2015 through 2017 and over the longer run, conditional on each participant's judgment of appropriate monetary policy.[5] The longer-run projections represent each participant's assessment of the rate to which each variable would be expected to converge, over time, under appropriate monetary policy and in the absence of further shocks to the economy. These projections and policy assessments are described in the Summary of Economic Projections, which is an addendum to these minutes.

In their discussion of the economic situation and the outlook, meeting participants viewed the information received over the intermeeting period as indicating that economic activity was expanding moderately after little change in the first quarter of the year. Early in 2015, a number of factors—including unfavorable weather in parts of the country and labor disputes at West Coast ports—temporarily held down real GDP; several analyses also suggested that difficulties with seasonal adjustment likely contributed to an underestimate of first-quarter real GDP. The unemployment rate was unchanged over the period between the April and June meetings, but payroll employment posted solid gains, and, on balance, a range of labor market indicators suggested that underutilization of labor resources diminished somewhat. Although participants marked down their expectations for the rate of increase in real GDP over the first half of the year, their projections for economic growth in the second half of 2015 and over 2016 and 2017 were broadly similar to those prepared for the March meeting. Under their respective assumptions about appropriate monetary policy, participants generally expected real GDP to expand at a

[5] The incoming president of the Federal Reserve Bank of Philadelphia assumed office after the June FOMC meeting, on July 1, and a new president of the Federal Reserve Bank of Dallas has yet to be selected. Blake Prichard and Helen E. Holcomb, first vice presidents of the Federal Reserve Banks of Philadelphia and Dallas, respectively, submitted economic projections.

rate sufficient to continue to move labor market conditions toward levels judged consistent with the Committee's dual mandate. Inflation readings available since the April meeting continued to run below the Committee's longer-run objective, partly reflecting earlier declines in energy prices and continued decreases in prices of non-energy imports. However, energy prices appeared to have stabilized. Participants continued to project a gradual rise in inflation toward 2 percent over the medium term as the labor market improved further and the transitory effects of earlier declines in energy and import prices dissipated.

In discussing how to interpret the reported weakness in real GDP during the first quarter, participants considered alternative estimates of real economic activity based on various data-filtering models maintained by Board and Reserve Bank staff. These models yielded a range of estimates, but, overall, they suggested that real activity in the first quarter was likely stronger than the then-current official estimate of real GDP. Some participants indicated that the higher alternative estimates seemed more consistent with the increases in real gross domestic income and private domestic final purchases in the first quarter as well as the strength in employment and hours worked. However, the alternative estimates left open the question of when and to what extent the seasonal adjustment and other measurement issues associated with official estimates of GDP in the first quarter might unwind.

While participants generally saw the risks to their projections of economic activity and the labor market as balanced, they gave a number of reasons to be cautious in assessing the outlook. Some pointed to the risk that the weaker-than-anticipated rise in economic activity over the first half of the year could reflect factors that might continue to restrain sales and production, and that economic activity might not have sufficient momentum to sustain progress toward the Committee's objectives. In particular, they were concerned that consumers could remain cautious or that the drag on sectors affected by lower energy prices and the higher dollar could persist. Others, however, viewed the strength in the labor market in recent months as potentially signaling a stronger-than-expected bounceback in economic activity. Several mentioned their uncertainty about whether Greece and its official creditors would reach an agreement and about the likely pace of economic growth abroad, particularly in China and other emerging market economies. Other concerns were related to whether the apparent weakness in productivity growth recently would be reversed or continue. On the one hand, a rebound in productivity growth in coming quarters might restrain hiring and slow the improvement in labor market conditions. On the other hand, if productivity growth remained weak, the labor market might tighten more quickly and inflation might rise more rapidly than anticipated.

At the time of the April meeting, the increase in consumer spending was estimated to have been unexpectedly weak in the first quarter following strong gains in the second half of 2014. The additional information that had become available since then, including more complete estimates of outlays for services and revised data on retail sales, indicated that consumer spending was somewhat better than previously reported, rising at a moderate pace in the first quarter. In addition, the strong rebound in motor vehicle sales and the solid gain in retail sales in May suggested that the pace of consumer spending was picking up in the current quarter. Moreover, a number of fundamental factors determining consumer spending remained positive, including the boost to real income from the earlier decline in energy prices, low interest rates, sustained moderate gains in wage and salary income, stronger household balance sheets, and the high levels of households' confidence about the economic outlook and about their income prospects. Many participants anticipated that these factors would support a solid pace of consumer spending going forward. However, others remained concerned that consumers had not increased their spending as much as expected in response to the drop in energy prices, and that the rise in the saving rate since last fall may signal more cautious behavior among households that might last for some time.

A number of participants noted that housing starts and permits rose considerably in recent months, and indicators of sales activity turned more positive. Nonetheless, home construction was still below the trend that would appear consistent with population growth, sales remained at low levels, and credit availability was still relatively tight.

Reports on manufacturing in a number of regions offered some signs that the sector was no longer weakening, with a couple of Districts' diffusion indexes turning up. Still, cutbacks in spending on drilling and mining equipment, slow demand for other business equipment, and the drag on exports from slow foreign demand and previous increases in the dollar continued to weigh on industrial produc-

tion. Motor vehicle production was highlighted as a bright spot. In those Districts in which activity had been adversely affected by the drop in energy prices, drilling activity was either contracting less rapidly or was stabilizing. Higher oil production could continue to hold down energy prices in the near term, but industry contacts anticipated some recovery in prices over the coming year, which should stem layoffs and cuts in capital spending in the energy sector. Agricultural production in several Districts appeared likely to benefit from wet weather, but weak farm income continued to weigh on the sector. Several participants reported that the services sector was a relative source of strength in their Districts. In general, business contacts continued to express optimism about stronger sales and production in the second half of the year.

In their discussion of labor market conditions, participants offered their views on recent developments and the progress that had occurred in reducing underutilization of labor resources. They generally agreed that labor market conditions had improved somewhat over the intermeeting period, variously citing solid increases in payroll employment and job openings; low levels of unemployment insurance claims; and, despite an unchanged unemployment rate, some further reduction in broader measures of underutilization, particularly among those not actively searching for jobs, but available and interested in work. Several participants pointed to some favorable trends that had developed over a longer period, such as the flattening out of the labor force participation rate and a shift in the flow of workers into more stable and higher-skilled jobs. A number of participants noted that the outlook for continued job gains was evident in reports on hiring intentions from business contacts in their Districts who indicated that more firms planned additions to their payrolls over the coming year than a year earlier. While the cumulative improvements in labor market conditions over the past year had been substantial, most participants judged that further progress would be required to eliminate underutilization of labor resources; some of them anticipated that the utilization gap would close around the end of the year. Several other participants indicated that, in their view, labor market slack had already been largely eliminated.

The ongoing rise in labor demand appeared to have begun to result in a firming of wage increases. Recent readings on the employment cost index, hourly compensation, and average hourly earnings of employees suggested some acceleration in wages. According to business contacts in a number of Districts, many firms looking for new workers said they had been raising wages selectively to attract them; some had also begun to raise wages more generally. However, several participants pointed out that, even with the recent upturn, wage increases remain subdued.

Participants discussed how the incoming information regarding inflation influenced their expectations for reaching the FOMC's 2 percent inflation objective over the medium term. Total PCE inflation continued to run below the Committee's objective. However, participants noted that the apparent stabilization of crude oil prices and the foreign exchange value of the dollar would reduce the downward pressure on inflation from falling prices of energy and imported goods. Core PCE price inflation, as measured on a 12-month change basis, had slowed slightly from an already low rate. However, several participants pointed out that the 3-month change in that index had firmed recently, signaling some improvement in the inflation outlook. In addition, some cited alternative measures of inflation, such as the trimmed mean and median consumer price indexes (CPIs) and the trimmed mean PCE, which continued to run at higher levels than overall PCE inflation. Survey measures of longer-term inflation expectations remained stable, and market-based measures of inflation compensation, while still low, were higher than earlier in the year. Nonetheless, a couple of participants continued to be concerned that the extended period of low inflation might persist and feed through to inflation expectations, citing estimates from various inflation forecasting models and the downtrend in the 10-year CPI projections in the Survey of Professional Forecasters. Participants continued to anticipate that, with appropriate monetary policy, inflation would move up to or toward the Committee's objective over the medium term. Among the factors influencing the trajectories of their inflation forecasts were their outlooks for the pace of real activity, labor market conditions and wage developments, and inflation expectations.

In their discussion of financial market developments over the intermeeting period, several participants commented on the rise in the 10-year Treasury yield, which accompanied a steeper run-up in the 10-year German yield. The sharp rise in German yields appeared to reflect a retracing of the earlier decline in German rates to unsustainably low levels. It was noted that the increase in U.S. yields was not especially large in a historical context and that volatility in U.S. fixed-income markets was still somewhat

below pre-crisis levels. However, many participants expressed concern that a failure of Greece and its official creditors to resolve their differences could result in disruptions in financial markets in the euro area, with possible spillover effects on the United States. And some participants reiterated the importance of effective Committee communications in reducing the likelihood of an outsized financial market reaction around the time that policy normalization begins.

During their discussion of economic conditions and monetary policy, participants commented on a number of considerations associated with the timing and pace of policy normalization. Most participants judged that the conditions for policy firming had not yet been achieved; a number of them cautioned against a premature decision. Many participants emphasized that, in order to determine that the criteria for beginning policy normalization had been met, they would need additional information indicating that economic growth was strengthening, that labor market conditions were continuing to improve, and that inflation was moving back toward the Committee's objective. Other concerns that were mentioned were the potential erosion of the Committee's credibility if inflation were to persist below 2 percent and the limited ability of monetary policy to offset downside shocks to inflation and economic activity when the federal funds rate was at its effective lower bound. Some participants viewed the economic conditions for increasing the target range for the federal funds rate as having been met or were confident that they would be met shortly. They identified several possible risks associated with delaying the start of policy firming. One such risk was the possibility that the Committee might need to tighten more rapidly than financial markets currently anticipate—an outcome that could be associated with a significant rise in longer-term interest rates or heightened financial market volatility. Another was that prolonging a high degree of monetary policy accommodation might result in an undesirable increase in inflation or might have adverse consequences for financial and macroeconomic stability. It was also pointed out that a prompt start to normalization would likely convey the Committee's confidence in prospects for the economy. During the discussion, a number of participants recommended that, around the time of the first increase in the target range, the Committee consider how it would update its communications regarding the likely path of the federal funds rate, with several indicating that the Committee should remain data dependent in making adjustments to the target range.

Participants also discussed plans for publishing operational details regarding the implementation of monetary policy around the time of the first increase in the target range. All participants supported a staff proposal for the Federal Reserve to issue an implementation note that would communicate separately from the Committee's postmeeting policy statement the specific measures to be employed to implement the FOMC's decision about the stance of policy. Following scheduled FOMC meetings, this implementation note would be released at the same time as the Committee's postmeeting statement; it would convey operational details regarding the settings of the policy tools and the changes in administered rates being employed to achieve the Committee's desired stance of policy, and it would include the FOMC's domestic policy directive to the Desk. If adjustments to policy tools or administered rates subsequently proved necessary to implement an unchanged policy stance, the implementation note could be revised without altering the Committee's policy statement. Participants agreed that this strategy provided a number of advantages, including focusing the Committee's postmeeting statement on information about economic conditions and the stance of monetary policy; communicating the details of policymakers' operational decisions, including the FOMC's domestic policy directive, in one place; reducing the risk that Federal Reserve communications regarding any technical adjustments to the operation of its policy tools after the commencement of policy firming might be mistaken as conveying information about the stance of policy; and emphasizing that operational decisions regarding the Federal Reserve's policy tools will be made in concert by the Federal Reserve Board and the FOMC with the aim of maintaining the federal funds rate in the range established by the FOMC. Participants also discussed how the language of the domestic policy directive could be revised when the first increase in the target range for the federal funds rate becomes appropriate. It was noted that the Committee might, in addition to providing specific instructions to the Desk regarding operations at that time, update other language in the directive.

Committee Policy Action

In its discussion of monetary policy for the period ahead, the Committee agreed that the weakness in

the first quarter was at least in part the result of transitory factors, and members anticipated that economic growth would resume in the second quarter. Although they expressed some uncertainty about the extent of the likely near-term pickup, members expected moderate economic growth over the medium term. Labor market conditions had improved somewhat further, and members anticipated further progress in coming months. Ongoing gains in employment and wages along with a high level of consumer confidence were expected to provide support to household spending. Signs of stronger housing activity were encouraging. However, the outlook for business investment remained soft, and net exports were likely to continue to be restrained by the earlier appreciation of the dollar. Inflation had been well below the Committee's longer-run objective, but, with oil prices and the foreign exchange value of the dollar stabilizing, members expected that inflation would gradually rise toward 2 percent over the medium term. Members thus saw economic conditions as continuing to approach those consistent with warranting a start to the normalization of the stance of monetary policy. In these circumstances, members agreed to continue making decisions about the appropriate target range for the federal funds rate on a meeting-by-meeting basis, with their decisions depending on the implications of economic and financial developments for the prospects for labor markets and inflation.

With respect to its objective of maximum employment, the Committee judged that, on balance, a range of labor market indicators suggested that underutilization of labor resources had diminished somewhat over the intermeeting period. Most members saw room for additional progress in reducing labor market slack, while a couple of members indicated that they viewed the unemployment rate as very close or essentially identical to its mandate-consistent level. Many expected that labor market underutilization would be largely eliminated around year-end if economic activity strengthened as they expected. However, some members were more uncertain about the extent of progress in the labor market to date or were concerned that if the pace of economic growth remained slow, labor market conditions might improve only gradually. Most agreed that they would need more information on developments in the labor market to establish a solid basis for assessing whether labor market conditions had improved sufficiently to initiate tightening.

Inflation had continued to run below the Committee's 2 percent objective. Most members agreed that the recent stability in crude oil prices had increased their confidence that the downward pressure on inflation from earlier declines in energy prices was abating, and some noted the recent stability of the foreign exchange value of the dollar, which could eventually stem the decline in prices of imports. Market-based measures of inflation compensation remained low, but they had risen some from their levels earlier in the year, and survey measures of inflation expectations continued to be stable. However, core inflation was still well below 2 percent. The Committee agreed to continue to monitor inflation developments closely. In considering the Committee's criteria for beginning policy normalization, all members but one indicated that they would need to see more evidence that economic growth was sufficiently strong and labor market conditions had firmed enough to return inflation to the Committee's longer-run objective over the medium term; one member was already reasonably confident of such an outcome.

The Committee concluded that, although it had seen some progress, the conditions warranting an increase in the target range for the federal funds rate had not yet been met, and that additional information on the outlook, particularly for labor markets and inflation, would be necessary before deciding to implement such an increase. One member, however, indicated a readiness to take that step at this meeting but also expressed a willingness to wait another meeting or two for additional data before raising the target range.

In considering how to communicate the rationale for the Committee's policy decision, members discussed the importance of adjusting the language in the post-meeting statement to acknowledge the evolution of progress toward the Committee's objectives. The Committee judged it appropriate to communicate that it had seen some further improvement in labor market conditions over the intermeeting period, stating that a range of labor market indicators suggested that underutilization of labor resources diminished somewhat. It also decided to indicate the likelihood that energy prices might soon exert less downward influence on inflation, saying that energy prices appeared to have stabilized, and to restate its expectation that inflation would rise gradually toward 2 percent over the medium term as the labor market

improves further and the transitory effects of earlier declines in energy and import prices dissipate.

The Committee agreed to maintain the target range for the federal funds rate at 0 to ¼ percent and to reaffirm in the statement that the Committee's decision about how long to maintain the current target range for the federal funds rate would depend on its assessment of actual and expected progress toward its objectives of maximum employment and 2 percent inflation. Members continued to judge that their evaluation of progress on their objectives would take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments. Members agreed to retain the indication that the Committee anticipates that it will be appropriate to raise the target range for the federal funds rate when it has seen further improvement in the labor market and is reasonably confident that inflation will move back to its 2 percent objective over the medium term.

The Committee also maintained its policy of reinvesting principal payments from agency debt and agency mortgage-backed securities in agency mortgage-backed securities and of rolling over maturing Treasury securities at auction. This policy, by keeping the Committee's holdings of longer-term securities at sizable levels, should help maintain accommodative financial conditions. The Committee agreed to reiterate its expectation that, even after employment and inflation are near mandate-consistent levels, economic conditions may, for some time, warrant keeping the target federal funds rate below levels the Committee views as normal in the longer run.

At the conclusion of the discussion, the Committee voted to authorize and direct the Federal Reserve Bank of New York, until it was instructed otherwise, to execute transactions in the SOMA in accordance with the following domestic policy directive:

> "Consistent with its statutory mandate, the Federal Open Market Committee seeks monetary and financial conditions that will foster maximum employment and price stability. In particular, the Committee seeks conditions in reserve markets consistent with federal funds trading in a range from 0 to ¼ percent. The Committee directs the Desk to undertake open market operations as necessary to maintain such conditions. The Committee directs the Desk to maintain its policy of rolling over maturing Treasury securities into new issues and its policy of reinvesting principal payments on all agency debt and agency mortgage-backed securities in agency mortgage-backed securities. The Committee also directs the Desk to engage in dollar roll and coupon swap transactions as necessary to facilitate settlement of the Federal Reserve's agency mortgage-backed securities transactions. The System Open Market Account manager and the secretary will keep the Committee informed of ongoing developments regarding the System's balance sheet that could affect the attainment over time of the Committee's objectives of maximum employment and price stability."

The vote encompassed approval of the statement below to be released at 2:00 p.m.:

> "Information received since the Federal Open Market Committee met in April suggests that economic activity has been expanding moderately after having changed little during the first quarter. The pace of job gains picked up while the unemployment rate remained steady. On balance, a range of labor market indicators suggests that underutilization of labor resources diminished somewhat. Growth in household spending has been moderate and the housing sector has shown some improvement; however, business fixed investment and net exports stayed soft. Inflation continued to run below the Committee's longer-run objective, partly reflecting earlier declines in energy prices and decreasing prices of non-energy imports; energy prices appear to have stabilized. Market-based measures of inflation compensation remain low; survey-based measures of longer-term inflation expectations have remained stable.
>
> Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee expects that, with appropriate policy accommodation, economic activity will expand at a moderate pace, with labor market indicators continuing to move toward levels the Committee judges consistent with its dual mandate. The Committee continues to see the risks to the outlook for economic activity and the labor market as nearly balanced. Inflation is anticipated to remain near its recent low level in the near term, but the Committee expects inflation to rise gradually toward 2 percent over the medium term as the labor market

improves further and the transitory effects of earlier declines in energy and import prices dissipate. The Committee continues to monitor inflation developments closely.

To support continued progress toward maximum employment and price stability, the Committee today reaffirmed its view that the current 0 to ¼ percent target range for the federal funds rate remains appropriate. In determining how long to maintain this target range, the Committee will assess progress—both realized and expected—toward its objectives of maximum employment and 2 percent inflation. This assessment will take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments. The Committee anticipates that it will be appropriate to raise the target range for the federal funds rate when it has seen further improvement in the labor market and is reasonably confident that inflation will move back to its 2 percent objective over the medium term.

The Committee is maintaining its existing policy of reinvesting principal payments from its holdings of agency debt and agency mortgage-backed securities in agency mortgage-backed securities and of rolling over maturing Treasury securities at auction. This policy, by keeping the Committee's holdings of longer-term securities at sizable levels, should help maintain accommodative financial conditions.

When the Committee decides to begin to remove policy accommodation, it will take a balanced approach consistent with its longer-run goals of maximum employment and inflation of 2 percent. The Committee currently anticipates that, even after employment and inflation are near mandate-consistent levels, economic conditions may, for some time, warrant keeping the target federal funds rate below levels the Committee views as normal in the longer run."

Voting for this action: Janet L. Yellen, William C. Dudley, Lael Brainard, Charles L. Evans, Stanley Fischer, Jeffrey M. Lacker, Dennis P. Lockhart, Jerome H. Powell, Daniel K. Tarullo, and John C. Williams.

Voting against this action: None.

It was agreed that the next meeting of the Committee would be held on Tuesday–Wednesday, July 28–29, 2015. The meeting adjourned at 10:40 a.m. on June 17, 2015.

Notation Vote

By notation vote completed on May 19, 2015, the Committee unanimously approved the minutes of the Committee meeting held on April 28–29, 2015.

By notation vote completed on June 3, 2015, the Committee unanimously approved the selection of Brian F. Madigan to serve as secretary, effective June 4, 2015, until the selection of a successor at the first regularly scheduled meeting of the Committee in 2016.

Brian F. Madigan
Secretary

Addendum: Summary of Economic Projections

In conjunction with the Federal Open Market Committee (FOMC) meeting held on June 16–17, 2015, meeting participants submitted their projections of the most likely outcomes for real output growth, the unemployment rate, inflation, and the federal funds rate for each year from 2015 to 2017 and over the longer run.[6] Each participant's projection was based on information available at the time of the meeting together with his or her assessment of appropriate monetary policy and assumptions about the factors likely to affect economic outcomes. The longer-run projections represent each participant's assessment of the value to which each variable would be expected to converge, over time, under appropriate monetary policy and in the absence of further shocks to the economy. "Appropriate monetary policy" is defined as the future path of policy that each participant deems most likely to foster outcomes for economic activity and inflation that best satisfy his or her individual interpretation of the Federal Reserve's objectives of maximum employment and stable prices.

FOMC participants generally expected that, under appropriate monetary policy, growth of real gross domestic product (GDP) in 2015 would be somewhat below their individual estimates of the U.S. economy's longer-run normal growth rate but would increase in 2016 before slowing to or toward its longer-run rate in 2017 (table 1 and figure 1). Participants generally expected that the unemployment rate would continue to decline in 2015 and 2016, and that the unemployment rate would be at or below their individual judgments of its longer-run normal level by the end of 2017. Participants anticipated that inflation, as measured by the four-quarter percent change in the price index for personal consumption expenditures (PCE), would be appreciably below 2 percent this year but expected it to step up next year, and a substantial majority of participants projected that inflation would be at or close to the Committee's goal of 2 percent in 2017.

As shown in figure 2, all but two participants anticipated that further improvement in economic conditions and the economic outlook would make it appropriate to begin raising the target range for the federal funds rate in 2015. The economic outlooks of individual participants implied that it likely would be appropriate to raise the target federal funds rate fairly gradually over the projection period in order to promote labor market conditions and inflation the Committee judges most consistent with attaining its mandated objectives of maximum employment and

Table 1. Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents, June 2015
Percent

Variable	Central tendency[1]				Range[2]			
	2015	2016	2017	Longer run	2015	2016	2017	Longer run
Change in real GDP	1.8 to 2.0	2.4 to 2.7	2.1 to 2.5	2.0 to 2.3	1.7 to 2.3	2.3 to 3.0	2.0 to 2.5	1.8 to 2.5
March projection	2.3 to 2.7	2.3 to 2.7	2.0 to 2.4	2.0 to 2.3	2.1 to 3.1	2.2 to 3.0	1.8 to 2.5	1.8 to 2.5
Unemployment rate	5.2 to 5.3	4.9 to 5.1	4.9 to 5.1	5.0 to 5.2	5.0 to 5.3	4.6 to 5.2	4.8 to 5.5	5.0 to 5.8
March projection	5.0 to 5.2	4.9 to 5.1	4.8 to 5.1	5.0 to 5.2	4.8 to 5.3	4.5 to 5.2	4.8 to 5.5	4.9 to 5.8
PCE inflation	0.6 to 0.8	1.6 to 1.9	1.9 to 2.0	2.0	0.6 to 1.0	1.5 to 2.4	1.7 to 2.2	2.0
March projection	0.6 to 0.8	1.7 to 1.9	1.9 to 2.0	2.0	0.6 to 1.5	1.6 to 2.4	1.7 to 2.2	2.0
Core PCE inflation[3]	1.3 to 1.4	1.6 to 1.9	1.9 to 2.0		1.2 to 1.6	1.5 to 2.4	1.7 to 2.2	
March projection	1.3 to 1.4	1.5 to 1.9	1.8 to 2.0		1.2 to 1.6	1.5 to 2.4	1.7 to 2.2	

Note: Projections of change in real gross domestic product (GDP) and projections for both measures of inflation are from the fourth quarter of the previous year to the fourth quarter of the year indicated. PCE inflation and core PCE inflation are the percentage rates of change in, respectively, the price index for personal consumption expenditures (PCE) and the price index for PCE excluding food and energy. Projections for the unemployment rate are for the average civilian unemployment rate in the fourth quarter of the year indicated. Each participant's projections are based on his or her assessment of appropriate monetary policy. Longer-run projections represent each participant's assessment of the rate to which each variable would be expected to converge under appropriate monetary policy and in the absence of further shocks to the economy. The March projections were made in conjunction with the meeting of the Federal Open Market Committee on March 17–18, 2015.

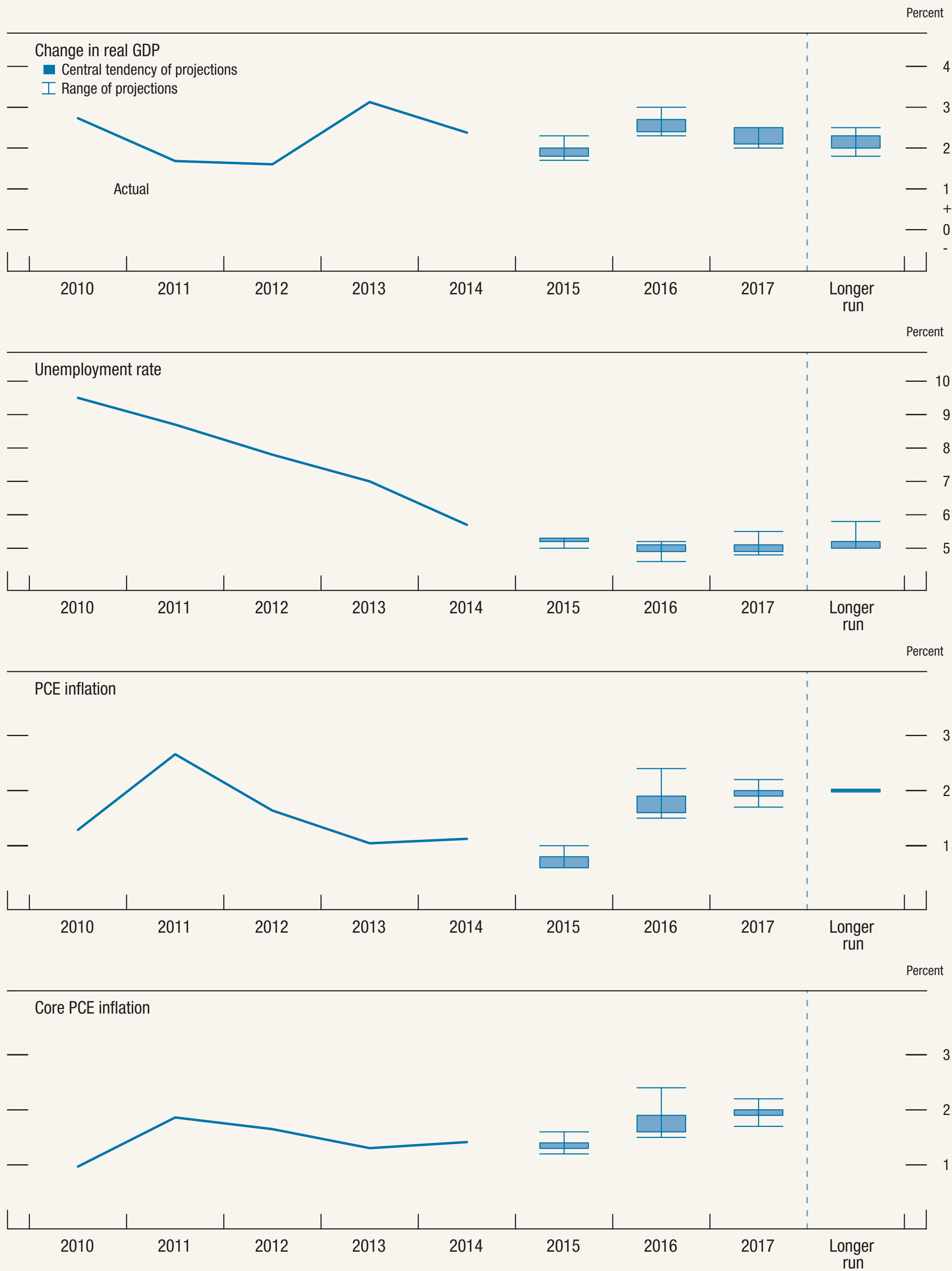
1 The central tendency excludes the three highest and three lowest projections for each variable in each year.

2 The range for a variable in a given year includes all participants' projections, from lowest to highest, for that variable in that year.

3 Longer-run projections for core PCE inflation are not collected.

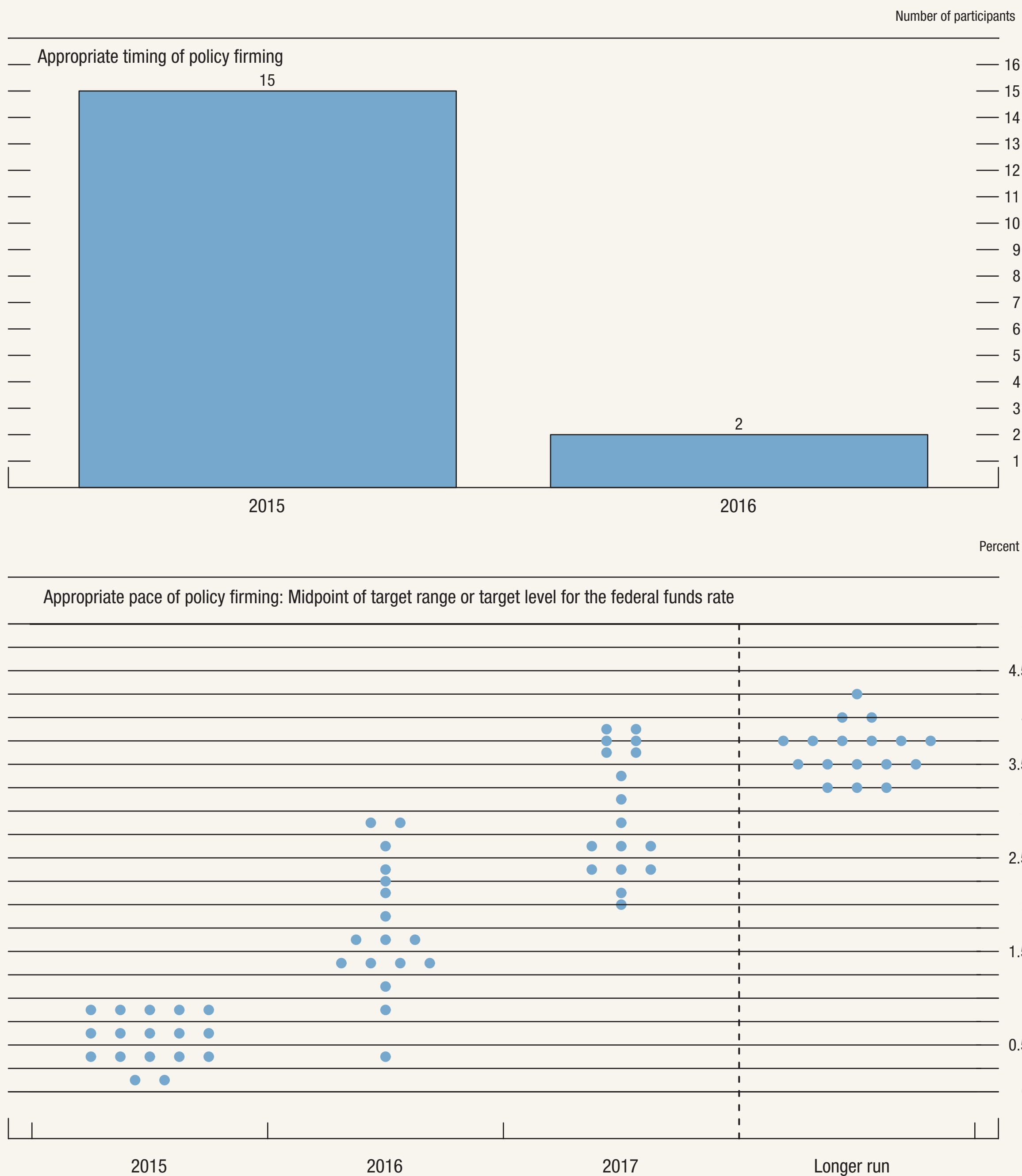
6 The incoming president of the Federal Reserve Bank of Philadelphia assumed office after the June FOMC meeting, on July 1, and a new president of the Federal Reserve Bank of Dallas has yet to be selected. Blake Prichard and Helen E. Holcomb, first vice presidents of the Federal Reserve Banks of Philadelphia and Dallas, respectively, submitted economic projections.

Figure 1. Central tendencies and ranges of economic projections, 2015–17 and over the longer run



Note: Definitions of variables are in the general note to table 1. The data for the actual values of the variables are annual.

Figure 2. Overview of FOMC participants' assessments of appropriate monetary policy



Note: In the upper panel, the height of each bar denotes the number of FOMC participants who judge that, under appropriate monetary policy, the first increase in the target range for the federal funds rate from its current range of 0 to ¼ percent will occur in the specified calendar year. In March 2015, the numbers of FOMC participants who judged that the first increase in the target federal funds rate would occur in 2015 and 2016 were, respectively, 15 and 2. In the lower panel, each shaded circle indicates the value (rounded to the nearest ⅛ percentage point) of an individual participant's judgment of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate at the end of the specified calendar year or over the longer run.

stable prices. Most participants continued to expect that it would be appropriate for the federal funds rate to stay appreciably below its longer-run level for some time after inflation and unemployment are near mandate-consistent levels, reflecting the effects of remaining headwinds holding back the economic expansion, and other factors.

Most participants viewed the uncertainty associated with their outlooks for economic growth and the unemployment rate as broadly similar to the average level of the past 20 years. Most participants also judged the level of uncertainty about inflation to be broadly similar to the average level of the past 20 years, although some participants viewed it as higher. In addition, most participants continued to see the risks to the outlook for economic growth and for the unemployment rate as broadly balanced, though some viewed the risks to economic growth as weighted to the downside. A majority of participants saw the risks to inflation as balanced; of the five who did not see inflation risks as balanced, four saw risks as tilted to the downside.

The Outlook for Economic Activity

Participants generally projected that, conditional on their individual assumptions about appropriate monetary policy, real GDP would grow slowly in the first half of 2015, but that this near-term weakness would give way to growth in 2016 that exceeds their estimates of its longer-run normal rate; most participants expected real GDP growth to slow in 2017 to rates at or near their individual estimates of the longer-run rate. Participants generally regarded the weakness in economic activity in the first half of this year to be temporary and pointed to a number of factors that they expected would contribute to solid output growth through 2016, including improving labor market conditions, strengthened household and business balance sheets, waning effects of the earlier increases in the exchange value of the dollar, a boost to consumer spending from low energy prices, diminishing restraint from fiscal policy, and still-accommodative monetary policy.

Compared with their Summary of Economic Projections (SEP) contributions in March, all participants revised down their projections of real GDP growth for 2015, but many expected the economy to make up at least some of the shortfall over the remainder of the forecast period. Beyond the near term, changes in participants' forecasts were small. The central tendencies of participants' current projections for real GDP growth were 1.8 to 2.0 percent in 2015, 2.4 to 2.7 percent in 2016, and 2.1 to 2.5 percent in 2017. The central tendency of the projections of GDP growth in the longer run was unchanged from March at 2.0 to 2.3 percent.

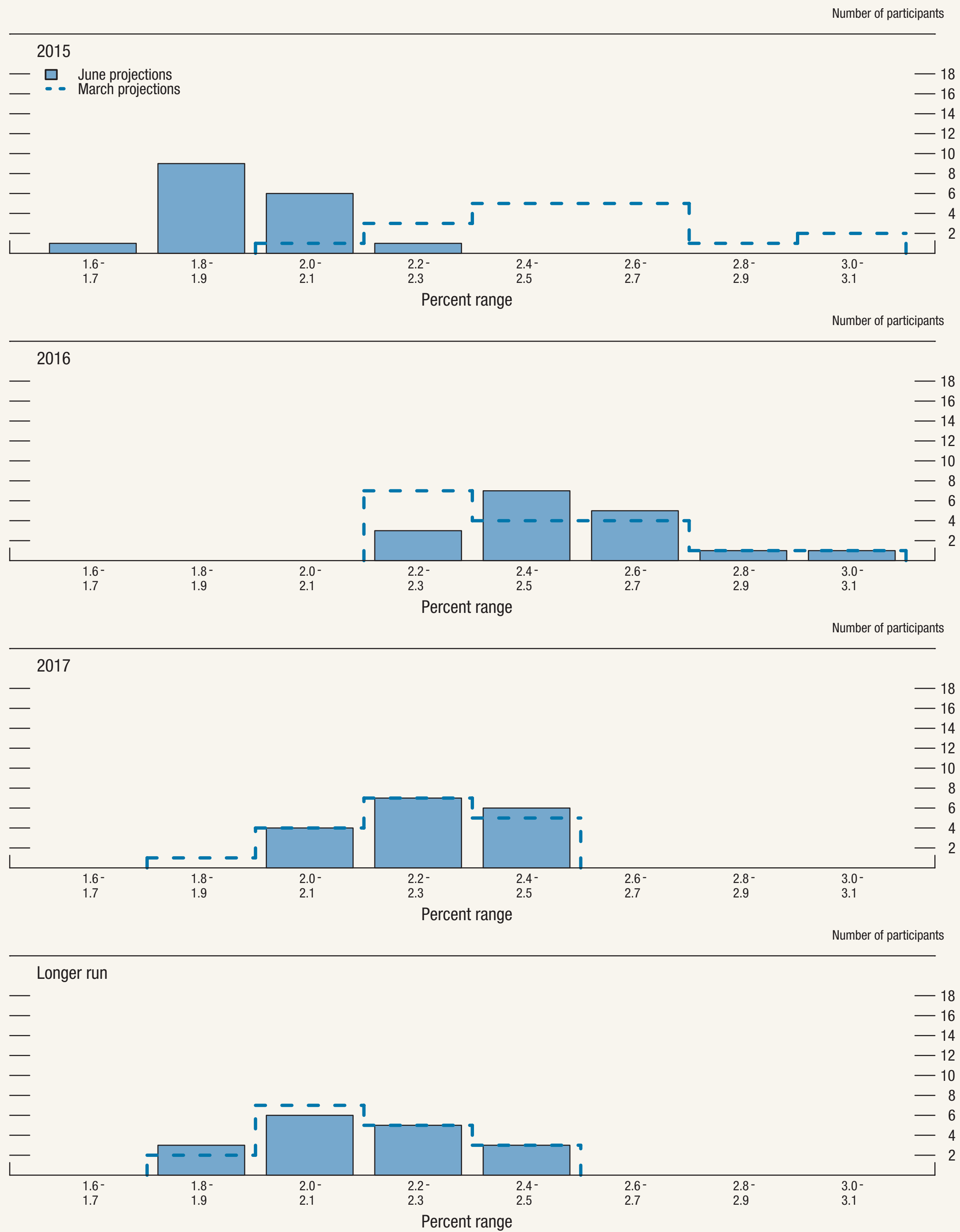
Most participants projected that the unemployment rate would continue to decline through 2016, and nearly all projected that by the fourth quarter of 2017, the unemployment rate would be at or below their individual judgments of its longer-run normal level. The central tendencies of participants' forecasts for the unemployment rate in the fourth quarter of each year were 5.2 to 5.3 percent in 2015, and 4.9 to 5.1 percent in both 2016 and 2017. Compared with the March SEP, participants' projections for the unemployment rate edged up in 2015 but were little different over the medium term. Several participants indicated that the differences from their March projections for the unemployment rate over the medium term were modest in part because of the monetary policy response that they incorporated into their forecasts to mitigate an otherwise weaker trajectory for expenditures.

Figures 3.A and 3.B show the distribution of participants' views regarding the likely outcomes for real GDP growth and the unemployment rate through 2017 and in the longer run. Some of the diversity of views reflected participants' individual assessments of a number of factors, including the effects of lower oil prices on consumer spending and business investment, the extent to which dollar appreciation would affect real activity, the rate at which the forces that have been restraining the pace of the economic recovery would continue to abate, the trajectory for growth in consumption as labor market slack diminishes, and the appropriate path of monetary policy. Relative to the March SEP, the dispersion of participants' projections for real GDP growth in 2015 narrowed considerably, reflecting in part the release of the national income and product accounts data for the first quarter of this year, which were not available when the FOMC met in March.

The Outlook for Inflation

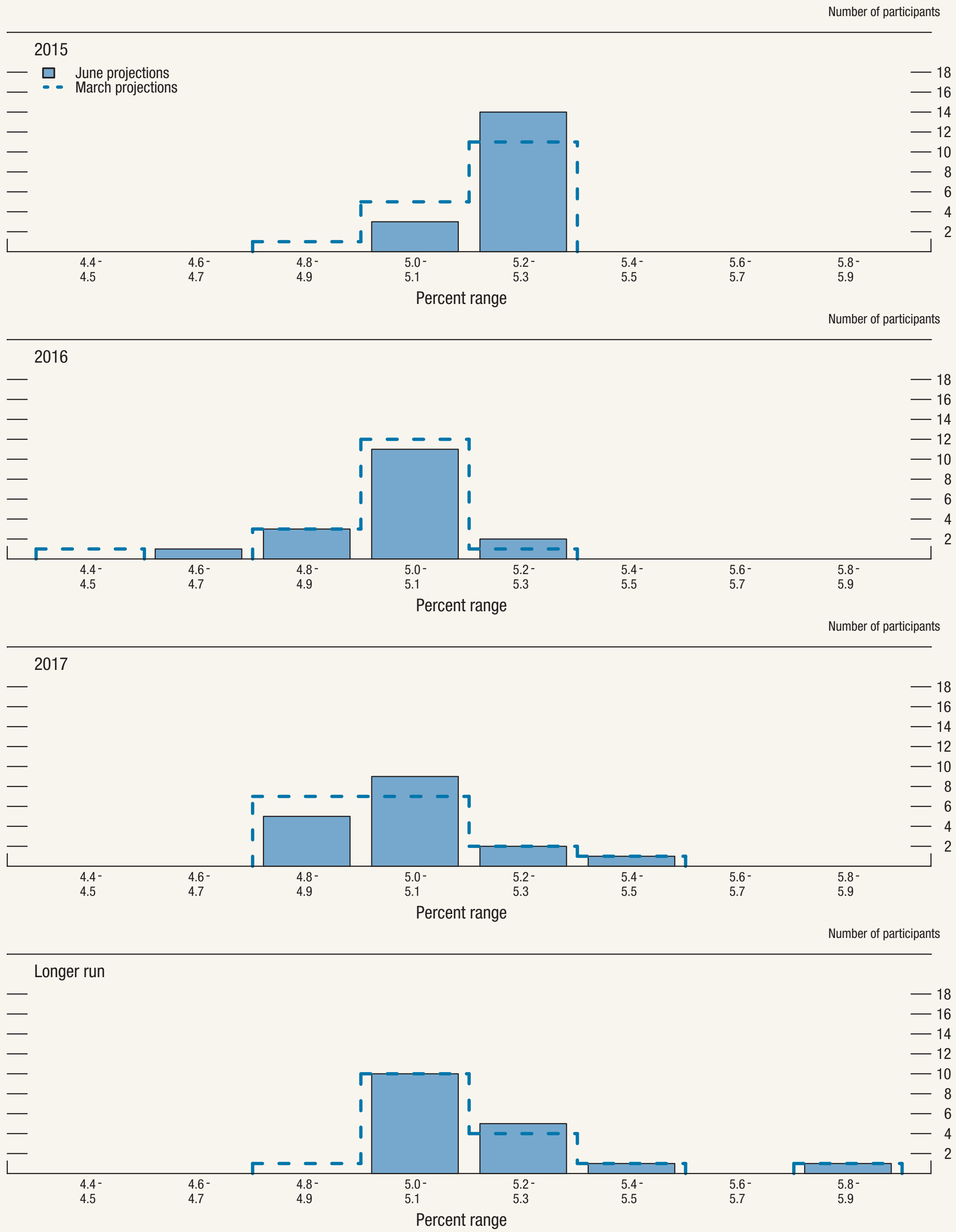
All participants projected headline PCE inflation to come in at or below 1 percent this year—mostly due to the temporary effects of earlier declines in energy prices and decreases in non-energy import prices—but to climb to 1½ percent or more in 2016. A sizable majority of participants expected that headline inflation would be at or close to the Committee's goal in

Figure 3.A. Distribution of participants' projections for the change in real GDP, 2015–17 and over the longer run



Note: Definitions of variables are in the general note to table 1.

Figure 3.B. Distribution of participants' projections for the unemployment rate, 2015–17 and over the longer run



Note: Definitions of variables are in the general note to table 1.

2017. Most participants projected only a slight decline in core PCE inflation this year and anticipated a gradual rise over the remainder of the forecast period. Relative to the March SEP, participants' projections for PCE inflation changed very little. The central tendencies for PCE inflation were 0.6 to 0.8 percent in 2015, 1.6 to 1.9 percent in 2016, and 1.9 to 2.0 percent in 2017; for core PCE inflation, the central tendencies were 1.3 to 1.4 percent in 2015, 1.6 to 1.9 percent in 2016, and 1.9 to 2.0 percent in 2017. Factors cited by participants as likely to contribute to inflation rising toward 2 percent included stable longer-term inflation expectations, steadily diminishing resource slack, a pickup in wage growth, the waning effects of declines in energy prices, and still-accommodative monetary policy.

Figures 3.C and 3.D provide information on the distribution of participants' views about the outlook for inflation. The range of projections for PCE inflation in 2015 narrowed, albeit mostly on the basis of the lowering of just one projection; otherwise, the ranges of participants' projections for both headline and core PCE inflation were nearly identical to what was reported in March.

Appropriate Monetary Policy

Participants judged that it would be appropriate to begin normalization of monetary policy as labor market indicators and inflation moved to or toward values the Committee regards as consistent with the attainment of its mandated objectives of maximum employment and price stability. As shown in figure 2, all but two participants anticipated that it would be appropriate to begin raising the target range for the federal funds rate during 2015. However, a sizable majority projected that the appropriate level of the federal funds rate would remain below their individual estimates of its longer-run normal level through 2017.

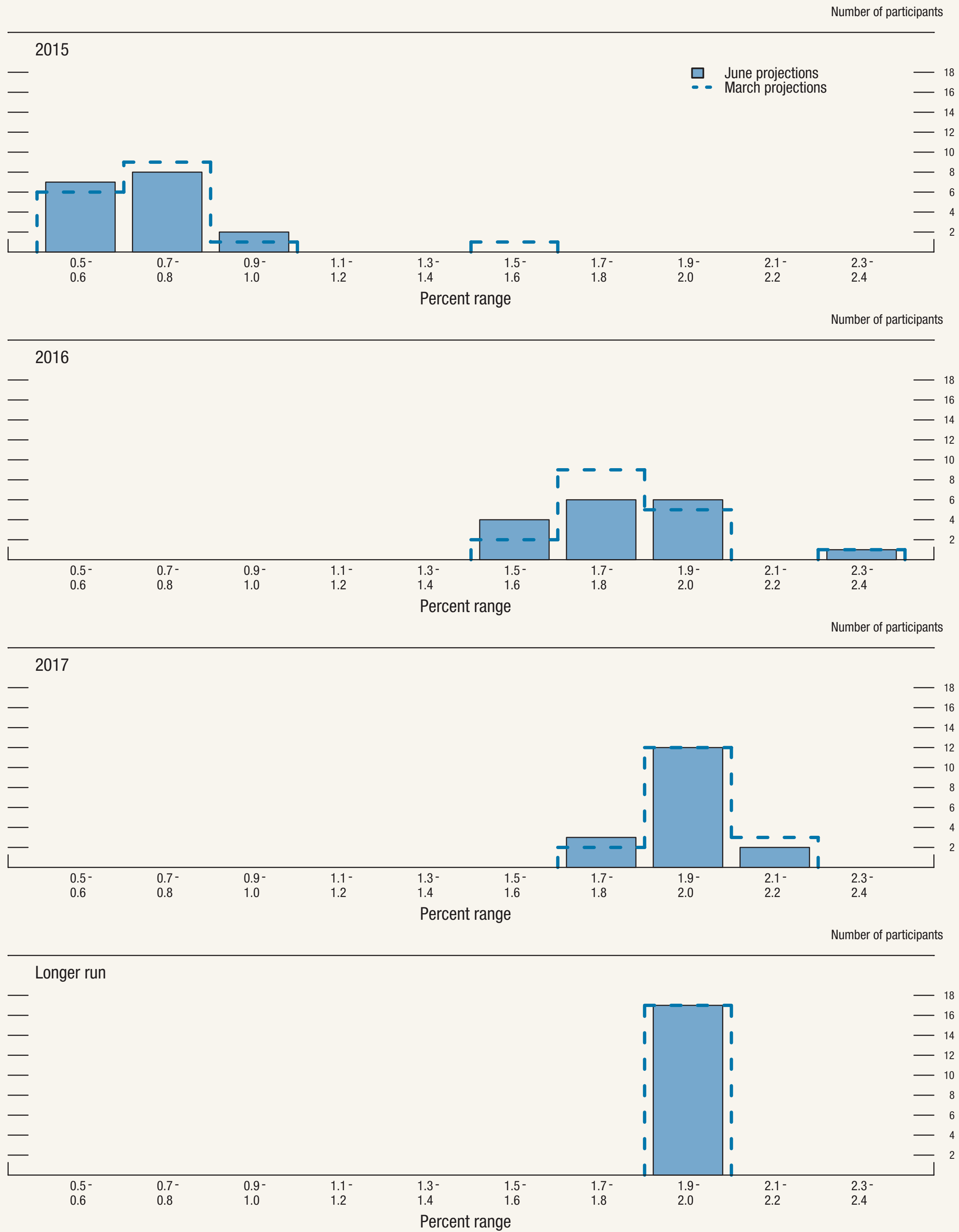
All but a few participants projected that the unemployment rate would be at or somewhat above their estimates of its longer-run normal level at the end of the year in which they judged the initial increase in the target range for the federal funds rate would be warranted, and all participants projected that unemployment would decline further after the commencement of normalization. All participants projected that inflation would be below the Committee's 2 percent objective that year, but they also saw inflation rising notably closer to 2 percent in the following year.

Figure 3.E provides the distribution of participants' judgments regarding the appropriate level of the target federal funds rate at the end of each calendar year from 2015 to 2017 and over the longer run. Relative to their March projections, most participants considered a lower level of the federal funds rate to be appropriate over some part of the projection period. The median projection for the federal funds rate at the end of 2015 was unchanged from March at 0.63 percent; however, the mean federal funds rate projection of 0.58 percent for that date was 19 basis points lower than in March. The median projections for the ends of 2016 and 2017 were 1.63 percent and 2.88 percent, respectively—both 25 basis points lower than in March. Compared with the March SEP, the dispersion of the projections for the appropriate level of the federal funds rate was a bit narrower over 2015 and 2016, and about the same as in March for 2017.

A sizable majority of participants judged that it would be appropriate for the federal funds rate at the end of 2017 to remain below its longer-run normal level, with about half of all participants projecting the federal funds rate at that time to be more than ½ percentage point lower than their estimates of its longer-run value. Participants provided a number of reasons why they thought it would be appropriate for the federal funds rate to remain below its longer-run normal level for some time after inflation and the unemployment rate were near mandate-consistent levels. These reasons included the expectation that headwinds that have been holding back the recovery would continue to exert some restraint on economic activity, that weak real activity abroad and the recent appreciation of the dollar were likely to persist and temper spending and production in the United States, that residual slack in the labor market would still be evident in some measures of labor utilization other than the unemployment rate, and that the risks to the economic outlook were asymmetric in part because of the constraints on monetary policy associated with the effective lower bound on the federal funds rate.

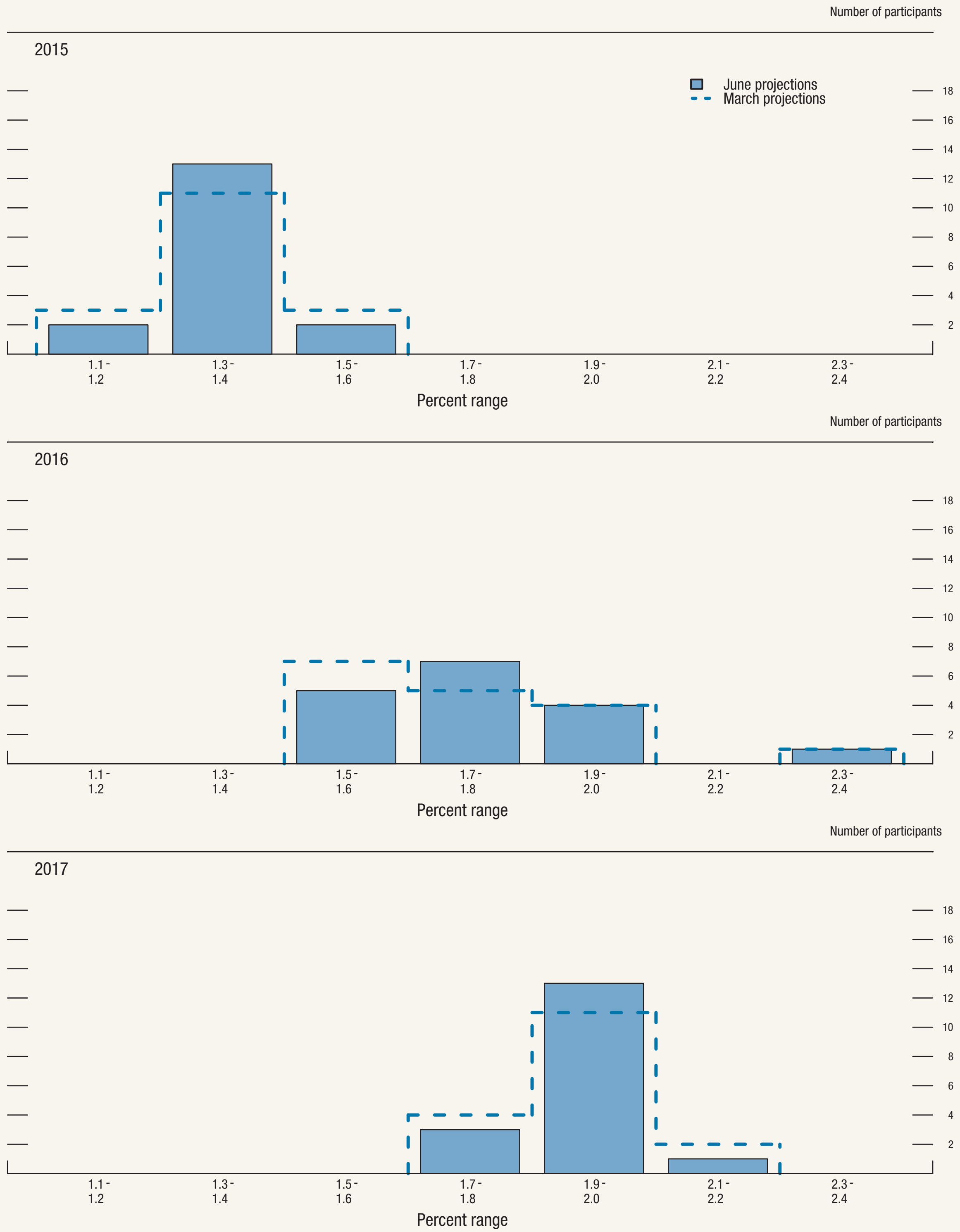
Relative to the March SEP, participants made at most modest adjustments to their estimates of the longer-run level of the federal funds rate. These changes left the median estimate of the longer-run normal federal funds rate unchanged from March at 3.75 percent; the central tendency for the federal

Figure 3.C. Distribution of participants' projections for PCE inflation, 2015–17 and over the longer run



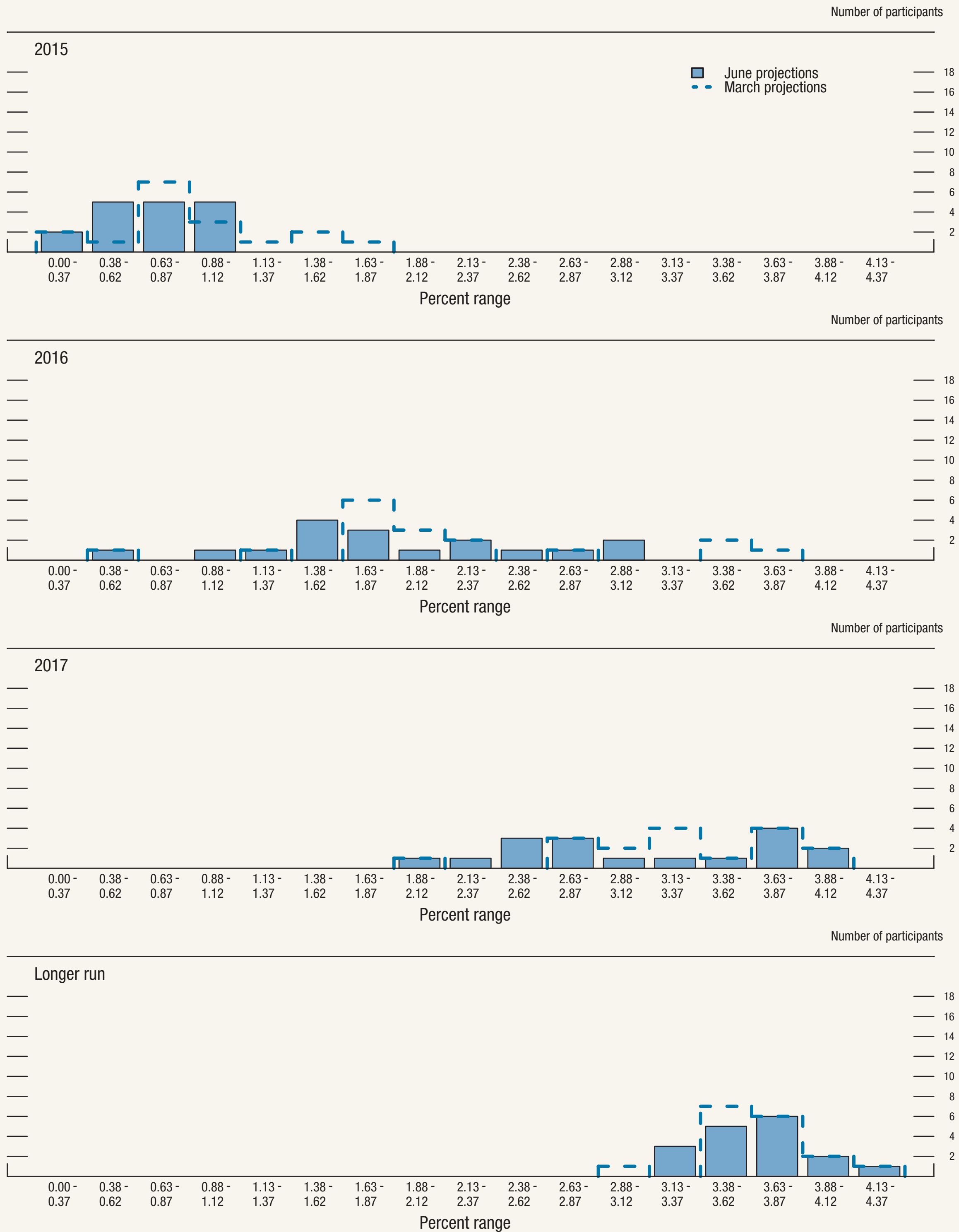
Note: Definitions of variables are in the general note to table 1.

Figure 3.D. Distribution of participants' projections for core PCE inflation, 2015–17



Note: Definitions of variables are in the general note to table 1.

Figure 3.E. Distribution of participants' judgments of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate, 2015–17 and over the longer run



Note: The midpoints of the target ranges for the federal funds rate and the target levels for the federal funds rate are measured at the end of the specified calendar year or over the longer run.

Table 2. Average historical projection error ranges
Percentage points

Variable	2015	2016	2017
Change in real GDP[1]	±1.4	±2.0	±2.1
Unemployment rate[1]	±0.4	±1.2	±1.8
Total consumer prices[2]	±0.8	±1.0	±1.0

Note: Error ranges shown are measured as plus or minus the root mean squared error of projections for 1995 through 2014 that were released in the summer by various private and government forecasters. As described in the box "Forecast Uncertainty," under certain assumptions, there is about a 70 percent probability that actual outcomes for real GDP, unemployment, and consumer prices will be in ranges implied by the average size of projection errors made in the past. For more information, see David Reifschneider and Peter Tulip (2007), "Gauging the Uncertainty of the Economic Outlook from Historical Forecasting Errors," Finance and Economics Discussion Series 2007-60 (Washington: Board of Governors of the Federal Reserve System, November), available at www.federalreserve.gov/pubs/feds/2007/200760/200760abs.html; and Board of Governors of the Federal Reserve System, Division of Research and Statistics (2014), "Updated Historical Forecast Errors," memorandum, April 9, www.federalreserve.gov/foia/files/20140409-historical-forecast-errors.pdf.

1 Definitions of variables are in the general note to table 1.

2 Measure is the overall consumer price index, the price measure that has been most widely used in government and private economic forecasts. Projection is percent change, fourth quarter of the previous year to the fourth quarter of the year indicated.

funds rate in the longer run was 3.5 to 3.75 percent, also the same as in March.

Participants' views of the appropriate path for monetary policy were informed by their judgments about the state of the economy, including their estimates of the values of the unemployment rate and other labor market indicators that would be consistent with maximum employment, the extent to which labor market conditions were currently perceived to be falling short of maximum employment, and the prospects for inflation to return to the Committee's longer-term objective of 2 percent over the medium term. Also noted by participants were the implications of international developments for the domestic economy, the uncertainty regarding the reaction by economic decisionmakers to the beginning of policy normalization after a lengthy period with the federal funds rate at the effective lower bound, the economic benefits of limiting any associated disruptions in financial markets, and a general desire to practice risk management in setting monetary policy. In addition, some participants mentioned the prescriptions of various monetary policy rules as factors they considered in judging the appropriate path for the federal funds rate.

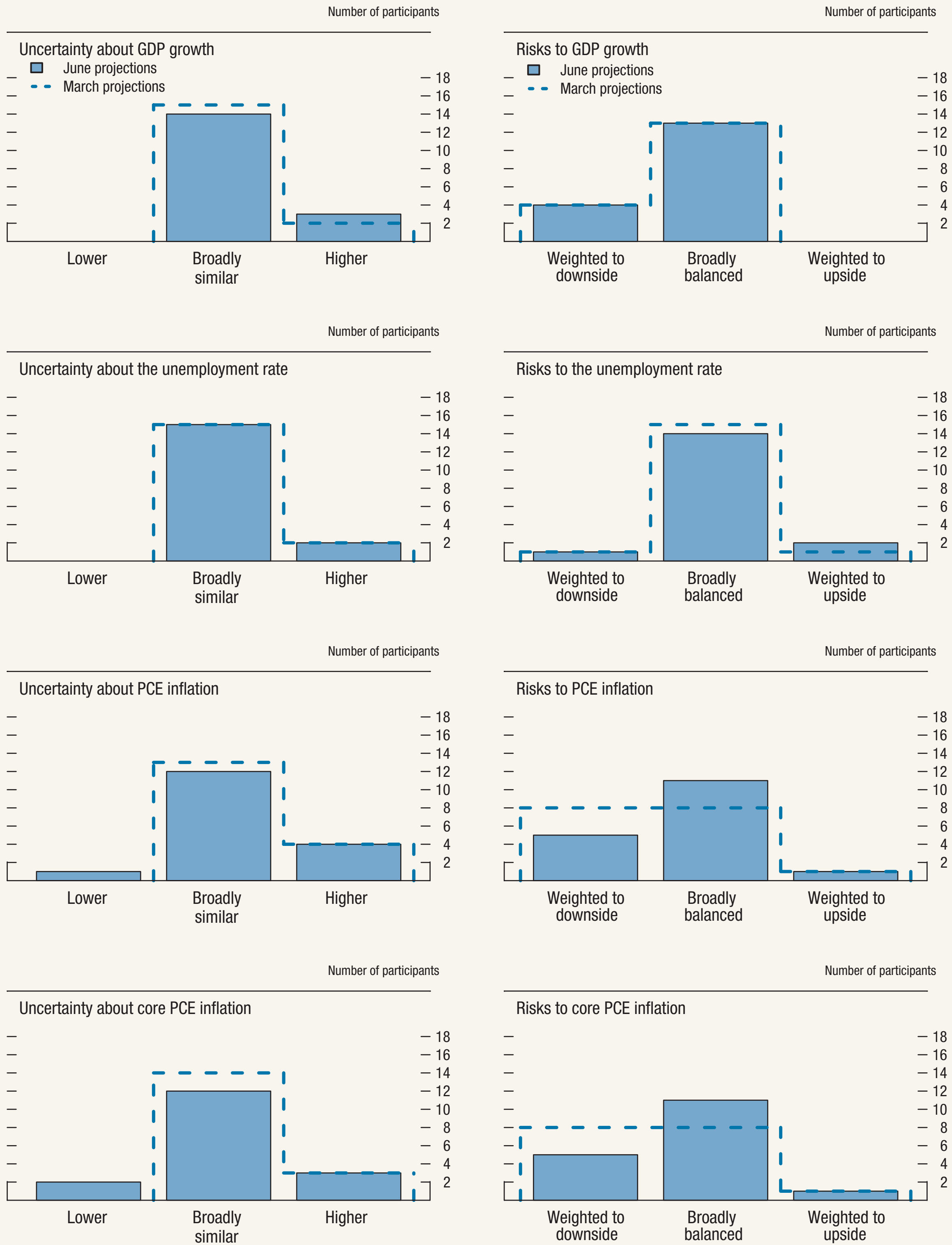
Uncertainty and Risks

A large majority of participants continued to judge the levels of uncertainty attending their projections for real GDP growth and the unemployment rate as broadly similar to the norms of the previous 20 years (figure 4).[7] As in March, most participants saw the risks to their outlooks for real GDP growth as broadly balanced, although some participants again viewed the risks to real GDP growth as weighted to the downside. Those participants who viewed the risks as weighted to the downside cited, for example, concern about the limited ability of monetary policy to respond to negative shocks to the economy when the federal funds rate is at its effective lower bound, a fragile foreign economic outlook, and weak readings on productivity growth. A large majority of participants judged the risks to the outlook for the unemployment rate to be broadly balanced.

Participants generally agreed that the levels of uncertainty associated with their inflation forecasts were broadly similar to historical norms. A few policymakers indicated that their confidence in the likelihood of inflation moving toward the policy objective of 2 percent inflation had increased. In all, 11 participants viewed the risks to their inflation forecast as balanced, up from 8 in the March SEP. The risks were still seen as tilted to the downside by 5 participants who cited the possibility that the effects of the high exchange value of the dollar on domestic inflation could persist for longer than anticipated, that longer-term inflation expectations might coalesce on a lower level of inflation than assumed, or that, in current circumstances, it could be difficult for the Committee to respond effectively to low-inflation outcomes. Conversely, 1 participant saw risks to inflation as weighted to the upside, citing uncertainty about the timing and efficacy of the Committee's withdrawal of monetary policy accommodation.

7 Table 2 provides estimates of the forecast uncertainty for the change in real GDP, the unemployment rate, and total consumer price inflation over the period from 1995 through 2014. At the end of this summary, the box "Forecast Uncertainty" discusses the sources and interpretation of uncertainty in the economic forecasts and explains the approach used to assess the uncertainty and risks attending the participants' projections.

Figure 4. Uncertainty and risks in economic projections



Note: For definitions of uncertainty and risks in economic projections, see the box "Forecast Uncertainty." Definitions of variables are in the general note to table 1.

Forecast Uncertainty

The economic projections provided by the members of the Board of Governors and the presidents of the Federal Reserve Banks inform discussions of monetary policy among policymakers and can aid public understanding of the basis for policy actions. Considerable uncertainty attends these projections, however. The economic and statistical models and relationships used to help produce economic forecasts are necessarily imperfect descriptions of the real world, and the future path of the economy can be affected by myriad unforeseen developments and events. Thus, in setting the stance of monetary policy, participants consider not only what appears to be the most likely economic outcome as embodied in their projections, but also the range of alternative possibilities, the likelihood of their occurring, and the potential costs to the economy should they occur.

Table 2 summarizes the average historical accuracy of a range of forecasts, including those reported in past *Monetary Policy Reports* and those prepared by the Federal Reserve Board's staff in advance of meetings of the Federal Open Market Committee. The projection error ranges shown in the table illustrate the considerable uncertainty associated with economic forecasts. For example, suppose a participant projects that real gross domestic product (GDP) and total consumer prices will rise steadily at annual rates of, respectively, 3 percent and 2 percent. If the uncertainty attending those projections is similar to that experienced in the past and the risks around the projections are broadly balanced, the numbers reported in table 2 would imply a probability of about 70 percent that actual GDP would expand within a range of 1.6 to 4.4 percent in the current year, 1.0 to 5.0 percent in the second year, and 0.9 to 5.1 percent in the third year. The corresponding 70 percent confidence intervals for overall inflation would be 1.2 to 2.8 percent in the current year and 1.0 to 3.0 percent in the second and third years.

Because current conditions may differ from those that prevailed, on average, over history, participants provide judgments as to whether the uncertainty attached to their projections of each variable is greater than, smaller than, or broadly similar to typical levels of forecast uncertainty in the past, as shown in table 2. Participants also provide judgments as to whether the risks to their projections are weighted to the upside, are weighted to the downside, or are broadly balanced. That is, participants judge whether each variable is more likely to be above or below their projections of the most likely outcome. These judgments about the uncertainty and the risks attending each participant's projections are distinct from the diversity of participants' views about the most likely outcomes. Forecast uncertainty is concerned with the risks associated with a particular projection rather than with divergences across a number of different projections.

As with real activity and inflation, the outlook for the future path of the federal funds rate is subject to considerable uncertainty. This uncertainty arises primarily because each participant's assessment of the appropriate stance of monetary policy depends importantly on the evolution of real activity and inflation over time. If economic conditions evolve in an unexpected manner, then assessments of the appropriate setting of the federal funds rate would change from that point forward.

Meeting Held on July 28–29, 2015

A meeting of the Federal Open Market Committee was held in the offices of the Board of Governors of the Federal Reserve System in Washington, D.C., on Tuesday, July 28, 2015, at 10:30 a.m. and continued on Wednesday, July 29, 2015, at 9:00 a.m.

Present

Janet L. Yellen
Chair

William C. Dudley
Vice Chairman

Lael Brainard

Charles L. Evans

Stanley Fischer

Jeffrey M. Lacker

Dennis P. Lockhart

Jerome H. Powell

Daniel K. Tarullo

John C. Williams

James Bullard, Esther L. George, Loretta J. Mester, Eric Rosengren, and Michael Strine
Alternate Members of the Federal Open Market Committee

Patrick Harker and Narayana Kocherlakota
Presidents of the Federal Reserve Banks of Philadelphia and Minneapolis, respectively

Helen E. Holcomb
First Vice President, Federal Reserve Bank of Dallas

Brian F. Madigan
Secretary

Matthew M. Luecke
Deputy Secretary

David W. Skidmore
Assistant Secretary

Michelle A. Smith
Assistant Secretary

Scott G. Alvarez
General Counsel

Thomas C. Baxter
Deputy General Counsel

Steven B. Kamin
Economist

Thomas Laubach
Economist

David W. Wilcox
Economist

David Altig, Thomas A. Connors, Michael P. Leahy, William R. Nelson, Daniel G. Sullivan, and William Wascher
Associate Economists

Simon Potter
Manager, System Open Market Account

Lorie K. Logan
Deputy Manager, System Open Market Account

Robert deV. Frierson[1]
Secretary of the Board, Office of the Secretary, Board of Governors

Michael S. Gibson
Director, Division of Banking Supervision and Regulation, Board of Governors

Nellie Liang
Director, Office of Financial Stability Policy and Research, Board of Governors

James A. Clouse and Stephen A. Meyer
Deputy Directors, Division of Monetary Affairs, Board of Governors

Andreas Lehnert
Deputy Director, Office of Financial Stability Policy and Research, Board of Governors

Andrew Figura, David Reifschneider, and Stacey Tevlin
Special Advisers to the Board, Office of Board Members, Board of Governors

Trevor A. Reeve
Special Adviser to the Chair, Office of Board Members, Board of Governors

Linda Robertson
Assistant to the Board, Office of Board Members, Board of Governors

David E. Lebow
Senior Associate Director, Division of Research and Statistics, Board of Governors

[1] Attended the joint session of the Federal Open Market Committee and the Board of Governors.

Michael T. Kiley
Senior Adviser, Division of Research and Statistics, and
Senior Associate Director, Office of Financial Stability Policy and Research,
Board of Governors

Ellen E. Meade[2] and Joyce K. Zickler
Senior Advisers, Division of Monetary Affairs, Board of Governors

Jeremy B. Rudd
Senior Adviser, Division of Research and Statistics, Board of Governors

Fabio M. Natalucci[3]
Associate Director, Division of Monetary Affairs, Board of Governors

Jane E. Ihrig[2]
Deputy Associate Director, Division of Monetary Affairs, Board of Governors

Glenn Follette and Steven A. Sharpe
Assistant Directors, Division of Research and Statistics, Board of Governors

Elizabeth Klee
Assistant Director, Division of Monetary Affairs, Board of Governors

Burcu Duygan-Bump
Adviser, Division of Monetary Affairs, Board of Governors

Penelope A. Beattie[1]
Assistant to the Secretary, Office of the Secretary, Board of Governors

Dana L. Burnett
Section Chief, Division of Monetary Affairs, Board of Governors

Katie Ross[1]
Manager, Office of the Secretary, Board of Governors

David H. Small
Project Manager, Division of Monetary Affairs, Board of Governors

Etienne Gagnon
Senior Economist, Division of Monetary Affairs, Board of Governors

Marie Gooding
First Vice President, Federal Reserve Bank of Atlanta

Jeff Fuhrer
Executive Vice President, Federal Reserve Bank of Boston

Troy Davig, Michael Dotsey, Evan F. Koenig, Julie Ann Remache, Samuel Schulhofer-Wohl, and Ellis W. Tallman
Senior Vice Presidents, Federal Reserve Banks of Kansas City, Philadelphia, Dallas, New York, Minneapolis, and Cleveland, respectively

Todd E. Clark,[2] Ayşegül Şahin, Mark Spiegel, and Stephen Williamson
Vice Presidents, Federal Reserve Banks of Cleveland, New York, San Francisco, and St. Louis, respectively

Matthew Nemeth[4]
Assistant Vice President, Federal Reserve Bank of New York

Robert L. Hetzel and Carlo Rosa
Senior Economists, Federal Reserve Banks of Richmond and New York, respectively

In the agenda for this meeting, it was reported that Michael Strine had been elected an alternate member of the Federal Open Market Committee and that he had executed his oath of office.

Developments in Financial Markets, Open Market Operations, and Policy Normalization

In a joint session of the Federal Open Market Committee (FOMC) and the Board of Governors of the Federal Reserve System, the manager of the System Open Market Account (SOMA) reported on developments in domestic and foreign financial markets. The deputy manager followed with a discussion of System open market operations conducted by the Open Market Desk during the period since the Committee met on June 16–17. The Desk's overnight reverse repurchase agreement (ON RRP) operations continued to provide a soft floor for money market interest rates. The deputy manager also updated the Committee on plans for tests of the Term Deposit Facility in August and of term RRPs at the end of the third quarter.

The staff next summarized some of the recent steps the System had taken to prepare further for the pro-

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2 Attended through the discussion on potential enhancements to the Summary of Economic Projections.

3 Attended the discussion of the economic and financial situation through the close of the meeting.

4 Attended through the discussion on System Open Market Account reinvestment policy.

cess of normalization of monetary policy. The staff also proposed that future changes in the FOMC's target federal funds rate range as well as associated changes in related administered interest rates—including the interest rates on excess and required reserves, the ON RRP rate, and the primary credit rate—all be effective on the day after the Committee's policy decision. Making all such rate changes effective on the same day would enhance the clarity of Federal Reserve communications. It would also help promote federal funds trading within the new target range, partly by enabling the Desk to conduct ON RRP operations at the new rate specified by the Committee on the same day that the new target range becomes effective. Participants supported the staff proposal.

By unanimous vote, the Committee ratified the Desk's domestic transactions over the intermeeting period. There were no intervention operations in foreign currencies for the System's account over the intermeeting period.

The Board meeting concluded at the end of the discussion of financial markets, open market operations, and policy normalization issues.

System Open Market Account Reinvestment Policy

In the Policy Normalization Principles and Plans adopted at its September 16–17, 2014 meeting, the Committee indicated that it expects to cease or commence phasing out reinvestments of principal on securities held in the SOMA after it begins increasing the target range for the federal funds rate; the timing of this decision will depend on how economic and financial conditions and the economic outlook evolve. A staff briefing at this meeting provided background on alternative strategies the Committee could employ with respect to reinvestments. These strategies included either characterizing qualitatively or specifying numerically the economic conditions under which reinvestments would cease, or establishing a date or time interval following the initial firming of the federal funds rate for the new policy on reinvestments to begin. The briefing also noted that the Committee could phase out reinvestments gradually or end reinvestments all at once.

In their discussion, most participants expressed a preference that the timing of the cessation of reinvestments be based on a qualitative assessment of economic conditions and the outlook. Participants generally favored continuing reinvestments during the early stages of normalization, initially using only increases in the target range for the federal funds rate to reduce monetary policy accommodation. This approach was viewed as consistent with the Committee's plans to rely on changes in the target range for the federal funds rate as the primary indicator of the stance of monetary policy. Most participants thought that it might be best either to wind down reinvestments or to manage them in a manner that would smooth the decline in the balance sheet in a predictable way. However, some participants supported ceasing reinvestments all at once at the appropriate time. Participants indicated a range of views on various issues specific to agency mortgage-backed securities (MBS) and Treasury markets. Using the same strategy for both agency MBS and Treasury maturities was viewed as simpler to communicate, but a number of market-specific considerations might suggest employing different strategies for each asset class. No decisions regarding the Committee's strategy for ceasing or phasing out reinvestments were made at this meeting. Participants requested additional analysis from the staff related to alternative approaches to halting or phasing out reinvestments, including consideration of the possible market effects, and agreed that it would be helpful to continue to discuss these issues at upcoming meetings.

Potential Enhancements to the Summary of Economic Projections

Next, participants considered a proposal by the subcommittee on communications for a few modest modifications to the Summary of Economic Projections (SEP) that could provide further information to the public. A staff briefing reviewed the subcommittee's proposal for publishing median values of the projections starting at the time of the September meeting, noting that public commentary frequently focuses on the midpoint of the central tendency of the projections and that medians would provide a more robust summary measure of the distribution of participants' views. The subcommittee also proposed the removal of the histogram depicting participants' preferred year of liftoff from the SEP exhibits at the time that the Committee decides to commence the normalization process or in the first SEP thereafter. In their comments, participants noted that the inclusion of medians would provide an additional useful summary statistic of participants' perspectives; however, they also emphasized that the medians would not represent a collective view or Committee forecast. Participants unanimously supported the addition of

medians for all variables—economic growth, the unemployment rate, total and core inflation, and individual assessments of the projected appropriate federal funds rate—to the September SEP and the removal of the histogram of preferred liftoff years following the commencement of normalization. The briefing also raised the possibility of eventually including graphs in the SEP that would illustrate the uncertainty that attends participants' macroeconomic projections, but noted that further work was needed before a specific proposal could be presented to the Committee. The Chair asked the subcommittee on communications to continue to investigate the possibility of incorporating a graphical depiction of uncertainty into the SEP.

Staff Review of the Economic Situation

The information reviewed for the July 28–29 meeting suggested that real gross domestic product (GDP) rose moderately in the second quarter after edging down in the first quarter, and that labor market conditions continued to improve. Consumer price inflation continued to run below the FOMC's longer-run objective of 2 percent, restrained by earlier declines in energy prices and further decreases in non-energy import prices. Survey measures of longer-term inflation expectations remained stable, while market-based measures of inflation compensation were still low.

Total nonfarm payroll employment continued to expand at a solid pace in June. The unemployment rate declined to 5.3 percent, its lowest reading so far this year, and the share of workers employed part time edged lower; however, the labor force participation rate and the employment-to-population ratio both moved down. The rate of private-sector job openings was unchanged in May at a high level, and the rates of hiring and quits were also little changed. On balance, labor market indicators suggested that underutilization of labor resources had diminished since early this year.

After declining for five consecutive months, industrial production rose in June, partly reflecting an increase in the output of mines. Nonetheless, for the second quarter as a whole, mining output contracted sharply and manufacturing production rose only modestly; both sectors were weak over the first half of the year, likely reflecting the continuing effects of earlier increases in the foreign exchange value of the dollar and lower crude oil prices. Automakers' assembly schedules pointed to a solid gain in light motor vehicle production in the third quarter, but broader indicators of manufacturing production, including readings on new orders from national and regional manufacturing surveys, generally suggested only modest increases in factory output in the coming months.

Real personal consumption expenditures (PCE) appeared to have risen at a solid pace in the second quarter. The components of the nominal retail sales data used by the Bureau of Economic Analysis to construct its estimate of PCE edged down in June, but the decline for that group of components followed a strong reading in May. Similarly, light vehicle sales in June partly reversed a large increase in May but remained robust. Among the factors that influence household spending, real disposable income rose in May and gains in households' net worth were supported by further advances in home values. Moreover, consumer sentiment in the University of Michigan Surveys of Consumers in early July remained near its highest level since before the most recent recession.

Activity in the housing sector improved somewhat in recent months but remained slow. Starts of new single-family houses declined in June but rose for the quarter as a whole, and the level of permit issuance pointed to increases in starts in subsequent months. In the multifamily sector, starts and permits increased sharply in June, likely reflecting in large part a pull-forward of activity due to an expiring tax credit in New York City. Sales of new homes declined in June; in contrast, existing home sales increased and pending home sales were at a level consistent with little change in closed sales over the next couple of months.

Real private expenditures for business equipment and intellectual property products appeared to rise at a modest rate in the second quarter. Nominal shipments of nondefense capital goods excluding aircraft were little changed in June. Forward-looking indicators, such as new orders for these capital goods along with national and regional surveys of business conditions, pointed to further modest increases in business equipment spending in the near term. Real spending for nonresidential structures excluding drilling and mining appeared to rise solidly in the second quarter, as firms' nominal outlays for such structures increased at a robust pace again in May. In contrast, real business spending for drilling and mining structures likely fell sharply last quarter, consistent with the drop in the number of oil rigs in operation. How-

ever, the rig count appeared to be bottoming out in recent weeks.

Nominal federal spending data through June indicated that real federal government purchases likely decreased in the second quarter. However, real state and local government purchases appeared to have risen last quarter, as nominal construction spending rebounded following a decline in the first quarter and payrolls for these governments were little changed.

After narrowing in April, the U.S. international trade deficit widened in May, as exports decreased more than imports. The decrease in exports largely reflected a fall in aircraft shipments. The decline in imports was driven by reductions in imports of capital goods, particularly computers and oilfield equipment. By contrast, imports of automotive products increased to a record level. While real net exports made a large negative contribution to the change in real GDP in the first quarter of 2015, the available trade data indicated that the drag on GDP growth exerted by net exports in the second quarter was considerably smaller.

Total U.S. consumer prices, as measured by the PCE price index, only edged up over the 12 months ending in May, held down primarily by earlier large declines in energy prices. Core PCE inflation, which excludes food and energy prices, was 1¼ percent over the same period, restrained in part by declines in the prices of non-energy imports. Over the 12 months ending in June, total consumer prices as measured by the consumer price index (CPI) were little changed, while the core CPI increased 1¾ percent. Measures of expected longer-run inflation from a variety of surveys, including the Michigan survey and the Desk's Survey of Primary Dealers, remained stable. However, market-based measures of inflation compensation were still low, although they were somewhat higher than early in the year. Over the 12 months ending in June, nominal average hourly earnings for all employees increased 2 percent.

Foreign economic growth appeared to remain subdued in the second quarter. In Canada, indicators suggested that low oil prices weighed on investment in the energy sector, and energy production in April was curtailed by wildfires and maintenance shutdowns. Economic activity also weakened in some Latin American countries. By contrast, second-quarter economic growth was strong in China and in the United Kingdom, and euro-area indicators were consistent with continued moderate economic expansion. Headline foreign inflation remained low, importantly reflecting past oil price declines.

Staff Review of the Financial Situation

Financial conditions were affected by developments abroad over the intermeeting period but were little changed on balance. Federal Reserve communications and economic data releases, including the June employment report and retail sales data, put some downward pressure on the path of expected future short-term interest rates. On net, 5-year and 10-year Treasury yields were somewhat lower, measures of inflation compensation over the next 5 years based on Treasury Inflation-Protected Securities declined, equity prices were little changed, and the foreign exchange value of the dollar rose modestly.

The expected path of the federal funds rate moved down following the June FOMC statement and the Chair's postmeeting press conference. Market participants reportedly saw as notable the downward revisions in the June SEP to FOMC participants' projections of the appropriate level of the federal funds rate at the end of 2015. Results from the Desk's July Survey of Primary Dealers and Survey of Market Participants indicated that a majority of respondents to both surveys continued to view the September 2015 meeting as the most likely time for the first increase in the target range for the federal funds rate; however, respondents to both surveys continued to place significant probability on scenarios in which the first increase in the target range occurred at subsequent meetings. As in the June survey, after the initial increase, respondents expected the target range for the federal funds rate to rise only gradually.

Over the intermeeting period, market yields fluctuated in response to news about developments abroad, including Greek debt negotiations. Yields on 5- and 10-year nominal Treasury securities fell somewhat on net. Market-based measures of inflation compensation over the next 5 years moved lower amid a decline in oil prices, whereas inflation compensation 5 to 10 years ahead was relatively stable.

On balance, broad U.S. equity price indexes were little changed over the intermeeting period. Option-implied volatility on the S&P 500 index over the next month increased for a time in response to foreign developments before falling back to the lower end of its range over recent years. Based on reports from about 40 percent of firms in the S&P 500 index, earnings per share in the second quarter were about

unchanged or slightly higher than their first-quarter levels. Spreads on 10-year triple-B-rated and speculative-grade corporate bonds over comparable-maturity Treasury securities widened somewhat over the period.

Financing conditions for nonfinancial firms continued to be accommodative. Corporate bond issuance remained strong in the second quarter; issuance of institutional leveraged loans picked up noticeably, likely due in part to tighter loan spreads as compared with the beginning of the year. Commercial and industrial loans on banks' balance sheets continued to expand.

Financing for commercial real estate (CRE) remained broadly available. CRE loans on banks' books expanded in the second quarter, consistent with stronger loan demand reported in the July Senior Loan Officer Opinion Survey on Bank Lending Practices (SLOOS). Issuance of commercial mortgage-backed securities continued to be robust.

According to available measures, residential mortgage lending conditions stayed accommodative for many consumers. However, credit conditions remained tight for riskier borrowers, such as those with low credit scores, undocumented income, or high debt-to-income ratios. Interest rates on 30-year fixed-rate mortgages were little changed, in line with MBS yields and other longer-term interest rates.

Outstanding balances of auto and student loans continued to expand at a robust pace through May. Banks indicated in the July SLOOS that their lending standards for credit card loans had eased somewhat relative to the past few years. However, a number of indicators suggested that terms on credit card loans remained tight, especially for subprime borrowers.

Credit conditions in municipal bond markets were stable over the intermeeting period. Despite the announcement that Puerto Rico might seek to restructure at least part of its debt, spreads on an index of 20-year general obligation municipal bonds over comparable-maturity Treasury securities changed little, and the pace of issuance of long-term municipal bonds remained robust.

After having widened amid concerns about the difficult negotiations between Greece and its creditors, Greek and other peripheral euro-area sovereign spreads narrowed, on net, over the intermeeting period as news emerged of progress toward an agreement. In China, stock prices fell substantially, prompting a number of policy and regulatory actions by Chinese officials to support the stock market. While these developments attracted investor attention, reaction in asset markets outside Greece and China was limited on balance.

Sovereign bond yields and monetary policy expectations in the United Kingdom changed little, on net, over the intermeeting period. By contrast, yields in Canada, New Zealand, Norway, and Sweden decreased following weaker-than-expected macroeconomic data releases and additional monetary policy accommodation. The foreign exchange value of the U.S. dollar increased during the intermeeting period against the currencies of major U.S. trading partners. Stock markets in most advanced foreign economies ended the period higher. Equity prices in emerging market economies, however, generally moved lower on net.

The staff provided its latest report on potential risks to financial stability. The strong capital position of the U.S. banking sector, low to moderate use of leverage elsewhere in the financial system, stability in the level of maturity transformation by financial institutions, and still-moderate rates of borrowing by the private nonfinancial sector were seen as factors supporting overall financial stability. However, rising debt burdens for riskier businesses as well as somewhat elevated valuations and loosening lending standards for many asset classes pointed to some increasing concerns. The effect of financial stresses related to Greece and China on the largest U.S. financial firms was limited to date, perhaps reflecting the relatively strong financial positions and low direct exposures among such firms and a view among market participants that foreign authorities would take actions to stem spillovers.

Staff Economic Outlook

The U.S. economic forecast prepared by the staff for the July FOMC meeting was broadly similar to that prepared for the June FOMC meeting. Real GDP was again expected to increase faster in the second half of this year than in the first half and to expand more rapidly than potential output in 2016 and 2017, even as the normalization of the stance of monetary policy was assumed to proceed. However, real GDP growth over the medium term was revised down a small amount, in part because of a slightly stronger forecast for the exchange value of the dollar. The staff also made two small adjustments to its supply-

side assumptions. First, the projected rates of productivity gains and potential output growth over the medium term were trimmed. With actual and potential GDP growth both a bit weaker, the projected narrowing of the output gap over the medium term was little revised. Second, the staff lowered slightly its estimate of the longer-run natural rate of unemployment. The unemployment rate was expected to decline gradually to this revised estimate.

The staff's forecast for inflation was revised down, particularly in the near term, as the decline in crude oil prices over the intermeeting period was expected to result in lower consumer energy prices. Although energy prices and non-oil import prices were expected to begin rising steadily next year, the staff continued to project that inflation would be below the Committee's longer-run objective of 2 percent over 2016 and 2017. Inflation was anticipated to move up gradually to 2 percent thereafter, with inflation expectations in the longer run assumed to be consistent with the Committee's objective and slack in labor and product markets projected to have waned.

The staff viewed the uncertainty around its July projections for real GDP growth, the unemployment rate, and inflation as similar to the average of the past 20 years. The risks to the forecast for real GDP and inflation were seen as tilted to the downside, reflecting the staff's assessment that neither monetary nor fiscal policy was well positioned to help the economy withstand substantial adverse shocks. At the same time, the staff viewed the risks around its outlook for the unemployment rate as roughly balanced.

Participants' Views on Current Conditions and the Economic Outlook

In their discussion of the economic situation and the outlook, meeting participants viewed the information received over the intermeeting period as suggesting that economic activity had been expanding moderately in recent months. The pace of job gains had been solid and the unemployment rate had declined, with a range of labor market indicators suggesting that underutilization of labor resources had continued to diminish. Participants generally viewed the incoming data as confirming their earlier assessment that the weak report on real GDP in the first quarter reflected transitory factors and expected that real economic activity would continue to expand at a moderate pace over the balance of the year, leading to further improvement in labor market conditions. However, a few participants observed that although GDP growth appeared to have picked up in recent months relative to the first-quarter pace, the level of GDP remained lower than had been projected earlier in the year. Inflation continued to run below the Committee's 2 percent longer-run objective, partly reflecting earlier declines in energy prices and further decreases in prices of non-energy imports. Market-based measures of inflation compensation remained low, while survey-based measures of longer-term inflation expectations remained stable. Participants generally anticipated that inflation would rise gradually toward 2 percent as the labor market improved further and the transitory effects of earlier declines in energy and import prices dissipated. Although many continued to see some downside risks arising from economic and financial developments abroad, participants generally viewed the risks to the outlook for domestic economic activity and the labor market as nearly balanced.

With respect to consumer spending, the incoming data had been uneven but participants cited reports from contacts suggesting a pickup since the first quarter. Participants generally expected consumer spending to rise moderately over the near term. Continued gains in employment and income, high household net worth, and low gasoline prices were viewed as factors that should support consumer spending in coming months. Consumer credit conditions were also seen as favorable, with business contacts pointing to steady loan growth, especially for auto loans and credit cards. However, a couple of participants were concerned about the outlook for consumer spending, noting that spending had been disappointing in recent months even though real income had already been boosted by the lower gasoline prices and the improved labor market.

Participants viewed the recent data on housing starts and permits as well as the higher levels of sales and prices as indicative of continued recovery in the housing sector. The easing of lending standards for residential mortgages evidenced in the most recent SLOOS was cited as a factor likely to support further progress. However, a couple of participants noted that they did not expect this sector to be a major contributor to economic growth over the remainder of the year.

Participants also observed that activity in other sectors of the economy continued to be subdued. Business fixed investment remained soft even as the drag

from the sharp contraction in drilling rigs over the first half of this year appeared to be fading. Although investment spending was expected to pick up over the second half of this year, a few participants were concerned that the further decline in oil prices that had occurred in recent weeks might continue to hold down energy-related investment. In addition, government spending was expected to add very little to growth in aggregate spending this year. Participants also expected net exports to continue to subtract from GDP growth over the second half of the year, reflecting in part the damping influence of the dollar's earlier appreciation.

Industry contacts pointed to generally solid business conditions, with firms in many parts of the country continuing to report positive assessments of current activity and optimism about future sales. Manufacturing activity had slowed somewhat over the intermeeting period, but conditions were mixed across different industries. Those firms connected to the auto, aerospace, and construction industries, for example, reported strong demand. However, businesses particularly exposed to the appreciation of the dollar or falling commodity prices—including those in the heavy equipment and steel, oil and gas extraction, and petrochemical industries—reported slower activity. The service sector reports were mostly positive. Overall, most contacts viewed the recent slow-down in manufacturing as likely to prove temporary and remained optimistic about future demand, even though the recent decreases in oil prices and the possibility of adverse spillovers from slower economic growth in China raised some concerns. Regarding the agricultural sector, a very wet spring had significantly reduced the percentage of crops in good condition, and declining commodity prices had further reduced expectations for farm income.

In their discussion of the foreign economic outlook, participants generally viewed the risks from the fiscal and financial problems in Greece as having diminished somewhat, although it was observed that Greece still faced many challenges and that Greek economic progress was likely to be limited over the near term. While the recent Chinese stock market decline seemed to have had limited implications to date for the growth outlook in China, several participants noted that a material slowdown in Chinese economic activity could pose risks to the U.S. economic outlook. Some participants also discussed the risk that a possible divergence in interest rates in the United States and abroad might lead to further appreciation of the dollar, extending the downward pressure on commodity prices and the weakness in net exports.

Participants agreed that labor market conditions had improved further, citing increases in payroll employment and job openings, the decrease in the unemployment rate, and some further reduction in broader measures of labor market underutilization. Although the labor force participation rate declined in June and the national hiring and quits rates were little changed in May, several participants noted that reports from business contacts in their Districts pointed to continued job gains and relatively strong labor markets. They cited anecdotal reports of firms having concerns about retaining workers and facing difficulties in filling even medium- and lower-skilled jobs. However, several participants contended that, despite the progress over the past few years, some noticeable margins of slack remained, citing as evidence the high number of workers not actively searching for jobs but available and interested in work as well as the high share of employees working part time for economic reasons compared with pre-recession levels.

The ongoing rise in labor demand still appeared not to have led to a broad-based firming of wage increases. While business contacts in a number of Districts continued to report that the pace of wage increases had picked up, recent national readings on hourly compensation and average hourly earnings of employees had remained subdued. The most recent employment cost index, released in April, had suggested an increase in wage gains. However, questions were raised about how to interpret this reading because the pickup was concentrated in the Northeast and might have resulted from particular factors that were not associated solely with a general tightening of labor market conditions, such as minimum wage adjustments and market conditions in certain occupations. In addition, it was noted that considerable uncertainty remained about when wages might begin to accelerate and whether that development might translate into increased price inflation.

Participants discussed how recent developments influenced their expectations for reaching the FOMC's 2 percent inflation objective over the medium term. Total PCE inflation continued to run below the Committee's longer-run objective. Core PCE price inflation, as measured on a 12-month change basis, also remained low, but other measures, such as the trimmed mean PCE and median CPI, continued to run at higher levels than core PCE inflation. Moreover, core CPI inflation had picked up

over recent months. Some participants cited downside risks to inflation, pointing to the absence of any noticeable response of inflation to the reduction in resource slack over the past several years, risks of further declines in oil and commodity prices, and the possibility of further appreciation in the dollar. Although most readings on longer-term inflation expectations were little changed recently, participants discussed how to interpret downward movements in some survey and market-based measures of inflation expectations over the past few years. Most participants still expected that the downward pressure on inflation from the previous declines in energy prices and the effects of past dollar appreciation would prove to be temporary. Participants generally continued to anticipate that, with appropriate monetary policy, inflation would move up to the Committee's objective over the medium term, reflecting the anticipated tightening of product and labor markets and stable longer-term inflation expectations.

Participants discussed a range of topics associated with financial market developments and financial stability. They commented on issues related to the deterioration in bond market liquidity reported by market participants, the potential migration of leveraged loan underwriting to the nonbank sector in light of current supervisory guidance, and the assessment of valuation risks when term premiums were narrow while most other risk premiums were not. In addition, it was observed that Puerto Rico faced significant challenges servicing its debts, though the risks of contagion to other U.S. financial markets were judged to be low. Participants also noted the challenges associated with identifying newly emerging risks as well as the implications for monetary policy of a hypothetical future situation in which financial imbalances were increasing.

During their discussion of economic conditions and monetary policy, participants mentioned a number of considerations associated with the timing and pace of policy normalization. Most judged that the conditions for policy firming had not yet been achieved, but they noted that conditions were approaching that point. Participants observed that the labor market had improved notably since early this year, but many saw scope for some further improvement. Many participants indicated that their outlook for sustained economic growth and further improvement in labor markets was key in supporting their expectation that inflation would move up to the Committee's 2 percent objective, and that they would be looking for evidence that the economic outlook was evolving as they anticipated. However, some participants expressed the view that the incoming information had not yet provided grounds for reasonable confidence that inflation would move back to 2 percent over the medium term and that the inflation outlook thus might not soon meet one of the conditions established by the Committee for initiating a firming of policy. Several of these participants cited evidence that the response of inflation to the elimination of resource slack might be attenuated and expressed concern about risks of further downward pressure on inflation from international developments. Another concern related to the risk of premature policy tightening was the limited ability of monetary policy to offset downside shocks to inflation and economic activity when the federal funds rate was near its effective lower bound.

Some participants, however, emphasized that the economy had made significant progress over the past few years and viewed the economic conditions for beginning to increase the target range for the federal funds rate as having been met or were confident that they would be met shortly. A few of these participants judged that the stance of monetary policy, including the extraordinarily low level of the federal funds rate and the current size of the Federal Reserve balance sheet, was very accommodative. A couple of others thought that an appreciable delay in beginning the process of normalization might result in an undesirable increase in inflation or have adverse consequences for financial stability. Some participants advised that progress toward the Committee's objectives should be viewed in light of the cumulative gains made to date without overemphasizing month-to-month changes in incoming data. It was also noted that a prompt start to normalization would likely convey the Committee's confidence in prospects for the economy.

In their discussion of the appropriate path for the federal funds rate and associated communications at and after the time of the first increase in the target range, participants expressed support for emphasizing that the course of policy would remain conditional on the Committee's assessment of economic developments and the outlook relative to its objectives. It was also noted that the Committee's communications around the time of the first rate increase should emphasize that the expected path for policy, not the initial increase, would be the most important determinant of financial conditions and should acknowledge that policy would continue to be accommodative to support progress toward the Com-

mittee's dual objectives. While monetary policy adjustments ultimately would be data dependent, some participants expressed the view that, in light of their current outlook, it likely would be appropriate to adjust the federal funds rate gradually after the first increase to help ensure that the economy would be able to absorb higher interest rates and that inflation was moving toward the Committee's objective.

Committee Policy Action

In their discussion of monetary policy for the period ahead, members judged that information received since the FOMC met in June indicated that economic activity had been expanding moderately in recent months. The labor market had also continued to improve, with solid job gains and declining unemployment. A range of labor market indicators, on balance, suggested that underutilization of labor resources had diminished since early this year. Members generally viewed these developments, together with appropriate monetary policy accommodation, as supporting their expectations for moderate economic growth in the medium term and for further improvement in labor market conditions. They also continued to see the risks to the outlook for economic activity and the labor market as nearly balanced. Inflation had continued to run below the Committee's longer-run objective, but members expected it to rise gradually toward 2 percent over the medium term as the labor market improved further and the transitory effects of earlier declines in energy and import prices dissipated.

In assessing whether economic conditions had improved sufficiently to initiate a firming in the stance of monetary policy, the Committee noted that, on balance, a range of labor market indicators suggested that underutilization of labor resources had diminished further. Most members saw room for some additional progress in reducing labor market slack, although several viewed current labor market conditions as at or very close to those consistent with maximum employment. Many members thought that labor market underutilization would be largely eliminated in the near term if economic activity evolved as they expected. However, several were concerned that labor market conditions consistent with maximum employment could take longer to achieve, noting, for example, the lack of convincing signs of accelerating wages, which might be signaling that the natural rate of unemployment could currently be lower than they previously thought.

In considering the Committee's criteria with respect to inflation for beginning policy normalization, most members viewed the incoming data as reinforcing their earlier assessment that, although inflation continued to run below the Committee's objective, the downward pressure on inflation from the previous decreases in energy prices and the effects of past dollar appreciation would abate. However, core inflation on a year-over-year basis also was still below 2 percent. Moreover, some members continued to see downside risks to inflation from the possibility of further dollar appreciation and declines in commodity prices. In addition, several members noted that higher rates of resource utilization appeared to have had only very limited effects to date on wages and prices, and underscored the uncertainty surrounding the inflation process as well as the role and dynamics of inflation expectations. The Committee agreed to continue to monitor inflation developments closely, with almost all members indicating that they would need to see more evidence that economic growth was sufficiently strong and labor markets conditions had firmed enough for them to feel reasonably confident that inflation would return to the Committee's longer-run objective over the medium term.

The Committee concluded that, although it had seen further progress, the economic conditions warranting an increase in the target range for the federal funds rate had not yet been met. Members generally agreed that additional information on the outlook would be necessary before deciding to implement an increase in the target range. One member, however, indicated a readiness to take that step at this meeting but was willing to wait for additional data to confirm a judgment to raise the target range.

In their discussion of language for the postmeeting statement, members agreed that the wording should reflect their assessment that economic conditions showed continued progress toward the Committee's objectives. The Committee updated the statement to indicate that economic activity had been expanding moderately in recent months and that it had seen further improvement in labor market conditions over the intermeeting period, pointing specifically to solid job gains and declining unemployment. In addition, the Committee agreed to state that a range of labor market indicators suggested that underutilization of labor resources had diminished since early this year, acknowledging the cumulative progress that had been made in the labor market. The Committee also modified the discussion of inflation developments slightly to recognize the more recent declines in energy prices

while restating the expectation that inflation would rise gradually toward 2 percent over the medium term as the labor market improved further and the transitory effects of earlier declines in energy and import prices dissipated.

The Committee agreed to maintain the target range for the federal funds rate at 0 to ¼ percent and to reaffirm in the statement that the Committee's decision about how long to maintain the current target range for the federal funds rate would depend on its assessment of actual and expected progress toward its objectives of maximum employment and 2 percent inflation. Members also agreed that their evaluation of progress on their objectives would take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments. To further reflect the Committee's assessment that economic conditions had continued to progress toward its objectives, the Committee slightly altered its characterization of when it anticipates that it will be appropriate to begin the process of policy normalization. Specifically, members agreed to indicate the Committee's anticipation that it would be appropriate to raise the target range for the federal funds rate when it has seen some further improvement in the labor market and is reasonably confident that inflation will move back to its 2 percent objective over the medium term.

The Committee also maintained its policy of reinvesting principal payments from agency debt and agency mortgage-backed securities in agency mortgage-backed securities and of rolling over maturing Treasury securities at auction. This policy, by keeping the Committee's holdings of longer-term securities at sizable levels, should help maintain accommodative financial conditions. The Committee reiterated its expectation that, even after employment and inflation are near mandate-consistent levels, economic conditions may, for some time, warrant keeping the target federal funds rate below levels the Committee views as normal in the longer run.

At the conclusion of the discussion, the Committee voted to authorize and direct the Federal Reserve Bank of New York, until it was instructed otherwise, to execute transactions in the SOMA in accordance with the following domestic policy directive:

> "Consistent with its statutory mandate, the Federal Open Market Committee seeks monetary and financial conditions that will foster maximum employment and price stability. In particular, the Committee seeks conditions in reserve markets consistent with federal funds trading in a range from 0 to ¼ percent. The Committee directs the Desk to undertake open market operations as necessary to maintain such conditions. The Committee directs the Desk to maintain its policy of rolling over maturing Treasury securities into new issues and its policy of reinvesting principal payments on all agency debt and agency mortgage-backed securities in agency mortgage-backed securities. The Committee also directs the Desk to engage in dollar roll and coupon swap transactions as necessary to facilitate settlement of the Federal Reserve's agency mortgage-backed securities transactions. The System Open Market Account manager and the secretary will keep the Committee informed of ongoing developments regarding the System's balance sheet that could affect the attainment over time of the Committee's objectives of maximum employment and price stability."

The vote encompassed approval of the statement below to be released at 2:00 p.m.:

> "Information received since the Federal Open Market Committee met in June indicates that economic activity has been expanding moderately in recent months. Growth in household spending has been moderate and the housing sector has shown additional improvement; however, business fixed investment and net exports stayed soft. The labor market continued to improve, with solid job gains and declining unemployment. On balance, a range of labor market indicators suggests that underutilization of labor resources has diminished since early this year. Inflation continued to run below the Committee's longer-run objective, partly reflecting earlier declines in energy prices and decreasing prices of non-energy imports. Market-based measures of inflation compensation remain low; survey-based measures of longer-term inflation expectations have remained stable.
>
> Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee expects that, with appropriate policy accommodation, economic activity will expand at a moderate pace, with labor market indicators continuing to move toward levels the Committee judges consistent

with its dual mandate. The Committee continues to see the risks to the outlook for economic activity and the labor market as nearly balanced. Inflation is anticipated to remain near its recent low level in the near term, but the Committee expects inflation to rise gradually toward 2 percent over the medium term as the labor market improves further and the transitory effects of earlier declines in energy and import prices dissipate. The Committee continues to monitor inflation developments closely.

To support continued progress toward maximum employment and price stability, the Committee today reaffirmed its view that the current 0 to ¼ percent target range for the federal funds rate remains appropriate. In determining how long to maintain this target range, the Committee will assess progress—both realized and expected—toward its objectives of maximum employment and 2 percent inflation. This assessment will take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments. The Committee anticipates that it will be appropriate to raise the target range for the federal funds rate when it has seen some further improvement in the labor market and is reasonably confident that inflation will move back to its 2 percent objective over the medium term.

The Committee is maintaining its existing policy of reinvesting principal payments from its holdings of agency debt and agency mortgage-backed securities in agency mortgage-backed securities and of rolling over maturing Treasury securities at auction. This policy, by keeping the Committee's holdings of longer-term securities at sizable levels, should help maintain accommodative financial conditions.

When the Committee decides to begin to remove policy accommodation, it will take a balanced approach consistent with its longer-run goals of maximum employment and inflation of 2 percent. The Committee currently anticipates that, even after employment and inflation are near mandate-consistent levels, economic conditions may, for some time, warrant keeping the target federal funds rate below levels the Committee views as normal in the longer run."

Voting for this action: Janet L. Yellen, William C. Dudley, Lael Brainard, Charles L. Evans, Stanley Fischer, Jeffrey M. Lacker, Dennis P. Lockhart, Jerome H. Powell, Daniel K. Tarullo, and John C. Williams.

Voting against this action: None.

Long-Run Monetary Policy Implementation Framework

At the conclusion of the meeting, the Chair noted that the staff would soon begin an extended effort to evaluate potential long-run monetary policy implementation frameworks. In view of the likely time frames for normalization of the stance of monetary policy and the System's balance sheet, the Committee probably would not need to reach any final decisions regarding such a framework for several years. Moreover, the process of normalization will likely provide a great deal of information about money markets and the Federal Reserve's policy tools that will help inform the Committee's judgment about a long-run implementation framework. Nonetheless, because the analysis will likely address a wide range of topics, it seemed appropriate to begin now to organize and undertake the work.

Previous staff work on implementation frameworks was presented to the Committee in April 2008 and focused largely on alternative frameworks that could be used to target the federal funds rate. Those topics would be an important part of the current undertaking as well. However, in light of experience over recent years, policymakers agreed that a number of related issues warranted attention, including topics such as the effectiveness of alternative implementation frameworks in scenarios that could require a return to the zero lower bound, regulatory and other structural developments that could affect financial institutions and markets in ways that would affect monetary policy implementation, and the long-run structure of the Federal Reserve's assets and liabilities that best supports the System's macroeconomic objectives and financial stability. In discussing the range of issues contemplated for study under this project, it was noted that the Policy Normalization Principles and Plans reflect the Committee's intention that, in the longer run, the Federal Reserve will hold no more securities than necessary to implement monetary policy efficiently and effectively and that the Federal Reserve will hold primarily Treasury securities.

Policymakers agreed that it would be important to draw on the perspectives of staff across the Federal Reserve System and to consult widely with other central banks, academics, and other experts on markets, financial institutions, and monetary policy. The project was expected to run through the end of 2016. Policymakers will review progress and provide input as the work proceeds.

It was agreed that the next meeting of the Committee would be held on Wednesday–Thursday, September 16–17, 2015. The meeting adjourned at 10:45 a.m. on July 29, 2015.

Notation Vote

By notation vote completed on July 7, 2015, the Committee unanimously approved the minutes of the Committee meeting held on June 16–17, 2015.

Brian F. Madigan
Secretary

Meeting Held on September 16–17, 2015

A joint meeting of the Federal Open Market Committee and the Board of Governors was held in the offices of the Board of Governors of the Federal Reserve System in Washington, D.C., on Wednesday, September 16, 2015, at 1:00 p.m. and continued on Thursday, September 17, 2015, at 8:30 a.m.

Present

Janet L. Yellen
Chair

William C. Dudley
Vice Chairman

Lael Brainard

Charles L. Evans

Stanley Fischer

Jeffrey M. Lacker

Dennis P. Lockhart

Jerome H. Powell

Daniel K. Tarullo

John C. Williams

James Bullard, Esther L. George, Loretta J. Mester, Eric Rosengren, and Michael Strine
Alternate Members of the Federal Open Market Committee

Patrick Harker, Robert S. Kaplan, and Narayana Kocherlakota
Presidents of the Federal Reserve Banks of Philadelphia, Dallas, and Minneapolis, respectively

Brian F. Madigan
Secretary

Matthew M. Luecke
Deputy Secretary

David W. Skidmore
Assistant Secretary

Michelle A. Smith
Assistant Secretary

Scott G. Alvarez
General Counsel

Steven B. Kamin
Economist

Thomas Laubach
Economist

David W. Wilcox
Economist

David Altig, Thomas A. Connors, Michael P. Leahy, William R. Nelson, Daniel G. Sullivan, William Wascher, and John A. Weinberg
Associate Economists

Simon Potter
Manager, System Open Market Account

Lorie K. Logan
Deputy Manager, System Open Market Account

Robert deV. Frierson
Secretary of the Board, Office of the Secretary, Board of Governors

Michael S. Gibson
Director, Division of Banking Supervision and Regulation, Board of Governors

Nellie Liang
Director, Office of Financial Stability Policy and Research, Board of Governors

James A. Clouse and Stephen A. Meyer
Deputy Directors, Division of Monetary Affairs, Board of Governors

William B. English
Senior Special Adviser to the Board, Office of Board Members, Board of Governors

David Bowman, Andrew Figura, David Reifschneider, and Stacey Tevlin
Special Advisers to the Board, Office of Board Members, Board of Governors

Trevor A. Reeve
Special Adviser to the Chair, Office of Board Members, Board of Governors

Linda Robertson
Assistant to the Board, Office of Board Members, Board of Governors

Christopher J. Erceg
Senior Associate Director, Division of International Finance, Board of Governors

David E. Lebow and Michael G. Palumbo
Senior Associate Directors, Division of Research and Statistics, Board of Governors

Ellen E. Meade and Joyce K. Zickler
Senior Advisers, Division of Monetary Affairs, Board of Governors

John J. Stevens
Deputy Associate Director, Division of Research and Statistics, Board of Governors

Stephanie R. Aaronson
Assistant Director, Division of Research and Statistics, Board of Governors

Francisco Covas and Elizabeth Klee
Assistant Directors, Division of Monetary Affairs, Board of Governors

Eric C. Engstrom
Adviser, Division of Research and Statistics, Board of Governors

Penelope A. Beattie[1]
Assistant to the Secretary, Office of the Secretary, Board of Governors

Katie Ross[1]
Manager, Office of the Secretary, Board of Governors

David H. Small
Project Manager, Division of Monetary Affairs, Board of Governors

Elmar Mertens
Senior Economist, Division of Monetary Affairs, Board of Governors

Randall A. Williams
Information Management Analyst, Division of Monetary Affairs, Board of Governors

Gregory L. Stefani
First Vice President, Federal Reserve Bank of Cleveland

Alberto G. Musalem
Executive Vice President, Federal Reserve Bank of New York

Mary Daly, Troy Davig, Evan F. Koenig, Paolo A. Pesenti, Samuel Schulhofer-Wohl, Ellis W. Tallman, and Christopher J. Waller
Senior Vice Presidents, Federal Reserve Banks of San Francisco, Kansas City, Dallas, New York, Minneapolis, Cleveland, and St. Louis, respectively

Giovanni Olivei, Keith Sill, and Douglas Tillett
Vice Presidents, Federal Reserve Banks of Boston, Philadelphia, and Chicago, respectively

[1] Attended Wednesday's session only.

Developments in Financial Markets, Open Market Operations, and Policy Normalization

The manager of the System Open Market Account (SOMA) reported on developments in domestic and foreign financial markets. The deputy manager followed with a briefing on money market developments and System open market operations conducted by the Open Market Desk during the period since the Federal Open Market Committee (FOMC) met on July 28–29. Daily take-up in the Desk's overnight reverse repurchase agreement operations declined somewhat, apart from month-ends, likely reflecting some increase in money market interest rates. The deputy manager also discussed recent test operations of the Term Deposit Facility and updated the Committee on plans for tests of term reverse repurchase agreement operations at the end of the third quarter.

By unanimous vote, the Committee ratified the Desk's domestic transactions over the intermeeting period. There were no intervention operations in foreign currencies for the System's account over the intermeeting period.

System Open Market Account Reinvestment Policy

A staff briefing provided background on the macroeconomic effects of alternative approaches to ceasing reinvestments of principal on securities held in the SOMA after the Committee begins to normalize the stance of policy by increasing the target range for the federal funds rate. The briefing presented analysis that was based on an assumption that the cessation of reinvestments, once implemented, would be permanent. The briefing suggested that if economic conditions evolved in line with a modal outlook, differences in macroeconomic outcomes would be minor across approaches that ceased reinvestments soon after initial policy firming or continued reinvestments until certain levels of the federal funds rate, such as 1 percent or 2 percent, were reached. As a result, the appropriate path of the federal funds rate would be only modestly affected. However, if substantial adverse shocks occurred, continuing reinvestment until normalization of the level of the federal funds rate was well under way could help avoid situations that would warrant a larger reduction in the federal funds rate than perhaps could be accomplished given the constraint posed by the effective lower bound to nominal interest rates.

In the ensuing discussion, participants considered the advantages and disadvantages of alternative approaches to reinvestment. Participants referred to the Committee's statement on Policy Normalization Principles and Plans, which indicates that the timing of the cessation or phasing out of reinvestments will depend on how economic and financial conditions and the economic outlook evolve. Several participants emphasized that continuing reinvestments for some time after the initial policy firming could help manage potential risks, particularly by reducing the probability that the federal funds rate might return to the effective lower bound. Some participants expressed a view that, in contrast to the assumption in the staff analysis, the Committee could choose to resume reinvestments if macroeconomic conditions warranted. At the same time, it was also highlighted that a larger balance sheet could entail costs, and that the Principles and Plans indicate that, in the longer run, the SOMA portfolio should be no larger than necessary to conduct monetary policy efficiently and effectively. The Committee made no decisions regarding its strategy for ceasing or phasing out reinvestments at this meeting.

Staff Review of the Economic Situation

The information reviewed for the September 16–17 meeting suggested that real gross domestic product (GDP) was expanding at a moderate pace in the third quarter. Labor market conditions continued to improve, but labor compensation gains were modest. Consumer price inflation remained below the Committee's longer-run objective of 2 percent and was restrained by further declines in energy prices and non-energy import prices. Survey measures of longer-run inflation expectations remained stable, while market-based measures of inflation compensation moved lower.

Total nonfarm payroll employment expanded at a solid pace in July and August. The unemployment rate stayed at 5.3 percent in July but fell to 5.1 percent in August. With the labor force participation rate unchanged over this period, the employment-to-population ratio edged up. The share of workers employed part time for economic reasons remained elevated. The rate of private-sector job openings increased in July and was at a high level, while the rates of hiring and quits were little changed.

Industrial production increased, on balance, during July and August. Manufacturing production fell in August primarily because of a large drop in the output of motor vehicles and parts that reversed a substantial portion of its jump in July. Automakers scheduled further declines in assemblies over the remainder of the year, and broader indicators of manufacturing production, including readings on new orders from national and regional manufacturing surveys, generally suggested that factory output would be little changed over that period. Mining output moved up, on net, in July and August after a steep decline in the second quarter.

Real personal consumption expenditures (PCE) appeared to be rising at a moderate pace in the third quarter. The components of the nominal retail sales data used by the Bureau of Economic Analysis to construct its estimates of PCE increased at a strong rate in July and August, and sales of light motor vehicles moved up in both months. Household spending was supported by moderate growth in real disposable income in July and a wealth-to-income ratio that remained high even after recent declines in equity values. Consumer sentiment in the University of Michigan Surveys of Consumers decreased in early September, reportedly in part because of the recent decline in stock market prices, but it remained above its year-earlier level.

Activity in the housing sector remained on a gradual upward trend. Starts of new single-family homes rose further early in the third quarter and were slightly above the pace of permit issuance. In the multifamily sector, starts fell back after having been temporarily elevated in June. Sales of new and existing homes both increased in July.

Real private expenditures for business equipment and intellectual property products appeared to be rising moderately. Nominal shipments of nondefense capital goods excluding aircraft increased in July, and orders for nondefense capital goods pointed to modest gains in shipments in the coming months, consistent with recent readings from surveys of business conditions. Real spending for nonresidential structures excluding drilling and mining increased sharply in the second quarter, and nominal business expenditures for such structures rose further in July. In contrast, real business spending for drilling and mining structures fell steeply in the second quarter. Available indicators of drilling activity, such as counts of rigs in operation, suggested spending would decline less rapidly in the third quarter.

Total real government purchases appeared to be declining slightly in the third quarter. Federal govern-

ment purchases likely decreased, as defense spending moved down further through August. State and local government purchases seemed to be increasing, on balance, as the payrolls of these governments expanded at a faster pace in July and August than in the second quarter, while their nominal construction expenditures edged down in July after a large gain in the second quarter.

The U.S. international trade deficit widened in June before narrowing substantially in July. Exports rose in July, supported by increased shipments of non-aircraft capital goods and automobiles, but remained subdued. In contrast, imports declined in July, reversing a June increase, as imports of consumer goods fell back.

Total U.S. consumer prices, as measured by the PCE price index, edged up over the 12 months ending in July, restrained importantly by declines in energy prices. Core PCE prices, which exclude food and energy prices, increased 1¼ percent over the same period, with the increase damped in part by declines in the prices of non-energy imports. Over the 12 months ending in August, total consumer prices as measured by the consumer price index (CPI) edged up, while the core CPI increased 1¾ percent. Measures of expected longer-run inflation from a variety of surveys, including the Michigan survey, the Survey of Professional Forecasters, and the Desk's Survey of Primary Dealers, remained stable. However, market-based measures of inflation compensation fell to near their historical lows, reportedly in response to the recent appreciation of the dollar, the decline in oil prices, and readings on realized inflation that were slightly below market expectations.

Measures of labor compensation rose faster than consumer prices over the past year, but the modest increases in compensation were similar to those seen in recent years. Over the four quarters ending in the second quarter, the employment cost index increased nearly 2 percent and compensation per hour in the nonfarm business sector rose 2¼ percent. Over the 12 months ending in August, average hourly earnings for all employees increased 2¼ percent.

Foreign economic growth remained weak in the second quarter, held back by contractions in real GDP in Canada, Japan, Brazil, and Taiwan, even as activity continued to expand at a moderate pace in the euro area and the United Kingdom. Indicators for the third quarter pointed to a slight pickup in the pace of foreign growth, particularly as recent data for Canada suggested that some of the first-half weakness there was dissipating. However, recent indicators for some other countries, most notably China, were subdued. Inflation rates continued to be quite low in the advanced foreign economies, and market-based measures of inflation compensation had recently moved down in the euro area and Japan. In contrast, inflation in the emerging market economies had risen in recent months as a result of higher food prices and widespread currency depreciation.

Staff Review of the Financial Situation

Although U.S. economic data releases generally met market expectations, domestic financial conditions tightened modestly as concerns about prospects for global economic growth, centered on China, prompted an increase in financial market volatility and a deterioration in risk sentiment during the intermeeting period. Stock market indexes in most advanced and emerging market economies ended the period sharply lower. Tighter financial market conditions and greater volatility contributed to a reduction of the odds that market participants appeared to place on the first increase in the federal funds rate occurring at the September FOMC meeting and to a flatter expected path for the policy rate thereafter. Nevertheless, yields on short- and longer-term nominal Treasury securities were modestly higher than when the Committee met in July.

Over the intermeeting period, the concerns about global economic growth and turbulence in financial markets led to greater uncertainty among market participants about the likely timing of the start of the normalization of the stance of U.S. monetary policy. Based on federal funds futures, the probability of a first increase in the target range for the federal funds rate at the September meeting fell slightly; the probabilities attached to subsequent meetings through January 2016 were generally little changed and rose for meetings later that year. Similarly, results from the Desk's September Survey of Primary Dealers and Survey of Market Participants indicated that, on average, respondents pushed out their expected timing of the first increase in the target range for the federal funds rate. Regarding the most likely meeting date for the first rate increase, survey respondents were about evenly split between September and December. Data on overnight index swap rates indicated that investors marked down the expected path of the federal funds rate, on balance, over the intermeeting period.

Despite the decline in global equity markets and the downward shift in the expected path of the federal funds rate, yields on nominal Treasury securities moved up modestly, with some market participants citing purported sales of Treasury securities by foreign government authorities to finance foreign exchange market intervention as a factor that likely put upward pressure on Treasury yields. Measures of inflation compensation based on Treasury Inflation-Protected Securities fell to near their historical lows.

Broad U.S. equity price indexes were highly correlated with foreign equity indexes over the intermeeting period and posted net declines. Although concerns about global economic growth likely contributed to the declines in domestic equity prices, investors may also have reassessed valuations and risk in equity markets. Domestic equity indexes were quite volatile in late August and early September, and one-month-ahead option-implied volatility on the S&P 500 index reached levels last seen in 2011. Spreads on 10-year triple-B-rated and speculative-grade corporate bonds over comparable-maturity Treasury securities widened slightly over the intermeeting period.

Financing conditions for nonfinancial businesses tightened modestly over the summer. Corporate bond and institutional leveraged loan issuance remained solid through July but moderated in August. The growth of commercial and industrial loans on banks' books slowed in July and August; the deceleration was concentrated in banks with greater exposures to oil and gas firms. Financing for commercial real estate (CRE) remained broadly available, with CRE loans on banks' books expanding and issuance of commercial mortgage-backed securities (CMBS) staying robust. However, spreads on investment-grade CMBS widened noticeably in August, reportedly a result of heavy issuance as well as the increased volatility in broader financial markets.

Conditions in the market for residential mortgages continued to improve slowly, with interest rates on 30-year fixed-rate mortgages declining slightly. Bank holdings of closed-end residential loans increased modestly, and the Mortgage Bankers Association's index of mortgage credit availability edged up further. However, credit availability for borrowers with low credit scores, hard-to-document income, or high debt-to-income ratios remained tight.

Financing conditions in consumer credit markets remained generally accommodative, and the performance of outstanding consumer loans was largely stable. Credit card balances expanded amid gradually easing lending standards, and student and auto loans continued to be broadly available, even to borrowers with subprime credit scores. Delinquency rates on credit card loans and auto loans stayed low through the second quarter, while delinquency rates on student loans remained elevated.

The exchange value of the U.S. dollar rose notably over the period against the currencies of most major U.S. trading partners. While the dollar depreciated against the euro and the yen, it appreciated against the Canadian dollar. The dollar also strongly appreciated against the currencies of most emerging market economies, as most Asian currencies weakened against the dollar following a depreciation of the Chinese renminbi, and as the currencies of commodity exporters fell along with declining commodity prices. Sovereign yields in the advanced foreign economies ended the period roughly unchanged. Changes in peripheral euro-area sovereign yield spreads were mixed, with Greek sovereign spreads narrowing significantly over the period as Greece and the euro area finalized Greece's third bailout package. In contrast, falling commodity prices and concerns about the pace of global growth contributed to capital outflows and generally wider spreads on dollar-denominated debt in emerging Asia and Latin America.

Staff Economic Outlook

The U.S. economic forecast prepared by the staff for the September FOMC meeting was a little weaker, on balance, than the one prepared for the July FOMC meeting. Recent information on real U.S. economic activity was generally stronger than expected, but equity prices declined, the foreign exchange value of the dollar appreciated further, and indicators of foreign economic growth were generally weak. The staff left its forecast for real GDP growth over the second half of the year little changed but lowered its projection for economic growth over the next several years. The staff also further trimmed its assumptions for the rates of increase in productivity and potential output over the medium term. On net, the level of GDP was anticipated to rise above its potential next year, and that gap was projected to widen gradually over the medium term. The unemployment rate was

projected to run a little below the staff's estimate of its longer-run natural rate over this period.

The staff projected that consumer price inflation would move down over the near term by more than in the previous projection. Crude oil prices declined further over the intermeeting period and were expected to result in lower consumer energy prices, and the effects of recent dollar appreciation and lower commodity prices were anticipated to push down non-oil import prices. With energy prices and non-oil import prices expected to begin to increase steadily next year, the staff projected that inflation would rise gradually over the next several years but would still be slightly below the Committee's longer-run objective of 2 percent at the end of 2018. Inflation was anticipated to move up to 2 percent thereafter, with inflation expectations in the longer run assumed to be consistent with the Committee's objective and slack in labor and product markets projected to have waned.

The staff viewed the uncertainty around its September projections for real GDP growth, the unemployment rate, and inflation as similar to the average of the past 20 years. The risks to the forecast for real GDP and inflation were seen as tilted to the downside, reflecting the staff's assessment that neither monetary nor fiscal policy was well positioned to help the economy withstand substantial adverse shocks. Consistent with this downside risk to aggregate demand and with the further adjustments to the staff's supply-side assumptions, the staff viewed the risks to its outlook for the unemployment rate as tilted to the upside.

Participants' Views on Current Conditions and the Economic Outlook

In conjunction with this FOMC meeting, members of the Board of Governors and Federal Reserve Bank presidents submitted their projections of the most likely outcomes for real GDP growth, the unemployment rate, inflation, and the federal funds rate for each year from 2015 through 2018 and over the longer run, conditional on each participant's judgment of appropriate monetary policy. The longer-run projections represent each participant's assessment of the rate to which each variable would be expected to converge, over time, under appropriate monetary policy and in the absence of further shocks to the economy. These projections and policy assessments are described in the Summary of Economic Projections, which is an addendum to these minutes.

In their discussion of the economic situation and the outlook, meeting participants viewed the information received over the intermeeting period as indicating that economic activity was expanding moderately. Although net exports remained soft, household spending and business fixed investment were increasing moderately, and the housing sector recovered further. The labor market continued to improve, with solid job gains and declining unemployment, and labor market indicators showed that underutilization of labor resources had diminished since early in the year.

Growth in real GDP over the first half of the year was stronger than participants expected when they prepared their June forecasts, and the unemployment rate declined somewhat more than anticipated. Participants made only small adjustments to their projections for economic activity over the medium term. They continued to anticipate that, with appropriate policy accommodation, the pace of expansion of real activity would remain somewhat above its longer-run rate over the next two years and lead to further improvement in labor market conditions. Most continued to see the risks to real activity and unemployment as nearly balanced, but many acknowledged that recent global economic and financial developments may have increased the downside risks to economic activity somewhat.

Inflation continued to run below the Committee's longer-run objective, partly reflecting declines in energy prices and in prices of non-energy imports. Market-based measures of inflation compensation moved lower; survey measures of longer-term inflation expectations remained stable. Participants anticipated that recent global developments would likely put further downward pressure on inflation in the near term; compared with their previous forecasts, more now saw the risks to inflation as tilted to the downside. But participants still expected that, as the labor market continued to improve and the transitory effects of declines in energy and non-oil import prices dissipated, inflation would rise gradually toward 2 percent over the medium term.

Consumer spending was rising at a solid rate after a modest increase in the first quarter. Participants noted that ongoing gains in employment and real income were providing support for the rise in spending, and this support was expected to continue going forward. Household credit performance was also favorable, with delinquency rates on credit cards and auto loans low. The available reports from District

contacts in the retail and auto industries confirmed the recent solid gains in consumer spending. Contacts were generally optimistic about the outlook, although retail sales appeared to be softening in a few areas where economic activity was adversely affected by declines in the energy sector and the increase in the foreign exchange value of the dollar.

Housing activity was improving, with sales and new construction trending higher. Solid gains in employment and favorable mortgage rates were anticipated to continue to underpin the recovery in housing. Contacts in a number of Districts were upbeat about prospects for the sector, citing strengthening sales, rising home prices, an upturn in household formations, and reports that buyers had accelerated purchases in anticipation of the possibility that mortgage rates might move higher in the near term. Multifamily construction was particularly strong in a couple of Districts, but in another a shortage of lots was constraining builders' ability to meet strong demand for new single-family homes.

The information on business spending from District contacts was mixed. Nonresidential construction was reported to be expanding in a number of regions. In manufacturing, the auto industry remained a bright spot, but the appreciation of the dollar was still restraining production of goods for export. Optimism remained relatively high according to some District contacts, although a few regional activity surveys noted some caution related to uncertainty about recent economic developments abroad. The weakness in commodity prices and the appreciation of the dollar also continued to weigh on activity in the energy and agricultural sectors. Moreover, the outlook for the energy sector appeared to be worsening. The substantial global supply of crude oil seemed likely to maintain downward pressure on energy prices for some time, leading to a deterioration in credit conditions for some U.S. producers and a further reduction in their capital outlays.

Participants agreed that labor market conditions had improved considerably since earlier in the year. Payroll employment had been increasing steadily. Underutilization of labor resources had diminished along a number of dimensions: The unemployment rate had fallen to a level close to most participants' estimates of its longer-run normal rate, and the numbers of discouraged workers and those employed part time for economic reasons had moved lower. With the cumulative improvement in labor market conditions, most participants thought that the underutilization of labor resources had been substantially reduced, and a few of them expressed the view that underutilization had been eliminated. But some others believed that labor market slack in addition to that measured by the unemployment rate remained and that further progress was possible before labor market conditions were fully consistent with the Committee's objective of maximum employment. They pointed out that, even recognizing the downward trend in labor force participation, the level of the participation rate, particularly for prime-age adults, remained depressed; similarly, the number of workers on part-time schedules for economic reasons was still elevated. A number of participants noted that eliminating slack along such broader dimensions might require a temporary decline in the unemployment rate below its longer-run normal level, and that this development could speed the return of inflation to 2 percent.

The incoming information on wages and labor compensation, including an especially low reading on the employment cost index for the second quarter, showed no broad-based acceleration. To some, the continued subdued trend in wages was evidence of an absence of upward pressure on inflation from current levels of labor utilization. Several others, however, noted that weak productivity growth and low price inflation might be contributing to modest wage increases. A number of participants reported that some of their business contacts were experiencing labor shortages in various occupations and geographic areas resulting in upward pressure on wages, with a few indicating that the pickup in wages had become more widespread.

Recent readings on headline consumer price inflation reflected only small increases in core inflation and renewed weakness in consumer energy prices. As a result, the 12-month changes in both the total and core PCE price indexes for August were expected to still be well below the Committee's 2 percent objective. Participants continued to judge that a significant portion of the shortfall was the result of the transitory effects of declines in prices of oil and nonenergy commodities. A few participants pointed out that since January when the steep drop in energy prices ended, core PCE prices had risen at an annual rate of 1.7 percent, closer to the Committee's objective, despite the continued decline in prices of nonenergy imports. Still, almost all participants anticipated that inflation would continue to run below 2 percent in the near term, particularly in light of the further decline in oil prices and further appreciation

of the dollar over the intermeeting period. Participants also discussed various measures of expectations for inflation over the longer run. Surveys continued to show stable longer-run inflation expectations, and most participants continued to anticipate that longer-run inflation expectations would remain well anchored. A few participants expressed some concern about the decline in market-based measures of inflation compensation. However, it was noted that the decline seemed to be related to the further drop in oil prices or may importantly reflect shifts in risk and liquidity premiums, and thus may not signal additional broad and persistent downward price pressures.

Participants discussed the potential implications of recent economic and financial developments abroad for U.S. economic activity and inflation. A material slowdown in economic growth in China and potential adverse spillovers to other economies were likely to depress U.S. net exports to some extent. In addition, concerns associated with developments in China and other emerging market economies had contributed to a further appreciation of the dollar and declines in prices of oil and other commodities, which were likely to hold down U.S. consumer price inflation in the near term. In the United States, equity prices fell, on balance, amid significant volatility, and risk spreads for businesses widened. Many participants judged that the effects of these developments on domestic economic activity were likely to be small, but they acknowledged the risk that they might restrain U.S. economic growth somewhat. In particular, the appreciation of the dollar since mid-2014 was still a substantial drag on net exports, and the further rise in the dollar over the intermeeting period could augment the restraint on U.S. net exports. Some participants commented that the recent decline in equity prices needed to be viewed in the context of overall valuation levels, which they saw as relatively high, and a couple noted that volatility had begun to subside.

During their discussion of economic conditions and monetary policy, participants indicated that they did not see the changes in asset prices during the intermeeting period as bearing significantly on their policy choice except insofar as they affected the outlook for achieving the Committee's macroeconomic objectives and the risks associated with that outlook. Many of them saw the likely effects of recent developments on the path of economic activity and inflation as small or transitory. Most participants continued to anticipate that, based on their assessment of current economic conditions and their outlook for economic activity, the labor market, and inflation, the conditions for policy firming had been met or would likely be met by the end of the year. However, some participants judged that the downside risks to the outlook for economic growth and inflation had increased. In their view, although the time for policy normalization might be near, it would be appropriate to wait for information, including evidence of further improvement in the labor market, confirming that the outlook for economic growth had not deteriorated significantly and that inflation was still on a path to return to 2 percent over the medium term. A few mentioned that a pickup in wage increases could bolster their confidence that resource utilization had tightened sufficiently to help move inflation toward the Committee's objective, but they did not view an acceleration in wages as a necessary condition for gaining such confidence.

Participants weighed a number of risks associated with the timing of policy firming. Some participants were concerned that the downside risks to inflation could be realized if the target range for the federal funds rate was increased before it was clear that economic growth would remain at an above-trend pace and downward pressures on inflation had abated. They also worried that such a premature tightening might erode the credibility of the Committee's inflation objective if inflation stayed at a rate below 2 percent for a prolonged period. It was noted that monetary policy was better positioned to respond effectively to unanticipated upside inflation surprises than to persistent below-objective inflation, particularly when the federal funds rate was still near its effective lower bound. Such considerations also argued for increasing the target range for the federal funds rate gradually after policy normalization was under way. Some other participants, however, expressed concerns about delaying the start of normalizing the target range for the federal funds rate much longer. For example, a significant delay risked an undesired buildup of inflationary pressures or economic and financial imbalances that would be costly to unwind and that eventually could have adverse consequences for economic growth. In addition, a prompt decision to firm policy could provide a signal of confidence in the strength of the U.S. economy that might spur rather than restrain economic activity. These participants preferred to begin policy firming soon, with

most of them expecting that beginning the process before long would allow the target range for the federal funds rate to be increased gradually.

Committee Policy Action

In their discussion of monetary policy for the period ahead, members judged that information received since the FOMC met in July indicated that economic activity was expanding at a moderate pace. Although net exports remained soft, economic growth was broadly based. Members noted that recent global and financial market developments might restrain economic activity somewhat as a result of the higher level of the dollar and possible effects of slower economic growth in China and in a number of emerging market and commodity-producing economies. Nevertheless, they still viewed the risks to U.S. economic activity as nearly balanced, and they continued to expect that, with appropriate policy accommodation, economic activity would most likely continue to expand at a moderate pace.

Members agreed that labor market conditions had improved considerably since earlier in the year, with ongoing solid gains in payroll employment and the unemployment rate falling to a level quite close to their estimates of its longer-run normal rate. Members anticipated that economic activity was likely to continue to expand at a pace sufficient to lead to a further reduction in underutilization of labor resources. Headline inflation continued to be held down by the effects of declines in energy and commodity prices, and the year-over-year increase in core PCE inflation remained below the Committee's objective. Survey-based measures of longer-term inflation expectations had remained stable; market-based measures of inflation compensation had moved lower. Members anticipated that the declines in oil prices and the appreciation of the dollar over the intermeeting period were likely to exert some additional downward pressure on inflation in the near term. Members expected inflation to rise gradually toward 2 percent over the medium term as the labor market improved further and the transitory effects of declines in energy and import prices dissipated, but they agreed to continue to monitor inflation developments closely.

In assessing whether economic conditions had improved sufficiently to initiate a firming in the stance of policy, many members said that the improvement in labor market conditions met or would soon meet one of the Committee's criteria for beginning policy normalization. But some indicated that their confidence that inflation would gradually return to the Committee's 2 percent objective over the medium term had not increased, in large part because recent global economic and financial developments had imparted some restraint to the economic outlook and placed further downward pressure on inflation in the near term. Most members agreed that their confidence that inflation would move to the Committee's inflation objective would increase if, as expected, economic activity continued to expand at a moderate rate and labor market conditions improved further. Many expected those conditions to be met later this year, although several members were concerned about downside risks to the outlook for real activity and inflation.

Other factors important to the Committee's assessment of the inflation outlook were the expectation that the influences of lower energy and commodity prices on headline inflation would abate, as had occurred in previous episodes, and that inflation expectations would remain stable. With energy and commodity prices expected to stabilize, members' projections of inflation incorporated a step-up in headline inflation next year. However, several members saw a risk that the additional downward pressure on inflation from lower oil prices and a higher foreign exchange value of the dollar could persist and, as a result, delay or diminish the expected upturn in inflation. And, while survey measures of longer-run inflation expectations remained stable, a couple of members expressed unease with the decline in market-based measures of inflation compensation over the intermeeting period.

After assessing the outlook for economic activity, the labor market, and inflation and weighing the uncertainties associated with the outlook, all but one member concluded that, although the U.S. economy had strengthened and labor underutilization had diminished, economic conditions did not warrant an increase in the target range for the federal funds rate at this meeting. They agreed that developments over the intermeeting period had not materially altered the Committee's economic outlook. Nevertheless, in part because of the risks to the outlook for economic activity and inflation, the Committee decided that it was prudent to wait for additional information confirming that the economic outlook had not deteriorated and bolstering members' confidence that inflation would gradually move up toward 2 percent over the medium term. One member, however, preferred to raise the target range for the federal funds rate at

this meeting, indicating that the current low level of real interest rates was not appropriate in the context of current economic conditions.

The Committee agreed to maintain the target range for the federal funds rate at 0 to ¼ percent and to reaffirm in its postmeeting statement that the Committee's decision about how long to maintain the current target range for the federal funds rate would depend on its assessment of actual and expected progress toward its objectives of maximum employment and 2 percent inflation. Members agreed that the Committee's evaluation of progress on its objectives would take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments. They also agreed to indicate that the Committee continued to anticipate that it would be appropriate to raise the target range for the federal funds rate when it sees some further improvement in the labor market and is reasonably confident that inflation will move back to its 2 percent objective over the medium term. It was noted that the expected path of the federal funds rate, rather than the exact timing of the initial increase, was most important in influencing financial conditions and thus the outlook for the economy and inflation. The Committee reiterated its expectation that, even after employment and inflation are near mandate-consistent levels, economic conditions may, for some time, warrant keeping the target federal funds rate below levels the Committee views as normal in the longer run.

The Committee also maintained its policy of reinvesting principal payments from its agency debt and agency mortgage-backed securities in agency mortgage-backed securities and of rolling over maturing Treasury securities at auction. This policy, by keeping the Committee's holdings of longer-term securities at sizable levels, should help maintain accommodative financial conditions.

At the conclusion of the discussion, the Committee voted to authorize and direct the Federal Reserve Bank of New York, until it was instructed otherwise, to execute transactions in the SOMA in accordance with the following domestic policy directive:

> "Consistent with its statutory mandate, the Federal Open Market Committee seeks monetary and financial conditions that will foster maximum employment and price stability. In particular, the Committee seeks conditions in reserve markets consistent with federal funds trading in a range from 0 to ¼ percent. The Committee directs the Desk to undertake open market operations as necessary to maintain such conditions. The Committee directs the Desk to maintain its policy of rolling over maturing Treasury securities into new issues and its policy of reinvesting principal payments on all agency debt and agency mortgage-backed securities in agency mortgage-backed securities. The Committee also directs the Desk to engage in dollar roll and coupon swap transactions as necessary to facilitate settlement of the Federal Reserve's agency mortgage-backed securities transactions. The System Open Market Account manager and the secretary will keep the Committee informed of ongoing developments regarding the System's balance sheet that could affect the attainment over time of the Committee's objectives of maximum employment and price stability."

The vote encompassed approval of the statement below to be released at 2:00 p.m.:

> "Information received since the Federal Open Market Committee met in July suggests that economic activity is expanding at a moderate pace. Household spending and business fixed investment have been increasing moderately, and the housing sector has improved further; however, net exports have been soft. The labor market continued to improve, with solid job gains and declining unemployment. On balance, labor market indicators show that underutilization of labor resources has diminished since early this year. Inflation has continued to run below the Committee's longer-run objective, partly reflecting declines in energy prices and in prices of non-energy imports. Market-based measures of inflation compensation moved lower; survey-based measures of longer-term inflation expectations have remained stable.
>
> Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. Recent global economic and financial developments may restrain economic activity somewhat and are likely to put further downward pressure on inflation in the near term. Nonetheless, the Committee expects that, with appropriate policy accommodation, economic activity will expand at a moderate pace, with labor market indicators continuing to move toward levels the Committee judges consistent

with its dual mandate. The Committee continues to see the risks to the outlook for economic activity and the labor market as nearly balanced but is monitoring developments abroad. Inflation is anticipated to remain near its recent low level in the near term but the Committee expects inflation to rise gradually toward 2 percent over the medium term as the labor market improves further and the transitory effects of declines in energy and import prices dissipate. The Committee continues to monitor inflation developments closely.

To support continued progress toward maximum employment and price stability, the Committee today reaffirmed its view that the current 0 to ¼ percent target range for the federal funds rate remains appropriate. In determining how long to maintain this target range, the Committee will assess progress—both realized and expected—toward its objectives of maximum employment and 2 percent inflation. This assessment will take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments. The Committee anticipates that it will be appropriate to raise the target range for the federal funds rate when it has seen some further improvement in the labor market and is reasonably confident that inflation will move back to its 2 percent objective over the medium term.

The Committee is maintaining its existing policy of reinvesting principal payments from its holdings of agency debt and agency mortgage-backed securities in agency mortgage-backed securities and of rolling over maturing Treasury securities at auction. This policy, by keeping the Committee's holdings of longer-term securities at sizable levels, should help maintain accommodative financial conditions.

When the Committee decides to begin to remove policy accommodation, it will take a balanced approach consistent with its longer-run goals of maximum employment and inflation of 2 percent. The Committee currently anticipates that, even after employment and inflation are near mandate-consistent levels, economic conditions may, for some time, warrant keeping the target federal funds rate below levels the Committee views as normal in the longer run."

Voting for this action: Janet L. Yellen, William C. Dudley, Lael Brainard, Charles L. Evans, Stanley Fischer, Dennis P. Lockhart, Jerome H. Powell, Daniel K. Tarullo, and John C. Williams.

Voting against this action: Jeffrey M. Lacker.

Mr. Lacker dissented because he believed that maintaining exceptionally low real interest rates was not appropriate for an economy with persistently strong consumption growth and tightening labor markets. He viewed current disinflationary forces as likely to be transitory, and was reasonably confident that inflation would move toward 2 percent. In his view, further delay in removing monetary policy accommodation would represent a risky departure from past patterns of FOMC behavior in response to such economic conditions.

It was agreed that the next meeting of the Committee would be held on Tuesday–Wednesday, October 27–28, 2015. The meeting adjourned at 10:55 a.m. on September 17, 2015.

Notation Vote

By notation vote completed on August 18, 2015, the Committee unanimously approved the minutes of the Committee meeting held on July 28–29, 2015.

Brian F. Madigan
Secretary

Addendum: Summary of Economic Projections

In conjunction with the Federal Open Market Committee (FOMC) meeting held on September 16–17, 2015, meeting participants submitted their projections of the most likely outcomes for real output growth, the unemployment rate, inflation, and the federal funds rate for each year from 2015 to 2018 and over the longer run. Each participant's projection was based on information available at the time of the meeting together with his or her assessment of appropriate monetary policy and assumptions about the factors likely to affect economic outcomes. The longer-run projections represent each participant's assessment of the value to which each variable would be expected to converge, over time, under appropriate monetary policy and in the absence of further shocks to the economy. "Appropriate monetary policy" is defined as the future path of policy that each partici-

pant deems most likely to foster outcomes for economic activity and inflation that best satisfy his or her individual interpretation of the Federal Reserve's objectives of maximum employment and stable prices.

FOMC participants generally expected that, under appropriate monetary policy, economic growth in 2015 would be at or slightly above their individual estimates of the U.S. economy's longer-run normal growth rate and would increase somewhat in 2016 before slowing to or toward its longer-run rate in 2017 and 2018 (table 1 and figure 1). Most participants projected that the unemployment rate would decline a bit further over the remainder of 2015 and be at or slightly below their individual judgments of its longer-run normal level from 2016 through 2018. Participants projected that inflation, as measured by the four-quarter change in the price index for personal consumption expenditures (PCE), would be very low this year but then would pick up notably next year and rise further in 2017; all participants projected that inflation would be at or close to the Committee's 2 percent longer-run objective in 2018.

As shown in figure 2, all but four participants anticipated that it would be appropriate to begin raising the target range for the federal funds rate in 2015. Most expected that it would be appropriate to raise the target federal funds rate fairly gradually over the projection period as headwinds to economic growth fade, labor market indicators reach levels consistent with the Committee's mandated objective of maximum employment, and inflation moves up to 2 percent. Most participants continued to expect that it would be appropriate for the federal funds rate still to be appreciably below its longer-run level in 2016 and 2017, reflecting the effects of remaining headwinds along with other factors.

Most participants viewed the levels of uncertainty associated with their outlooks for economic growth and the unemployment rate as broadly similar to the average level of the past 20 years. Most also judged

Table 1. Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents, under their individual assessments of projected appropriate monetary policy, September 2015

Percent

Variable	Median[1]					Central tendency[2]					Range[3]				
	2015	2016	2017	2018	Longer run	2015	2016	2017	2018	Longer run	2015	2016	2017	2018	Longer run
Change in real GDP	2.1	2.3	2.2	2.0	2.0	2.0–2.3	2.2–2.6	2.0–2.4	1.8–2.2	1.8–2.2	1.9–2.5	2.1–2.8	1.9–2.6	1.6–2.4	1.8–2.7
June projection	1.9	2.5	2.3	n.a.	2.0	1.8–2.0	2.4–2.7	2.1–2.5	n.a.	2.0–2.3	1.7–2.3	2.3–3.0	2.0–2.5	n.a.	1.8–2.5
Unemployment rate	5.0	4.8	4.8	4.8	4.9	5.0–5.1	4.7–4.9	4.7–4.9	4.7–5.0	4.9–5.2	4.9–5.2	4.5–5.0	4.5–5.0	4.6–5.3	4.7–5.8
June projection	5.3	5.1	5.0	n.a.	5.0	5.2–5.3	4.9–5.1	4.9–5.1	n.a.	5.0–5.2	5.0–5.3	4.6–5.2	4.8–5.5	n.a.	5.0–5.8
PCE inflation	0.4	1.7	1.9	2.0	2.0	0.3–0.5	1.5–1.8	1.8–2.0	2.0	2.0	0.3–1.0	1.5–2.4	1.7–2.2	1.8–2.1	2.0
June projection	0.7	1.8	2.0	n.a.	2.0	0.6–0.8	1.6–1.9	1.9–2.0	n.a.	2.0	0.6–1.0	1.5–2.4	1.7–2.2	n.a.	2.0
Core PCE inflation[4]	1.4	1.7	1.9	2.0		1.3–1.4	1.5–1.8	1.8–2.0	1.9–2.0		1.2–1.7	1.5–2.4	1.7–2.2	1.8–2.1	
June projection	1.3	1.8	2.0	n.a.		1.3–1.4	1.6–1.9	1.9–2.0	n.a.		1.2–1.6	1.5–2.4	1.7–2.2	n.a.	
Memo: Projected appropriate policy path															
Federal funds rate	0.4	1.4	2.6	3.4	3.5	0.1–0.6	1.1–2.1	2.1–3.4	3.0–3.6	3.3–3.8	-0.1–0.9	-0.1–2.9	1.0–3.9	2.9–3.9	3.0–4.0
June projection	0.6	1.6	2.9	n.a.	3.8	0.4–0.9	1.4–2.4	2.4–3.8	n.a.	3.5–3.8	0.1–0.9	0.4–2.9	2.0–3.9	n.a.	3.3–4.3

Note: Projections of change in real gross domestic product (GDP) and projections for both measures of inflation are percent changes from the fourth quarter of the previous year to the fourth quarter of the year indicated. PCE inflation and core PCE inflation are the percentage rates of change in, respectively, the price index for personal consumption expenditures (PCE) and the price index for PCE excluding food and energy. Projections for the unemployment rate are for the average civilian unemployment rate in the fourth quarter of the year indicated. Each participant's projections are based on his or her assessment of appropriate monetary policy. Longer-run projections represent each participant's assessment of the rate to which each variable would be expected to converge under appropriate monetary policy and in the absence of further shocks to the economy. The projections for the federal funds rate are the value (rounded to the nearest ⅛ percentage point) of the midpoint of the projected appropriate target range for the federal funds rate or the projected appropriate target level for the federal funds rate at the end of the specified calendar year or over the longer run. The June projections were made in conjunction with the meeting of the Federal Open Market Committee on June 16–17, 2015.

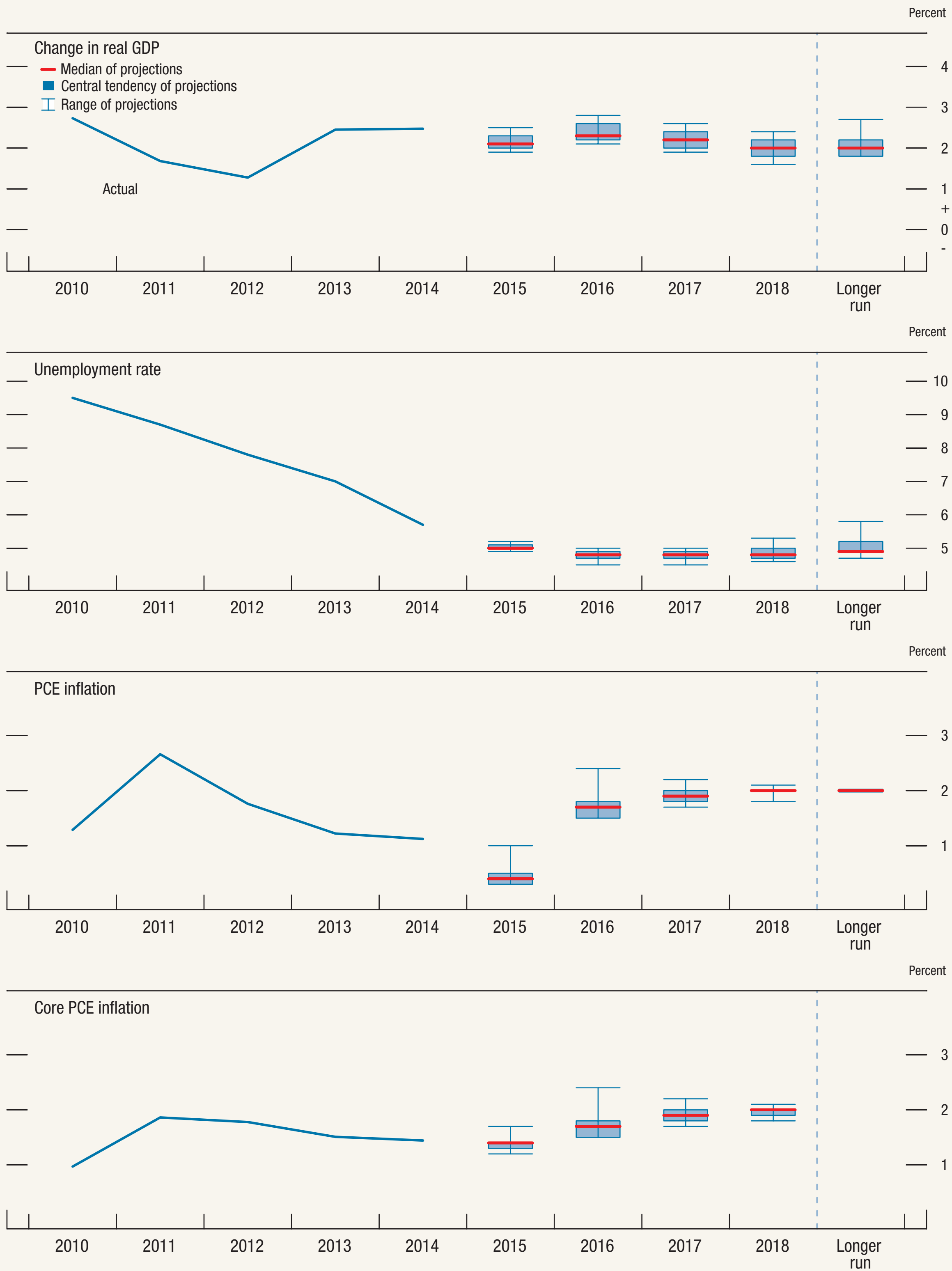
1 For each period, the median is the middle projection when the projections are arranged from lowest to highest. When the number of projections is even, the median is the average of the two middle projections.

2 The central tendency excludes the three highest and three lowest projections for each variable in each year.

3 The range for a variable in a given year includes all participants' projections, from lowest to highest, for that variable in that year.

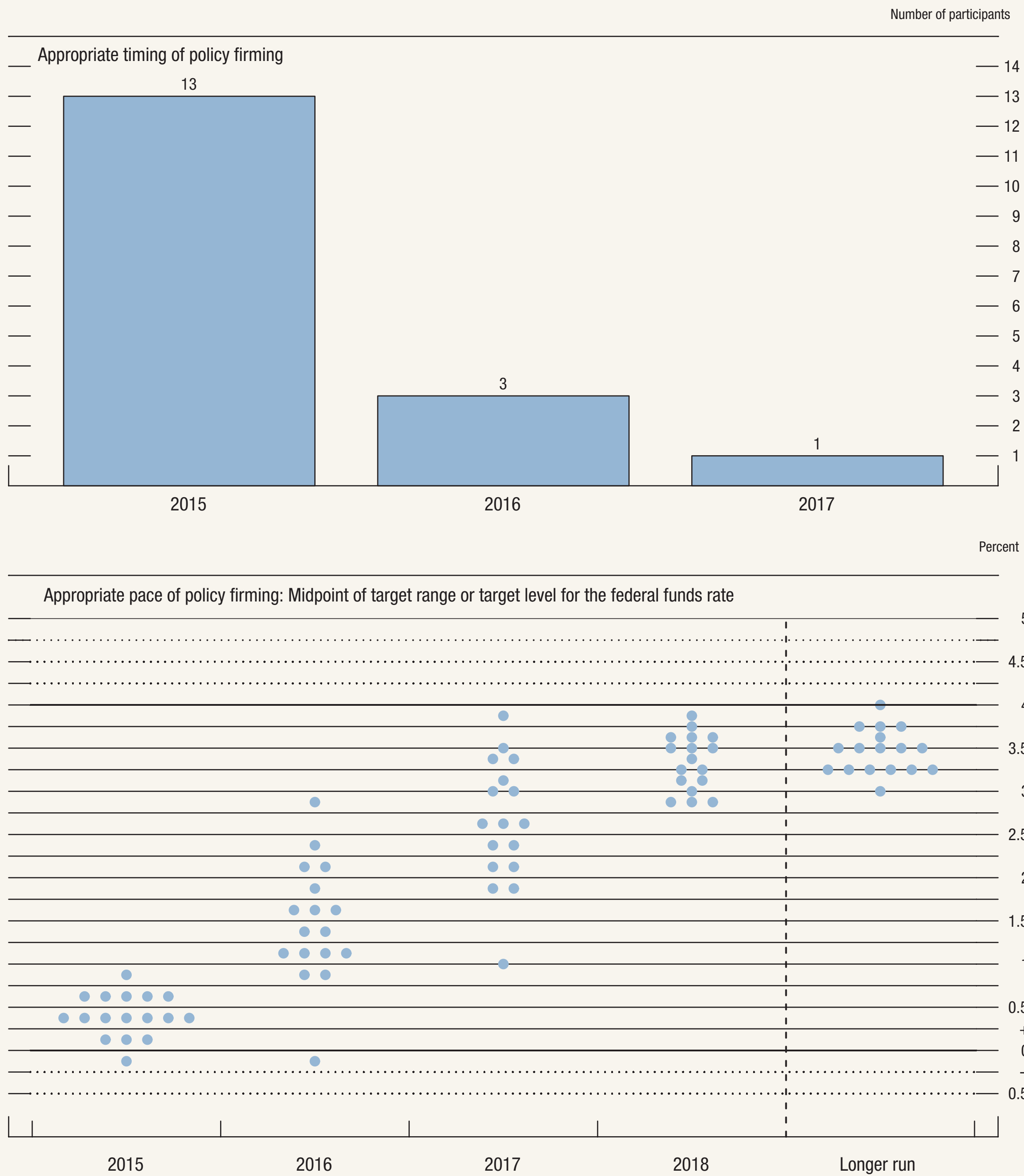
4 Longer-run projections for core PCE inflation are not collected.

Figure 1. Medians, central tendencies, and ranges of economic projections, 2015–18 and over the longer run



Note: Definitions of variables are in the general note to table 1. The data for the actual values of the variables are annual.

Figure 2. Overview of FOMC participants' assessments of appropriate monetary policy



Note: In the upper panel, the height of each bar denotes the number of FOMC participants who judge that, under appropriate monetary policy, the first increase in the target range for the federal funds rate from its current range of 0 to ¼ percent will occur in the specified calendar year. In June 2015, the numbers of FOMC participants who judged that the first increase in the target federal funds rate would occur in 2015, 2016, and 2017 were, respectively, 15, 2, and 0. In the lower panel, each shaded circle indicates the value (rounded to the nearest ⅛ percentage point) of an individual participant's judgment of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate at the end of the specified calendar year or over the longer run.

the level of uncertainty about inflation to be broadly similar to the average level of the past 20 years, although a few participants viewed it as higher. In addition, most participants continued to see the risks to the outlook for economic growth and for the unemployment rate as broadly balanced, although some viewed the risks to economic growth as weighted to the downside and some saw the risks to unemployment as weighted to the upside. A few more participants saw the risks to inflation as weighted to the downside than as balanced, while one judged these risks to be tilted to the upside.

The Outlook for Economic Activity

Participants generally projected that, conditional on their individual assumptions about appropriate monetary policy, real gross domestic product (GDP) would grow from 2015 through 2017 at a pace slightly above their estimates of its longer-run normal rate, and that real GDP growth would then slow in 2018 to a rate at or near their individual estimates of the longer-run rate. Participants pointed to a number of factors that they expected would contribute to moderate real output growth over the next few years, including improving labor market conditions, strengthened household and business balance sheets, the boost to consumer spending from low energy prices, diminishing restraint from fiscal policy, and still-accommodative monetary policy.

Compared with their Summary of Economic Projections (SEP) contributions in June, all participants revised up their projections of real GDP growth for 2015, reflecting stronger-than-anticipated growth over the first half of the year. Most participants revised down their projections of real GDP growth in 2016 and 2017. Several participants cited slower projected productivity growth as a reason for their downward revisions. The median value of participants' current projections for real GDP growth was 2.1 percent in 2015, 2.3 percent in 2016, 2.2 percent in 2017, and 2.0 percent in 2018. Although about half of the participants marked down their projections of real GDP growth in the longer run, the median remained at 2.0 percent.

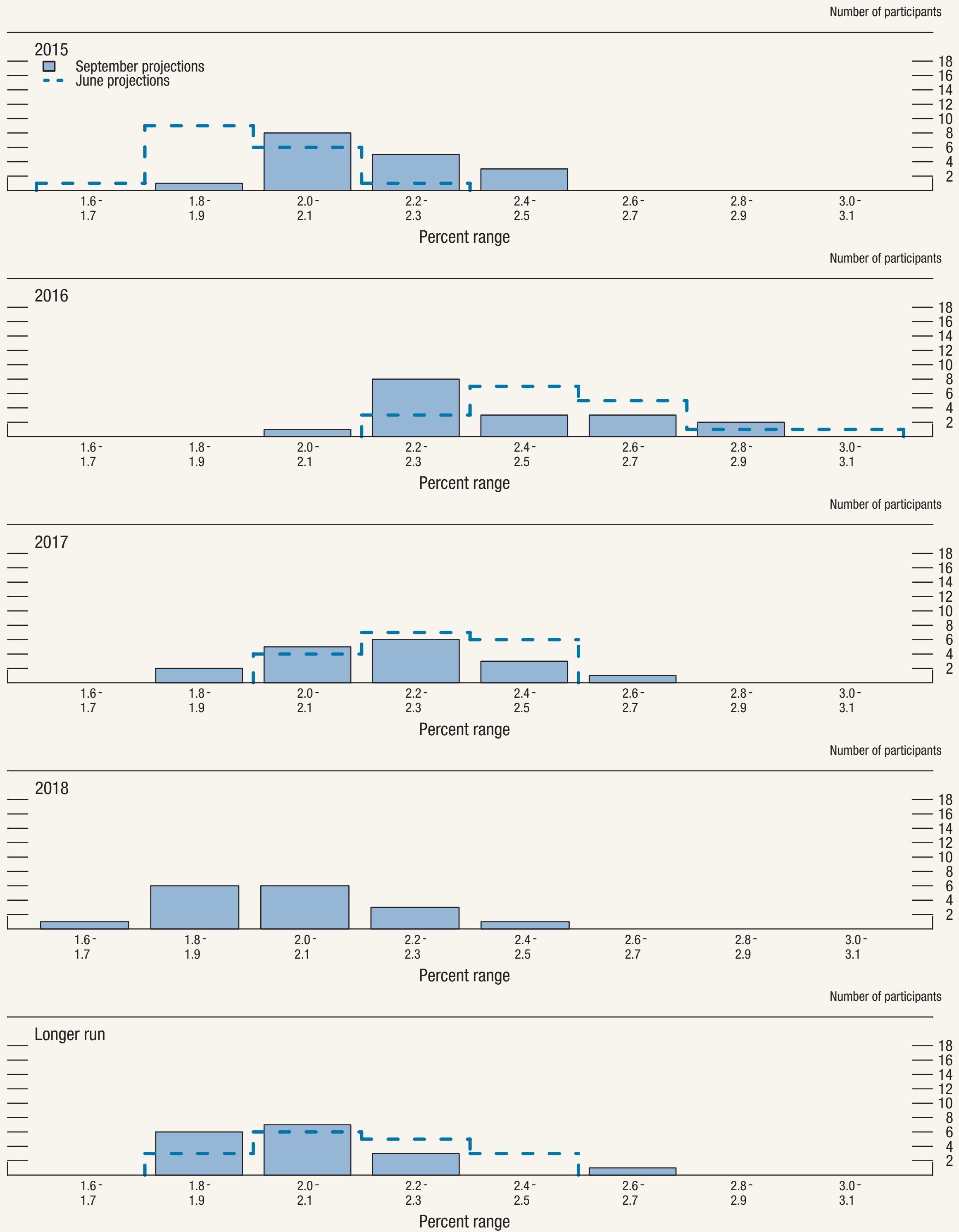
Most participants projected that the unemployment rate would decline a bit further over the remainder of 2015 and be at or below their individual judgments of its longer-run normal level from 2016 through 2018. The median of participants' forecasts for the unemployment rate in the fourth quarter of each year was 5.0 percent in 2015 and 4.8 percent from 2016 through 2018. Compared with the June SEP, participants' projected paths for the unemployment rate generally shifted down somewhat through 2017. Many participants noted that recent data pointing to faster-than-expected improvement in labor market conditions were an important factor underlying the downward revisions to their unemployment rate forecasts. All but a few participants revised down their estimates of the longer-run normal rate of unemployment; as a result, the median estimate edged down to 4.9 percent. Several participants noted that still-subdued wage and price inflation despite the stronger-than-expected momentum in the labor market suggested a lower level of the longer-run normal rate of unemployment than they had thought previously. A few also mentioned research indicating that demographic groups with lower average unemployment rates have accounted for an increasing fraction of the labor force.

Figures 3.A and 3.B show the distribution of participants' views regarding the likely outcomes for real GDP growth and the unemployment rate through 2018 and in the longer run. The diversity of views across participants reflected, in part, their individual assessments of a number of factors, including the effects of lower oil prices on consumer spending and business investment, the extent to which dollar appreciation and weaker foreign economic growth would affect real activity, the rate at which the forces that have been restraining the pace of the economic expansion would continue to abate, the degree to which ongoing improvements in the labor market would support stronger consumption growth, and the appropriate path of monetary policy. Relative to the June SEP, the dispersion of participants' projections for real GDP growth was roughly unchanged through 2016 but was somewhat wider in 2017 and the longer run. The dispersion of participants' projections for the unemployment rate in the longer run also widened somewhat.

The Outlook for Inflation

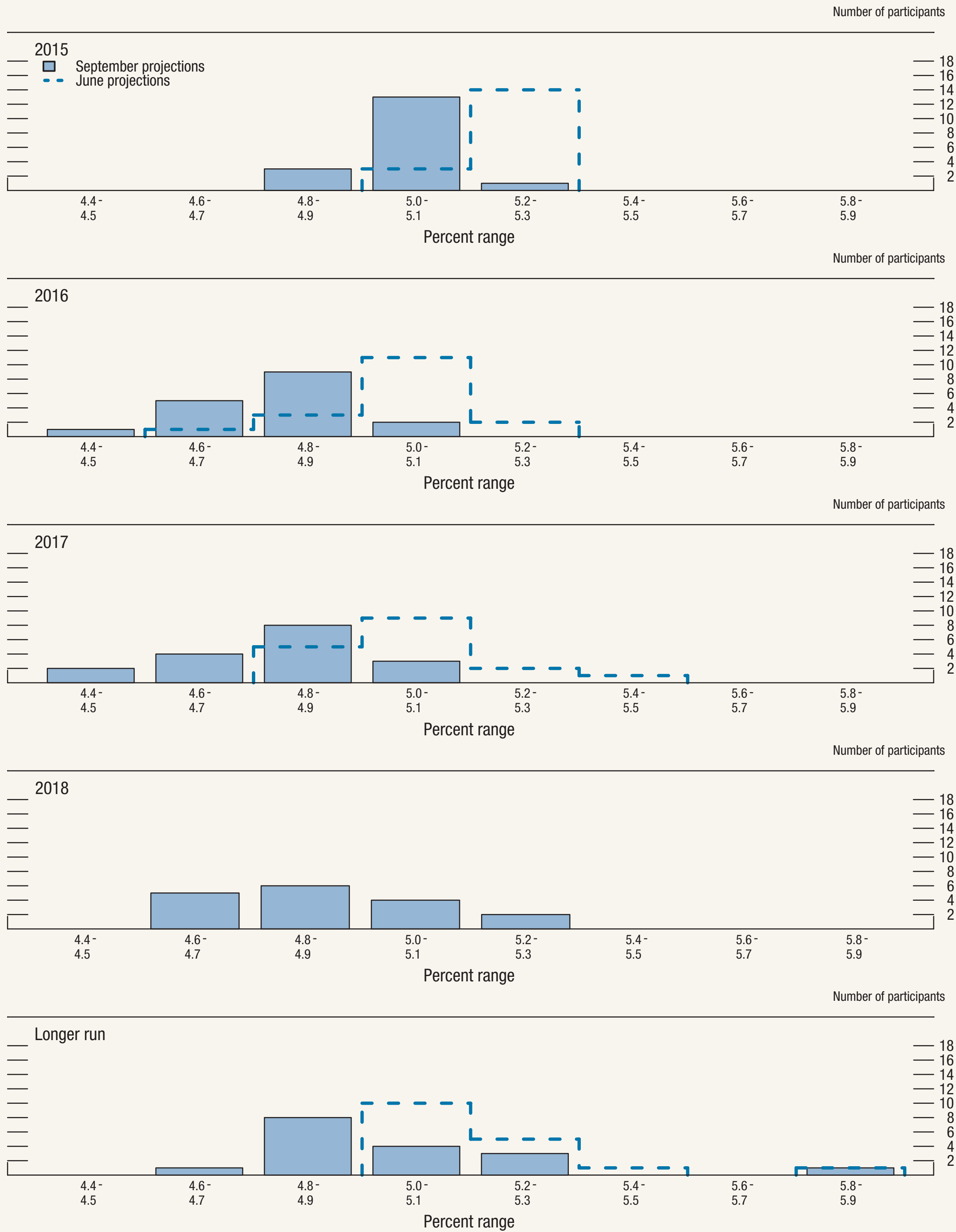
Compared with the June SEP, almost all participants marked down their projections for PCE inflation this year, noting that inflation had been running below their earlier projections and that further declines in energy prices and import prices were putting additional temporary downward pressure on PCE inflation. Nearly all participants saw PCE inflation picking up in 2016 and rising further in 2017, and almost all saw inflation at or close to the Committee's 2 percent longer-run objective in 2018. Some participants

Figure 3.A. Distribution of participants' projections for the change in real GDP, 2015–18 and over the longer run



Note: Definitions of variables are in the general note to table 1.

Figure 3.B. Distribution of participants' projections for the unemployment rate, 2015–18 and over the longer run



Note: Definitions of variables are in the general note to table 1.

also marked down their projections for core PCE inflation from 2015 through 2017, although almost all still expected core inflation to rise gradually over the projection period and to reach a level at or near 2 percent in 2018. The median values of projections for PCE inflation were 0.4 percent in 2015, 1.7 percent in 2016, 1.9 percent in 2017, and 2.0 percent in 2018, and the median values for core PCE inflation were 1.4 percent in 2015, 1.7 percent in 2016, 1.9 percent in 2017, and 2.0 percent in 2018. Factors cited by participants as likely to contribute to a rise of inflation toward 2 percent included stable longer-term inflation expectations, tighter resource utilization, a pickup in wage growth, the waning effects of declines in energy prices and appreciation of the dollar, and still-accommodative monetary policy.

Figures 3.C and 3.D provide information on the distribution of participants' views about the outlook for inflation. The range of participants' projections for PCE inflation in 2015 widened slightly compared with June, reflecting in part differences in participants' assessments of the effects of the declines in energy and import prices on the outlook for inflation. The dispersion for PCE inflation for 2016 and 2017 was about unchanged. Similarly, the ranges for core PCE inflation widened slightly in 2015 and were unchanged for 2016 and 2017. The distributions for both inflation measures in 2017 and 2018 were notably more concentrated near the Committee's 2 percent longer-run objective than those for 2015 and 2016.

Appropriate Monetary Policy

Participants judged that it would be appropriate to raise the target range for the federal funds rate over the projection period as forces that have been restraining the expansion abate and as labor market indicators and inflation move toward values the Committee judges consistent with the attainment of its mandated objectives of maximum employment and price stability. As shown in figure 2, all but four participants anticipated that it would be appropriate to begin raising the target range for the federal funds rate during 2015. However, most projected that the appropriate level of the federal funds rate would remain noticeably below their individual estimates of its longer-run normal level through 2017. Most participants saw the appropriate level of the federal funds rate as close to its longer-run normal level by 2018.

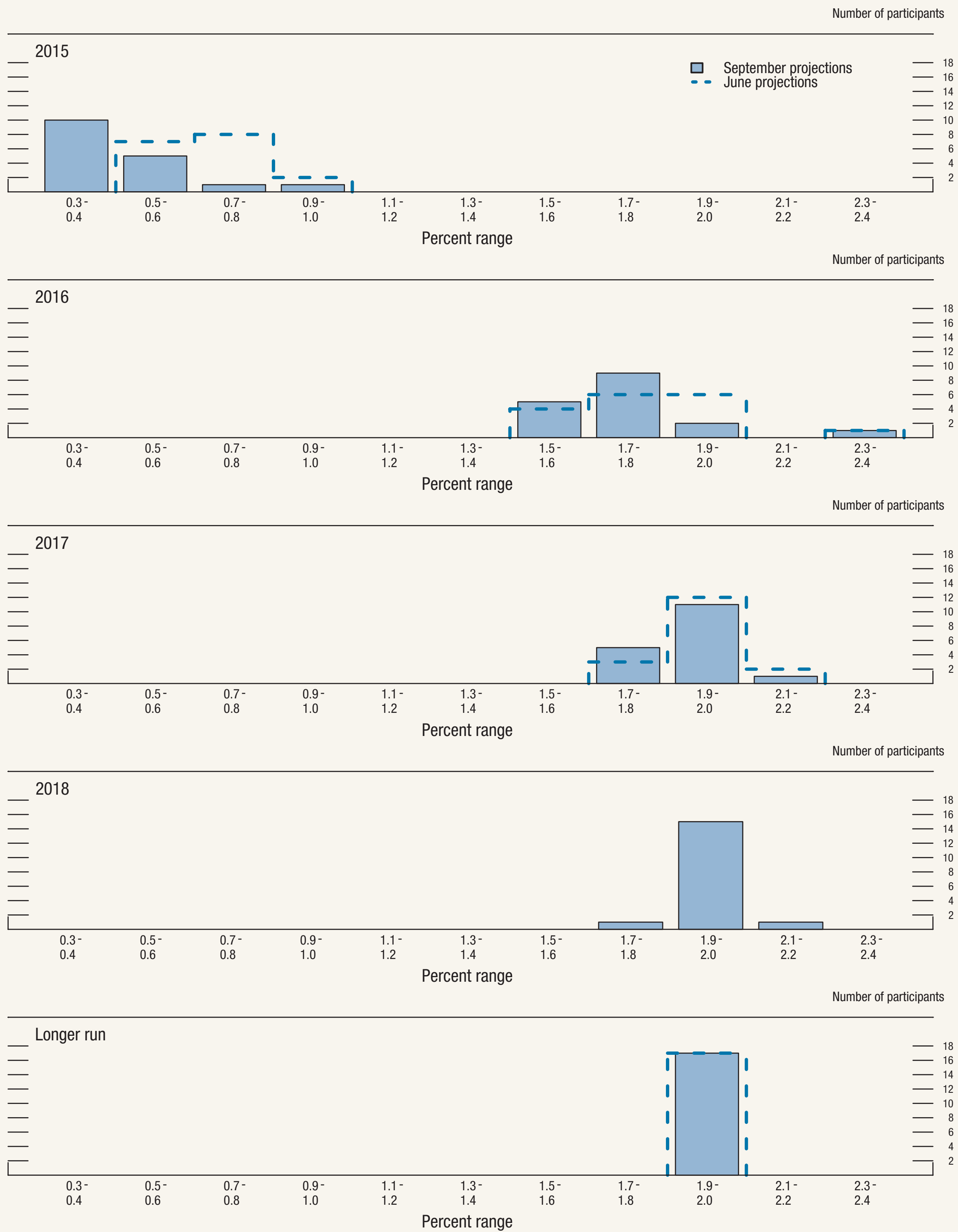
Most participants projected that the unemployment rate would be at or only slightly above their estimates of its longer-run normal level at the end of the year in which they judged the initial increase in the target range for the federal funds rate would be warranted. All participants projected that inflation would be below the Committee's 2 percent objective in that year, but they also saw inflation rising substantially closer to 2 percent in the following year.

Figure 3.E provides the distribution of participants' judgments regarding the appropriate level of the target federal funds rate at the end of each calendar year from 2015 to 2018 and over the longer run. Relative to June, the median value of the federal funds rate decreased 25 basis points at the end of 2015, 2016, and 2017 to 0.38 percent, 1.38 percent, and 2.63 percent, respectively, and the dispersion of the projections for the federal funds rate widened from 2015 through 2017.

Almost all participants judged that it would be appropriate for the federal funds rate to remain noticeably below its longer-run normal level over the next two years even though the unemployment rate was anticipated to be near its mandate-consistent level and most participants expected inflation to be close to 2 percent by 2017. The reasons cited for only gradually increasing the federal funds rate included an assessment that the headwinds that have been holding back the economic expansion will continue to exert some restraint on economic activity, partly because weak activity abroad and the recent appreciation of the dollar are likely to continue to damp U.S. net exports for some time. As support for a view that accommodative monetary policy would remain appropriate over the next few years, some participants also noted their assessment that residual slack in the labor market will still be evident in measures of labor utilization other than the unemployment rate, or that the risks to the economic outlook are asymmetric as a result of the constraints on monetary policy associated with the effective lower bound on the federal funds rate. Most participants expected the federal funds rate to be at or only slightly below its longer-run normal level by 2018.

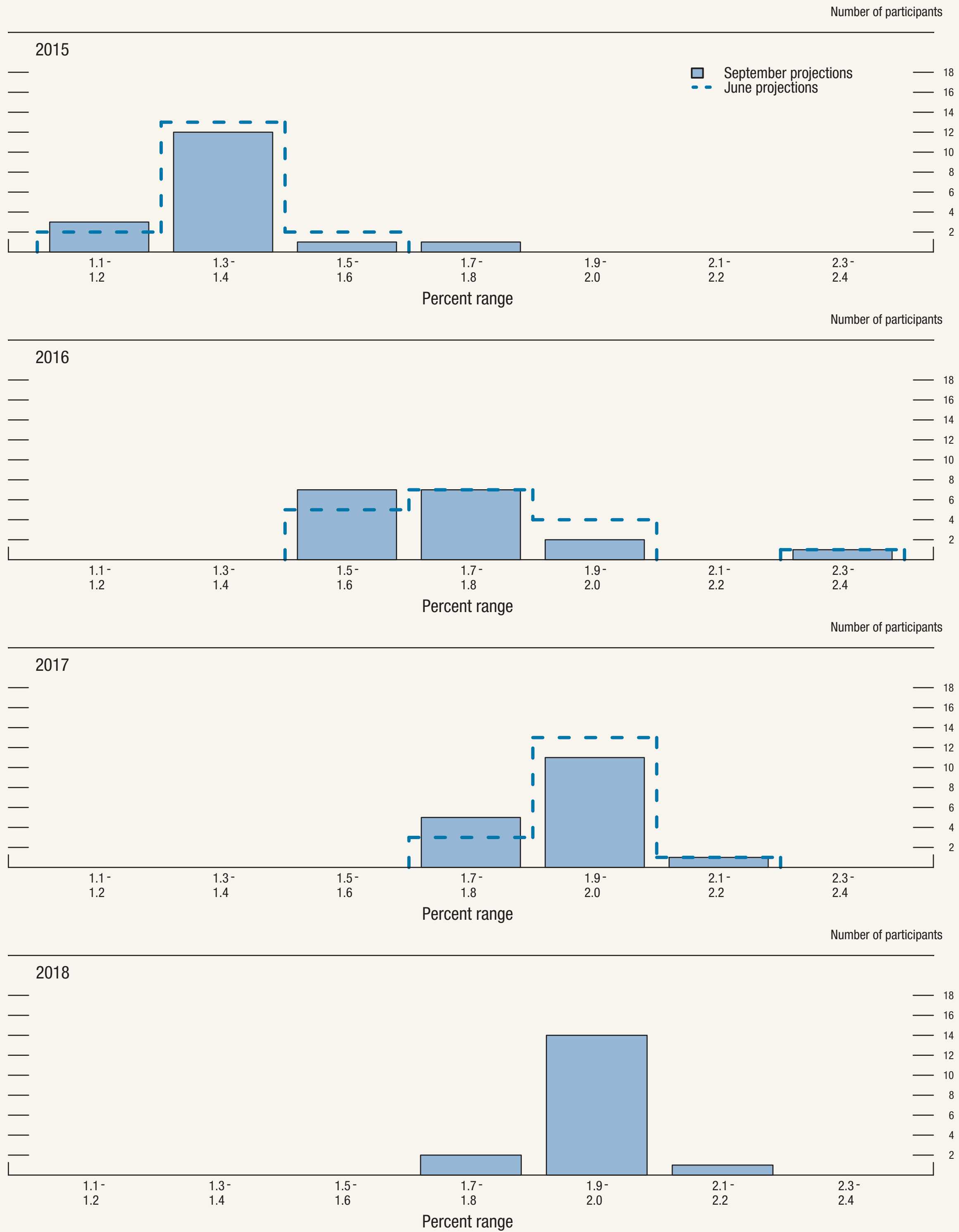
Relative to the June SEP, more than half of the participants revised down their estimates of the longer-run level of the federal funds rate, with a lower assessment of the economy's longer-run growth potential generally cited as a contributing factor. The

Figure 3.C. Distribution of participants' projections for PCE inflation, 2015–18 and over the longer run



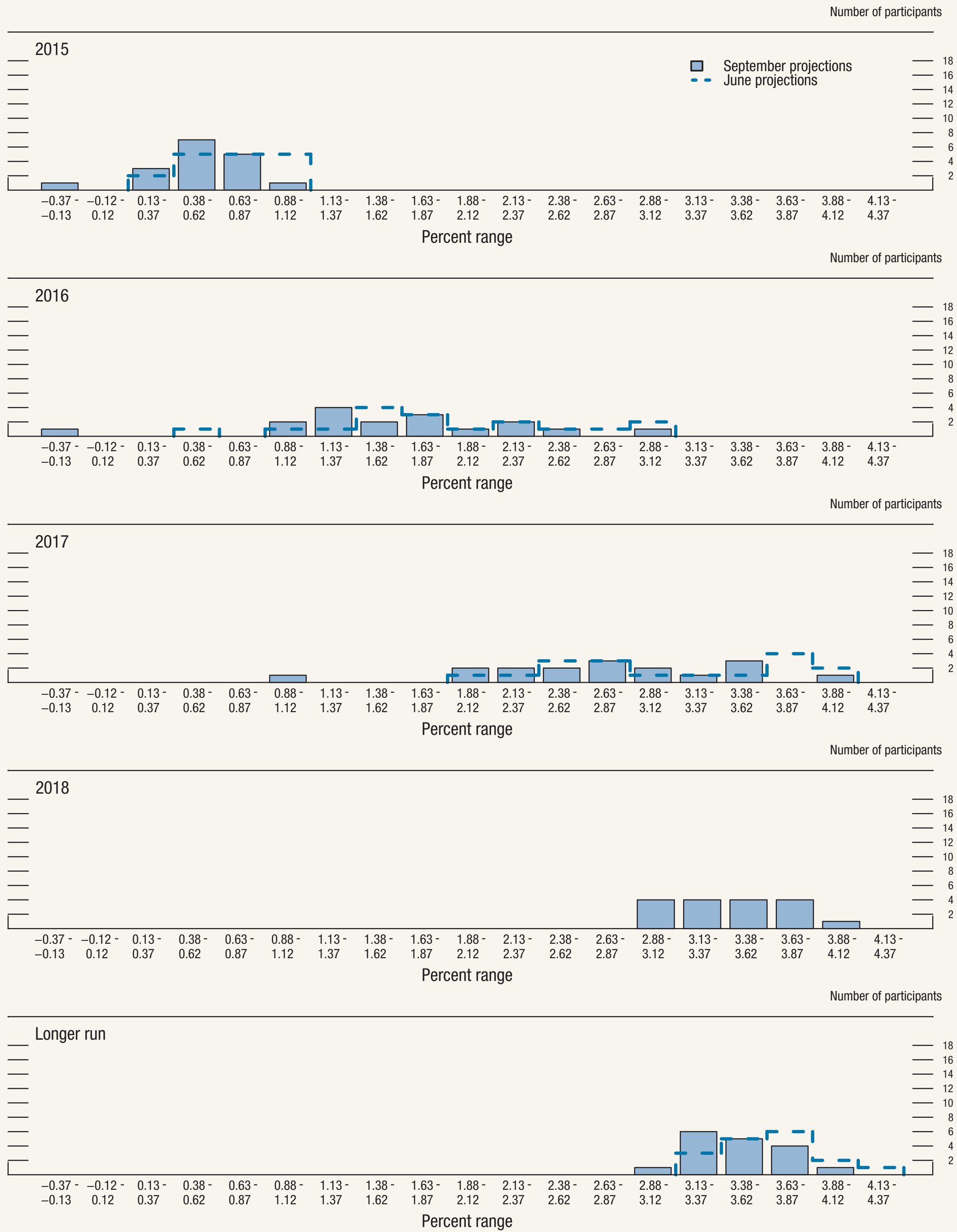
Note: Definitions of variables are in the general note to table 1.

Figure 3.D. Distribution of participants' projections for core PCE inflation, 2015–18



Note: Definitions of variables are in the general note to table 1.

Figure 3.E. Distribution of participants' judgments of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate, 2015–18 and over the longer run



Note: The midpoints of the target ranges for the federal funds rate and the target levels for the federal funds rate are measured at the end of the specified calendar year or over the longer run.

Table 2. Average historical projection error ranges
Percentage points

Variable	2015	2016	2017	2018
Change in real GDP[1]	±1.3	±1.9	±2.1	±2.2
Unemployment rate[1]	±0.3	±1.0	±1.7	±1.9
Total consumer prices[2]	±0.8	±1.0	±1.1	±1.0

Note: Error ranges shown are measured as plus or minus the root mean squared error of projections for 1995 through 2014 that were released in the fall by various private and government forecasters. As described in the box "Forecast Uncertainty," under certain assumptions, there is about a 70 percent probability that actual outcomes for real GDP, unemployment, and consumer prices will be in ranges implied by the average size of projection errors made in the past. For more information, see David Reifschneider and Peter Tulip (2007), "Gauging the Uncertainty of the Economic Outlook from Historical Forecasting Errors," Finance and Economics Discussion Series 2007-60 (Washington: Board of Governors of the Federal Reserve System, November), available at www.federalreserve.gov/pubs/feds/2007/200760/200760abs.html; and Board of Governors of the Federal Reserve System, Division of Research and Statistics (2014), "Updated Historical Forecast Errors," memorandum, April 9, www.federalreserve.gov/foia/files/20140409-historical-forecast-errors.pdf.

1 Definitions of variables are in the general note to table 1.

2 Measure is the overall consumer price index, the price measure that has been most widely used in government and private economic forecasts. Projection is percent change, fourth quarter of the previous year to the fourth quarter of the year indicated.

median estimate of the longer-run normal federal funds rate declined 25 basis points from June, and the range moved down from 3.25 to 4.25 percent to 3.0 to 4.0 percent. All participants judged that inflation in the longer run would be equal to the Committee's objective of 2 percent, implying that their individual judgments regarding the appropriate longer-run level of the real federal funds rate in the absence of further shocks to the economy ranged from 1.0 to 2.0 percent.

Participants' views of the appropriate path for monetary policy were informed by their judgments about the state of the economy, including the values of the unemployment rate and other labor market indicators that would be consistent with maximum employment, their estimates of the current extent of slack in the labor market, the prospects for inflation to return to the Committee's longer-term objective of 2 percent, the implications of international developments for the domestic economy, the pace at which headwinds that have been restraining economic activity dissipate and underlying momentum in the economy strengthens, the desire to minimize potential disruptions in financial markets that could result from a steep increase in the target federal funds rate following liftoff, and the risks around the outlook for economic activity and inflation. Some participants also mentioned the prescriptions of various monetary policy rules as factors they considered in judging the appropriate path for the federal funds rate.

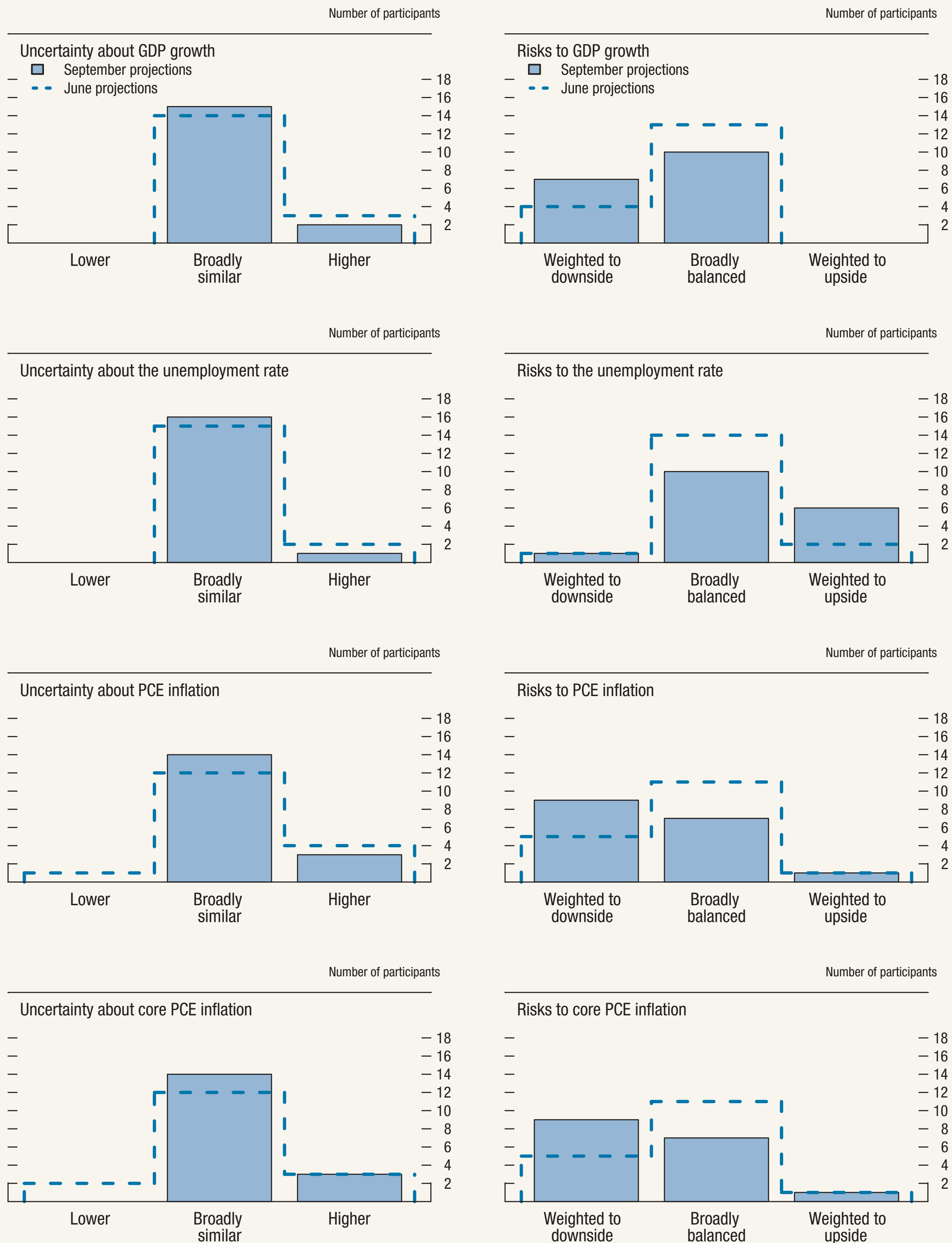
Uncertainty and Risks

Nearly all participants continued to judge the levels of uncertainty attending their projections for real GDP growth and the unemployment rate as broadly similar to the norms during the previous 20 years (figure 4).[2] Most participants continued to see the risks to their outlooks for real GDP growth as broadly balanced, although a larger number than in June viewed the risks to real GDP growth as weighted to the downside. Those participants who viewed the risks as weighted to the downside cited, for example, a weaker outlook for economic activity abroad and the recent appreciation of the dollar. Most participants judged the risks to the outlook for the unemployment rate to be broadly balanced, though more participants than in June viewed the risks to the unemployment rate as weighted to the upside.

As in the June SEP, participants generally agreed that the levels of uncertainty associated with their inflation forecasts were broadly similar to historical norms. Many participants viewed the risks to their inflation forecast as balanced. However, the risks were seen as tilted to the downside by more than half of the participants, an increase since the June SEP. These participants cited the recent declines in market-based measures of inflation compensation and commodity prices and the appreciation of the dollar as factors that could place greater downward pressure on prices than anticipated.

2 Table 2 provides estimates of the forecast uncertainty for the change in real GDP, the unemployment rate, and total consumer price inflation over the period from 1995 through 2014. At the end of this summary, the box "Forecast Uncertainty" discusses the sources and interpretation of uncertainty in the economic forecasts and explains the approach used to assess the uncertainty and risks attending the participants' projections.

Figure 4. Uncertainty and risks in economic projections



Note: For definitions of uncertainty and risks in economic projections, see the box "Forecast Uncertainty." Definitions of variables are in the general note to table 1.

Forecast Uncertainty

The economic projections provided by the members of the Board of Governors and the presidents of the Federal Reserve Banks inform discussions of monetary policy among policymakers and can aid public understanding of the basis for policy actions. Considerable uncertainty attends these projections, however. The economic and statistical models and relationships used to help produce economic forecasts are necessarily imperfect descriptions of the real world, and the future path of the economy can be affected by myriad unforeseen developments and events. Thus, in setting the stance of monetary policy, participants consider not only what appears to be the most likely economic outcome as embodied in their projections, but also the range of alternative possibilities, the likelihood of their occurring, and the potential costs to the economy should they occur.

Table 2 summarizes the average historical accuracy of a range of forecasts, including those reported in past *Monetary Policy Reports* and those prepared by the Federal Reserve Board's staff in advance of meetings of the Federal Open Market Committee. The projection error ranges shown in the table illustrate the considerable uncertainty associated with economic forecasts. For example, suppose a participant projects that real gross domestic product (GDP) and total consumer prices will rise steadily at annual rates of, respectively, 3 percent and 2 percent. If the uncertainty attending those projections is similar to that experienced in the past and the risks around the projections are broadly balanced, the numbers reported in table 2 would imply a probability of about 70 percent that actual GDP would expand within a range of 1.7 to 4.3 percent in the current year, 1.1 to 4.9 percent in the second year, 0.9 to 5.1 percent in the third year, and 0.8 to 5.2 percent in the fourth year. The corresponding 70 percent confidence intervals for overall inflation would be 1.2 to 2.8 percent in the current year, 1.0 to 3.0 percent in the second year, 0.9 to 3.1 percent in the third year, and 1.0 to 3.0 percent in the fourth year.

Because current conditions may differ from those that prevailed, on average, over history, participants provide judgments as to whether the uncertainty attached to their projections of each variable is greater than, smaller than, or broadly similar to typical levels of forecast uncertainty in the past, as shown in table 2. Participants also provide judgments as to whether the risks to their projections are weighted to the upside, are weighted to the downside, or are broadly balanced. That is, participants judge whether each variable is more likely to be above or below their projections of the most likely outcome. These judgments about the uncertainty and the risks attending each participant's projections are distinct from the diversity of participants' views about the most likely outcomes. Forecast uncertainty is concerned with the risks associated with a particular projection rather than with divergences across a number of different projections.

As with real activity and inflation, the outlook for the future path of the federal funds rate is subject to considerable uncertainty. This uncertainty arises primarily because each participant's assessment of the appropriate stance of monetary policy depends importantly on the evolution of real activity and inflation over time. If economic conditions evolve in an unexpected manner, then assessments of the appropriate setting of the federal funds rate would change from that point forward.

Meeting Held on October 27–28, 2015

A joint meeting of the Federal Open Market Committee and the Board of Governors was held in the offices of the Board of Governors of the Federal Reserve System in Washington, D.C., on Tuesday, October 27, 2015, at 10:00 a.m. and continued on Wednesday, October 28, 2015, at 9:00 a.m.

Present

Janet L. Yellen
Chair

William C. Dudley
Vice Chairman

Lael Brainard

Charles L. Evans

Stanley Fischer

Jeffrey M. Lacker

Dennis P. Lockhart

Jerome H. Powell

Daniel K. Tarullo

John C. Williams

James Bullard, Esther L. George, Loretta J. Mester, Eric Rosengren, and Michael Strine
Alternate Members of the Federal Open Market Committee

Patrick Harker, Robert S. Kaplan, and Narayana Kocherlakota
Presidents of the Federal Reserve Banks of Philadelphia, Dallas, and Minneapolis, respectively

Brian F. Madigan
Secretary

Matthew M. Luecke
Deputy Secretary

David W. Skidmore
Assistant Secretary

Michelle A. Smith
Assistant Secretary

Scott G. Alvarez
General Counsel

Steven B. Kamin
Economist

Thomas Laubach
Economist

David W. Wilcox
Economist

David Altig, Thomas A. Connors, Eric M. Engen, Michael P. Leahy, William R. Nelson, Glenn D. Rudebusch, Daniel G. Sullivan, and William Wascher
Associate Economists

Simon Potter
Manager, System Open Market Account

Lorie K. Logan
Deputy Manager, System Open Market Account

Robert deV. Frierson[1]
Secretary of the Board, Office of the Secretary, Board of Governors

Michael S. Gibson
Director, Division of Banking Supervision and Regulation, Board of Governors

Nellie Liang
Director, Office of Financial Stability Policy and Research, Board of Governors

Margaret Shanks[2]
Deputy Secretary, Office of the Secretary, Board of Governors

James A. Clouse and Stephen A. Meyer
Deputy Directors, Division of Monetary Affairs, Board of Governors

Andreas Lehnert
Deputy Director, Office of Financial Stability Policy and Research, Board of Governors

William B. English
Senior Special Adviser to the Board, Office of Board Members, Board of Governors

Andrew Figura and Stacey Tevlin
Special Advisers to the Board, Office of Board Members, Board of Governors

Trevor A. Reeve
Special Adviser to the Chair, Office of Board Members, Board of Governors

Linda Robertson
Assistant to the Board, Office of Board Members, Board of Governors

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1 Attended Tuesday morning's discussion of equilibrium real interest rates and Wednesday's session.

2 Attended Tuesday's session following the discussion of equilibrium real interest rates.

David E. Lebow
Senior Associate Director, Division of Research and Statistics, Board of Governors

Jeremy B. Rudd
Senior Adviser, Division of Research and Statistics, Board of Governors

Joyce K. Zickler
Senior Adviser, Division of Monetary Affairs, Board of Governors

Fabio M. Natalucci
Associate Director, Division of Monetary Affairs, Board of Governors

Joseph W. Gruber[3]
Deputy Associate Director, Division of International Finance, Board of Governors

Jane E. Ihrig[4] **and David López-Salido**[5]
Deputy Associate Directors, Division of Monetary Affairs, Board of Governors

Glenn Follette and John M. Roberts
Assistant Directors, Division of Research and Statistics, Board of Governors

Christopher J. Gust
Assistant Director, Division of Monetary Affairs, Board of Governors

Robert J. Tetlow
Adviser, Division of Monetary Affairs, Board of Governors

Penelope A. Beattie[3]
Assistant to the Secretary, Office of the Secretary, Board of Governors

Dana L. Burnett
Section Chief, Division of Monetary Affairs, Board of Governors

Andrea Raffo[5]
Section Chief, Division of International Finance, Board of Governors

David H. Small
Project Manager, Division of Monetary Affairs, Board of Governors

Yuriy Kitsul
Senior Economist, Division of Monetary Affairs, Board of Governors

Benjamin K. Johannsen[5]
Economist, Division of Monetary Affairs, Board of Governors

David Sapenaro
First Vice President, Federal Reserve Bank of St. Louis

Jeff Fuhrer
Executive Vice President, Federal Reserve Bank of Boston

Kei-Mu Yi
Special Policy Advisor to the President, Federal Reserve Bank of Minneapolis

Michael Dotsey, Michael Held, Evan F. Koenig, and Christopher J. Waller
Senior Vice Presidents, Federal Reserve Banks of Philadelphia, New York, Dallas, and St. Louis, respectively

Edward S. Knotek II and George A. Kahn
Vice Presidents, Federal Reserve Banks of Cleveland and Kansas City, respectively

Robert Rich and Andrea Tambalotti[5]
Assistant Vice Presidents, Federal Reserve Bank of New York

Andreas L. Hornstein
Senior Advisor, Federal Reserve Bank of Richmond

Jing Zhang[5]
Senior Economist, Federal Reserve Bank of Chicago

Equilibrium Real Interest Rates

The staff presented several briefings regarding the concept of an equilibrium real interest rate—sometimes labeled the "neutral" or "natural" real interest rate, or "r*"—that can serve as a benchmark to help gauge the stance of monetary policy. Various concepts of r* were discussed. According to one definition, short-run r* is the level of the real short-term interest rate that, if obtained currently, would result in the economy operating at full employment or, in some simple models of the economy, at full employment and price stability. The staff summarized the behavior of estimates of the short-run equilibrium real rate over recent business cycles as well as longer-run trends in real interest rates and key factors that influence those trends. Estimates derived using a variety of empirical models of the U.S. economy and a range of econometric techniques indicated that short-run r* fell sharply with the onset of the 2008–09 financial crisis and recession, quite likely to negative levels. Short-run r* was estimated to have

[3] Attended Tuesday's session only.
[4] Attended through the discussion of financial developments and open market operations.
[5] Attended through the discussion of equilibrium real interest rates.

recovered only partially and to be close to zero currently, still well below levels that prevailed during recent economic expansions when the unemployment rate was close to estimates of its longer-run normal level.

With respect to longer-run trends, the staff noted that multiyear averages of short-term real interest rates had been declining not only in the United States, but also in many other large economies for the past quarter-century and stood near zero in most of those economies. Moreover, economic theory indicates that the equilibrium level of short-term real interest rates would likely remain low relative to estimates of its level before the financial crisis if trend growth of total factor productivity does not pick up and if demographic projections for slow growth in working-age populations are borne out. Finally, the staff discussed the implications of uncertainty about the level of the equilibrium real rate for using estimates of short-run r* as a guideline for appropriate monetary policy.

In their comments on the briefings and in their discussion of the potential use of r* in monetary policy deliberations, policymakers made a number of observations. The unemployment rate has declined gradually in recent years, indicating that real gross domestic product (GDP) growth has, on average, exceeded growth of potential GDP, but not by a substantial margin. This outcome, in turn, suggested that the actual level of short-term real interest rates has been below but not substantially below the equilibrium real rate, consistent with estimates that r* currently is close to zero, notably below its historical average.

A number of participants indicated that they expected short-run r* to rise as the economic expansion continued, but probably only gradually. Moreover, it was noted that the longer-run downward trend in real interest rates suggested that short-run r* would likely remain below levels that were normal during previous business cycle expansions, and that the longer-run normal level to which the nominal federal funds rate might be expected to converge in the absence of further shocks to the economy—that is, the level that would be consistent, in the long run, with maximum employment and 2 percent inflation—would likely be lower than was the case in previous decades. A lower long-run level of r* would also imply that the gap between the actual level of the federal funds rate and its near-zero effective lower bound would be smaller on average. A smaller gap might increase the frequency of episodes in which policymakers would not be able to reduce the federal funds rate enough to promote a strong economic recovery and rapid return to maximum employment or to maintain price stability in the aftermath of negative shocks to aggregate demand. Some participants noted that it would be prudent to have additional policy tools that could be used in such situations.

Developments in Financial Markets, Open Market Operations, and Policy Normalization

The deputy manager of the System Open Market Account (SOMA) reported on developments in domestic and foreign financial markets, money markets, and System open market operations conducted by the Open Market Desk during the period since the Federal Open Market Committee (FOMC) met on September 16–17. Take-up of the System's overnight reverse repurchase agreement operations increased during this period, evidently reflecting a modest narrowing of the spread of money market interest rates over the offered rate on such operations. Total take-up of overnight and term reverse repurchase agreements at the end of the third quarter was also elevated. The deputy manager briefed the Committee on plans for the upcoming quarterly test of the Term Deposit Facility in December and for term reverse repurchase agreement operations to be conducted ahead of year-end. In addition, an update was provided on a data collection that will allow the calculation of the federal funds effective rate and a new overnight bank funding rate based on transaction-level data reported by depository institutions that are active in overnight bank funding markets; as previously reported, the Federal Reserve expects to begin publication of the rates based on these data in the first few months of 2016.

A staff presentation reviewed issues that could arise if the Treasury was temporarily unable to meet its obligations because of constraints associated with the statutory federal debt limit. Following the presentation, policymakers indicated that, if such issues arose, it remained appropriate to follow the strategy for open market operations, the discount window, and other System responsibilities that was discussed at the Committee's video-conference meeting of October 16, 2013, and summarized in the minutes of that meeting.

By unanimous vote, the Committee ratified the Desk's domestic transactions over the intermeeting

period. There were no intervention operations in foreign currencies for the System's account over the intermeeting period.

Staff Review of the Economic Situation

The information reviewed for the October 27–28 meeting suggested that real GDP was increasing at a moderate pace, but that the improvement in labor market conditions had slowed somewhat in recent months. Inflation continued to run below the FOMC's longer-run objective of 2 percent, restrained in part by declines in energy prices and prices of non-energy imported goods. Survey measures of longer-run inflation expectations remained stable; market-based measures of inflation compensation moved slightly lower.

Total nonfarm payroll employment expanded at about the same rate in September as in August, although at a slower pace than earlier this year, and the unemployment rate remained at 5.1 percent. Both the labor force participation rate and the employment-to-population ratio edged down. However, the share of workers employed part time for economic reasons fell a little. The rate of private-sector job openings declined in August but was still at a high level, while the rates of hiring and quits were unchanged.

Industrial production decreased in September as the output of both the manufacturing and mining sectors declined, likely reflecting the effects of the appreciation in the foreign exchange value of the dollar and the fall in crude oil prices since the middle of last year. Automakers' assembly schedules, as well as broader indicators of manufacturing production, such as the readings on new orders from national and regional manufacturing surveys, generally pointed to further decreases in factory output in coming months. Recent information on crude oil and natural gas extraction indicated further declines in mining output.

Real personal consumption expenditures (PCE) appeared to rise at a solid rate in the third quarter as a whole. The components of the nominal retail sales data used by the Bureau of Economic Analysis to construct its estimate of PCE increased only slightly in September, but the rate of sales of light motor vehicles rose to a new high for the year. Real disposable income grew at a solid pace in July and August. Households' net worth was boosted by recent gains in home values and the net increase in equity prices over the intermeeting period. Moreover, consumer sentiment in the University of Michigan Surveys of Consumers improved in early October.

Activity in the housing sector was mixed, but it generally continued to recover slowly. Starts of new single-family homes stepped down modestly, on net, over August and September, although building permits increased slightly. Meanwhile, starts of multifamily units rose notably. Sales of new and existing homes moved down somewhat on balance.

Real private expenditures for business equipment and intellectual property products appeared to increase at a solid pace in the third quarter. Nominal shipments of nondefense capital goods excluding aircraft rose in September. However, forward-looking indicators, such as new orders for these capital goods along with national and regional surveys of business conditions, pointed to more modest increases in business equipment spending in the coming months. Firms' nominal spending for nonresidential structures excluding drilling and mining rose in August, although available indicators of drilling activity, such as the number of oil and gas rigs in operation, continued to fall. Real private inventory investment appeared to have slowed markedly in the third quarter.

Total real government purchases looked to have moved sideways in the third quarter. Federal government purchases likely declined a little, as defense spending stepped down further. In contrast, state and local government purchases appeared to have been rising; the payrolls of these governments expanded further in September, and their nominal construction spending in July and August was above its level in the second quarter.

The U.S. international trade deficit widened in August as exports declined and imports rose. The fall in exports was concentrated in industrial supplies, while consumer and capital goods accounted for much of the growth in imports. Advance estimates for September indicated a narrower merchandise trade deficit, with a rebound in exports and a decline in imports relative to August. After falling sharply early this year, real net exports were little changed in the second quarter and appeared to have stayed flat in the third quarter, with real exports remaining soft.

Total U.S. consumer prices in August, as measured by the PCE price index, were unchanged from 12 months earlier, reflecting large declines in consumer energy prices. Core PCE inflation, which

excludes changes in food and energy prices, was 1¼ percent over the same 12-month period, restrained in part by declines in the prices of non-energy goods imports. In September, total consumer prices as measured by the consumer price index (CPI) were unchanged from a year earlier, while the core CPI increased almost 2 percent. Measures of expected longer-run inflation from a number of surveys, including the Michigan survey, the Blue Chip Economic Indicators, and the Desk's Survey of Primary Dealers, remained stable. However, market-based measures of inflation compensation moved a little lower. Average hourly earnings for all employees increased 2¼ percent over the 12 months ending in September, a pace that was faster than consumer price inflation.

Foreign economic growth appeared to have improved somewhat in the third quarter following two quarters of slow growth. Economic activity rebounded in Canada after disruptions to energy production earlier in the year, and real GDP growth jumped to 5 percent in South Korea as the effects of the MERS (Middle East Respiratory Syndrome) outbreak faded. Chinese real GDP growth remained around 7 percent on a four-quarter change basis, and information on economic activity in the euro area and the United Kingdom was consistent with continued expansion. However, indicators of economic activity in Japan and Brazil remained weak. Headline inflation was low in many countries as a result of falling energy prices. Inflation rates remained high in some South American countries whose currencies had recently depreciated sharply.

Staff Review of the Financial Situation

Continued concerns about the global economic growth outlook weighed on market sentiment in the United States and abroad early in the intermeeting period, but sentiment improved somewhat in the weeks preceding the October FOMC meeting. Following the weaker-than-expected report on the U.S. employment situation in September, market participants' expectations for the timing of the initial increase in the target range for the federal funds rate shifted out, and their expectation for the subsequent path of the federal funds rate flattened. Financing conditions for most businesses and households remained accommodative but tightened somewhat for businesses with lower credit quality.

Federal Reserve communications and economic data releases over the intermeeting period appeared to have led investors to expect a later start date for monetary policy normalization and a more gradual path for the federal funds rate thereafter. According to federal funds futures quotes just before the October FOMC meeting, as well as results from the Desk's Survey of Primary Dealers and Survey of Market Participants, market participants saw a significantly lower chance of the initial increase in the target range for the federal funds rate occurring before year-end than they perceived just before the September meeting, while the likelihood of liftoff occurring at or after the March 2016 meeting rose. The expected path for the federal funds rate implied by quotes on overnight index swap rates flattened notably over the intermeeting period.

Nominal Treasury yields declined further, reflecting FOMC communications, concerns about global economic growth, and generally weaker-than-expected U.S. economic data releases. Measures of inflation compensation based on Treasury Inflation-Protected Securities moved slightly lower on net.

Broad U.S. equity price indexes fell in the first few weeks after the September FOMC meeting but subsequently more than retraced those declines. Spreads of yields on triple-B-rated corporate bonds over comparable-maturity Treasury securities changed little, on balance, and those on speculative-grade corporate bonds widened notably across sectors. Across the credit spectrum, spreads were generally near their highest levels in several years and ended the period above their historical medians. Based on available reports and analysts' estimates, aggregate corporate earnings per share in the third quarter were expected to decrease slightly, with large declines in the energy and materials sectors. Spreads on leveraged loans increased in August and moved up, on balance, over the intermeeting period.

Overall, financing conditions for nonfinancial businesses were generally accommodative but tightened somewhat for lower-rated firms. Corporate bond issuance rebounded in September after a slowdown in August. The expansion of commercial and industrial loans on banks' books moderated slightly during the third quarter, and lending standards were little changed, on net, after several years of easing, according to the October Senior Loan Officer Opinion Survey on Bank Lending Practices (SLOOS). Financing conditions for small businesses continued to improve, with loan originations maintaining their upward trend, although indicators of the optimism of small business owners declined in recent months. Financing

conditions for municipalities remained accommodative on balance. Even though news reports on Puerto Rico's public-sector debt situation garnered attention of market participants, credit default swap spreads on Puerto Rico's general obligation debt were little changed over the intermeeting period.

Spreads on commercial mortgage-backed securities (CMBS) widened over the intermeeting period, while respondents in the SLOOS reported that standards on commercial real estate (CRE) loans were little changed in the third quarter. Overall, CRE financing appeared to remain broadly available. All major categories of CRE loans on banks' balance sheets expanded robustly through September, consistent with reports of stronger demand for such loans in the SLOOS.

Credit conditions for residential mortgages eased modestly, on net, in the third quarter. A moderate net fraction of SLOOS respondents continued to ease standards on loans eligible for purchase by the government-sponsored enterprises and on jumbo loans, but standards on government-backed loans tightened somewhat. Interest rates on 30-year fixed-rate mortgages declined over the intermeeting period.

Conditions in consumer credit markets remained accommodative on balance. Outstanding credit card balances expanded further in August, and a moderate net fraction of banks in the SLOOS indicated that they eased standards on such loans during the third quarter. However, credit card limits remained mostly flat overall and were fairly tight for subprime borrowers. The growth of auto and student loans stayed robust.

Continued concerns about the outlook for global economic growth weighed on commodity and foreign equity prices early in the intermeeting period. These declines subsequently were reversed, and foreign equity price indexes ended the period higher, pushed up by expectations of additional monetary policy accommodation in major foreign economies and some favorable economic indicators in China.

The broad nominal index of the dollar's foreign exchange value ended the period little changed on balance. The dollar depreciated early in the period following the weaker-than-expected U.S. employment report for September and the subsequent downward shift of the expected path for U.S. policy rates. But this decline was balanced by subsequent appreciation, in part as expectations increased for greater monetary policy accommodation abroad. These shifting expectations also contributed to a decline in sovereign yields in the advanced foreign economies.

The staff provided its latest report on potential risks to financial stability. Since the previous report in July, financial markets around the globe experienced a surge in volatility that peaked in late August amid concerns regarding slowing economic growth in emerging market economies and potential implications for advanced economies. This volatility was accompanied by sizable declines in the prices of some risky assets, and an increase in risk aversion eased valuation pressures in the corporate bond market. Issuance of speculative-grade corporate bonds and leveraged loans slowed from the rapid pace seen earlier this year. The U.S. financial system appeared to absorb the shocks without systemic strains, supported by relatively high capital positions of large banking organizations and insurance firms and by restrained use of short-term wholesale funding across the financial sector. Moreover, leverage in the nonfinancial sector remained modest overall. However, leverage of speculative-grade and unrated nonfinancial corporations stayed near record levels. Rising CRE prices, accompanied by loosening underwriting standards in CMBS markets, continued to suggest valuation pressures.

Staff Economic Outlook

In the economic forecast prepared by the staff for the October FOMC meeting, real GDP growth in the second half of this year was a little lower, on balance, than in the projection for the September meeting, largely reflecting a downward revision to estimated inventory investment. The staff's medium-term projection for real GDP growth was essentially unrevised from the previous forecast. The staff continued to project that real GDP would expand at a somewhat faster pace than potential output from 2016 through 2018, supported primarily by increases in consumer spending. The unemployment rate was expected to decline gradually and to run a little below the staff's estimate of its longer-run natural rate over this period.

The staff's forecast for inflation in the near term was revised up a little, reflecting recent data, and it was unrevised over the medium term. Energy prices and prices of non-energy imported goods were expected to begin steadily rising next year. The staff projected that inflation would increase gradually over the next several years but would still be slightly below the

Committee's longer-run objective of 2 percent at the end of 2018. However, inflation was anticipated to reach 2 percent thereafter, with inflation expectations in the longer run assumed to be consistent with the Committee's objective and slack in labor and product markets projected to have waned.

The staff viewed the uncertainty around its October projections for real GDP growth, the unemployment rate, and inflation as similar to the average of the past 20 years. The risks to the forecast for real GDP and inflation were seen as tilted to the downside, reflecting the staff's assessment that neither monetary nor fiscal policy was well positioned to help the economy withstand substantial adverse shocks. Consistent with this downside risk to aggregate demand, the staff viewed the risks to its outlook for the unemployment rate as tilted to the upside.

Participants' Views on Current Conditions and the Economic Outlook

In their discussion of the economic situation and the outlook, meeting participants saw the information received over the intermeeting period as suggesting that economic activity had been expanding moderately. Household spending and business fixed investment increased at solid rates in recent months, and the housing sector improved further. However, net exports remained soft. Participants noted that the pace of job gains slowed while the unemployment rate held steady; nonetheless, a range of labor market indicators, on balance, suggested that underutilization of labor resources had diminished since early this year. With private domestic final demand expanding at a solid pace, participants generally viewed the incoming data as confirming their assessment that economic activity would continue to expand at a moderate rate, leading to further improvement in labor market conditions. However, some participants were concerned that the recent slowdown in employment growth might prove more than temporary, and that improvement in labor market conditions might not continue. Most participants saw the downside risks arising from economic and financial developments abroad as having diminished and judged the risks to the outlook for domestic economic activity and the labor market to be nearly balanced. A few participants, though, noted that downside risks from abroad were still significant. Inflation continued to run below the Committee's 2 percent longer-run objective, partly reflecting declines in energy prices and prices of non-energy imports. Market-based measures of inflation compensation moved slightly lower; survey-based measures of longer-term inflation expectations remained stable. Participants generally anticipated that inflation would rise gradually toward 2 percent as the labor market improved further and the transitory effects of earlier declines in energy and import prices dissipated.

Notwithstanding the disappointing retail sales data in September, participants were encouraged by the solid pace of consumption growth in the third quarter and generally expected consumer spending to rise moderately going forward. Gains in employment and income, low gasoline prices, and a high level of consumer confidence were viewed as factors that should support consumer spending. The available reports from District contacts in the retail and auto industries indicated solid gains in consumer spending, and contacts were optimistic about the near-term outlook.

Participants generally viewed the housing sector as continuing to recover, although a couple of participants noted that the pace of recovery was slow. Contacts in a number of Districts were upbeat about the sector, citing rising home prices and a healthy pace of construction and sales.

Participants noted that business fixed investment appeared to be increasing at a solid rate despite the sharp contraction in energy-related investment. Nonresidential construction was reported to be expanding in a number of regions. A large decline in inventory investment was expected to reduce the pace of GDP growth in the third quarter, but participants saw further outsized declines in inventory accumulation as unlikely. Participants expected net exports to continue to subtract from GDP growth in the second half of the year, reflecting weak foreign activity as well as the earlier appreciation of the dollar. However, solid underlying momentum in private domestic demand was anticipated to support economic growth going forward.

Manufacturing activity had slowed somewhat over the intermeeting period in a number of regions, importantly reflecting the weakness in exports, although the auto industry remained a bright spot. Weakness in commodity prices also continued to weigh on activity in the energy and agricultural sectors. Moreover, industry contacts remained pessimistic about the outlook for the energy sector. The substantial global supply of crude oil seemed likely to weigh on energy prices for some time, contributing to

an increase in restructurings and bankruptcies in this sector. In contrast, service-sector reports were mostly positive.

Although employment growth slowed and the unemployment rate held steady in September, participants agreed that underutilization of labor resources had been reduced since earlier in the year. A number of participants expressed the view that further progress would be necessary before labor market conditions were fully consistent with maximum employment, while some others judged that there was little or no remaining underutilization of labor resources. Several participants observed that the recent employment reports had increased the uncertainty about the outlook for the labor market. They discussed whether the slowdown in job gains was merely transitory or indicative of a more persistent slowdown in which labor market conditions might no longer improve. Some other indicators, such as the labor force participation rate and data on job openings, quits, and hiring, had also been softer. Other participants viewed a broad range of recent labor market data as indicating a further reduction in slack and stressed the importance of assessing the cumulative improvement in the labor market since early in the year, which had been significant. Moreover, several participants indicated that they viewed the pace of monthly job gains in September as still above the rate consistent with stable or declining labor market slack, and a few participants interpreted slower increases in payrolls as evidence that labor markets had tightened.

The incoming information on wages and labor compensation, including recent data on average hourly earnings of employees, suggested that the pace of wage gains remained subdued. A number of participants cited staff analysis indicating that the modest pace of labor compensation growth in recent years may have reflected slower trend productivity growth that offset the upward pressure on wages from the narrowing of labor market slack. However, other participants noted that the continued subdued trend in wages was evidence of an absence of upward pressure on inflation from the current level of resource utilization. A number of participants reported that some of their business contacts were experiencing increasing challenges in hiring, resulting in upward pressure on wages in various occupations and in some geographic areas.

Participants discussed how recent economic developments influenced their expectations for reaching the FOMC's 2 percent inflation objective over the medium term. Total PCE price inflation, as measured on a 12-month basis, continued to run below the Committee's longer-run objective. Core PCE inflation also remained low, but some other measures of inflation, such as the trimmed mean PCE and trimmed mean CPI measures, continued to run at higher levels than core PCE inflation and had recently moved up modestly. Moreover, a few participants noted that the September CPI data appeared consistent with some firming in inflation. Surveys continued to suggest that longer-run inflation expectations remained stable. Participants still expected that the downward pressure on inflation from the previous declines in energy prices and the effects of past dollar appreciation would prove temporary. Several participants, however, cited downside risks to inflation, pointing, for example, to declines in market-based measures of inflation compensation. Nonetheless, participants generally continued to anticipate that, with appropriate monetary policy, inflation would move toward the Committee's objective over the medium term, reflecting the anticipated tightening of product and labor markets, the waning of downward pressures from energy and import prices, and stable inflation expectations.

Participants also discussed a range of topics related to financial market developments and financial stability. They noted that volatility in global financial markets had abated since the previous FOMC meeting, with equity prices in the United States largely retracing the declines experienced late in the summer. The U.S. financial system appeared to have weathered the turbulence in global financial markets without any sign of systemic stress. Participants commented on issues related to financial stability monitoring and the use of macroprudential tools, the assessment of valuation risks in leveraged loan and real estate markets, the widening of credit spreads on corporate bonds, and potential risks to financial stability stemming from interest rates remaining low for a prolonged period in an environment of a low neutral (or equilibrium) real rate. In addition, it was noted that Puerto Rico continued to face significant challenges servicing its debts, although the associated systemic risks for U.S. financial markets were likely to be minimal.

During their discussion of economic conditions and monetary policy, participants focused on a number of issues associated with the timing and pace of policy normalization. Some participants thought that the conditions for beginning the policy normalization

process had already been met. Most participants anticipated that, based on their assessment of the current economic situation and their outlook for economic activity, the labor market, and inflation, these conditions could well be met by the time of the next meeting. Nonetheless, they emphasized that the actual decision would depend on the implications for the medium-term economic outlook of the data received over the upcoming intermeeting period. Some others, however, judged it unlikely that the information available by the December meeting would warrant raising the target range for the federal funds rate at that meeting.

A number of participants pointed to various reasons why the Committee should avoid a delay in policy firming. One concern was that such a delay, if the reasons were not well understood by market participants, could increase uncertainty in financial markets and unduly magnify the perceived importance of the beginning of the policy normalization process. Another concern mentioned was the increasing risk of a buildup of financial imbalances after a prolonged period of very low interest rates. It was also noted that a decision to defer policy firming could be interpreted as signaling lack of confidence in the strength of the U.S. economy or erode the Committee's credibility. Some participants emphasized that progress toward the Committee's objectives should be assessed in light of the cumulative gains made to date without placing excessive weight on month-to-month changes in incoming data.

Several participants indicated that, despite lessening concerns about the implications of recent global economic and financial developments for domestic economic activity and inflation, appreciable downside risks to the outlook remained. They were concerned about a potential loss of momentum in the economy and the associated possibility that inflation might fail to increase as expected. Such concerns might suggest that the initiation of the normalization process may not yet be warranted. They also noted uncertainty about whether economic growth was robust enough to withstand potential adverse shocks, given the limited ability of monetary policy to offset such shocks when the federal funds rate is near its effective lower bound, and concern that the beginning of policy normalization might be associated with an unwarranted tightening of financial conditions. They believed that in these circumstances, risk-management considerations called for a cautious approach. They judged it appropriate to wait for additional information providing evidence of further improvement in the labor market and increasing their confidence that inflation was on a path to return to 2 percent over the medium term before raising the target range for the federal funds rate. In addition, a couple of participants cited concerns that a premature tightening might damage the credibility of the Committee's inflation objective if inflation stayed below 2 percent for a prolonged period.

Several participants indicated that, in the current low interest rate environment, it would be prudent for the Committee to consider options for providing additional monetary policy accommodation if the outlook for economic activity were to weaken to a degree that seemed likely to undermine continued progress in labor market conditions and impede the movement of inflation back to the Committee's 2 percent objective over the medium term. It was also noted that the Committee would need to reformulate its communications regarding the near-term outlook for monetary policy if the economic outlook weakened significantly.

During their discussion of the likely path for the federal funds rate after the time of the first increase in the target range, participants generally agreed that it would probably be appropriate to remove policy accommodation gradually. Participants also indicated that the expected path of policy, rather than the timing of the initial increase, would be the more important influence on financial conditions and thus on the outlook for the economy and inflation, and they noted the importance of underscoring this view at the time of liftoff. It was noted that beginning the normalization process relatively soon would make it more likely that the policy trajectory after liftoff could be shallow. It was also emphasized that, while participants' most recent economic projections suggested that a gradual increase in the target range for the federal funds rate will likely be appropriate to support progress toward the Committee's dual objectives, monetary policy adjustments ultimately would be dependent on economic and financial developments. These adjustments thus could be either more or less gradual than the Committee currently anticipates, responding to the Committee's assessment of the implications of incoming information for the medium-run outlook.

Committee Policy Action

In their discussion of monetary policy for the period ahead, members judged that information received since the FOMC met in September indicated that

economic activity had been expanding at a moderate pace. Although net exports had been soft and inventory accumulation appeared to have slowed, major domestic components of spending were increasing at solid rates. With concerns about global economic and financial developments having lessened, members continued to see the risks to the outlook for economic activity as nearly balanced, although they were still monitoring these developments. Members indicated that they expected that, with appropriate policy accommodation, economic activity would continue to expand at a moderate pace.

Almost all members agreed that, even though the pace of job gains had slowed and the unemployment rate had held steady over the intermeeting period, labor market indicators, on balance, showed that underutilization of labor resources had diminished since early in the year. Members anticipated that economic activity was likely to expand at a pace sufficient for labor market indicators to continue to move toward, or to remain at, levels the Committee judged consistent with its dual mandate. Inflation continued to run below the Committee's longer-run objective, held down in part by the effects of declines in energy prices and in prices of non-energy imports. Survey-based measures of longer-term inflation expectations had remained stable; market-based measures of inflation compensation had moved slightly lower. While inflation was anticipated to remain near its recent low level in the near term, reflecting the transitory effects of declines in energy and import prices, members continued to expect inflation to rise gradually toward 2 percent over the medium term as the labor market improved further and such transitory effects dissipated. Nonetheless, they agreed to continue monitoring inflation developments closely.

In assessing whether economic conditions and the medium-term economic outlook warranted beginning the process of policy normalization at this meeting, members noted a variety of indicators, including some weaker-than-expected readings on measures of labor market conditions, and almost all members agreed it was appropriate to wait for additional information to clarify whether the recent deceleration in the pace of progress in the labor market was transitory or reflected more persistent factors that might jeopardize further progress. They indicated that they would be assessing a range of labor market indicators over the period ahead to confirm further improvement in the labor market. Members, however, expressed a range of views regarding the extent of further progress in labor market indicators they would need to see to judge it appropriate to raise the target range for the federal funds rate in December.

Members continued to anticipate that inflation would gradually return to the Committee's 2 percent objective over the medium term, but most of them were not yet sufficiently confident of that outlook to begin the normalization process. They generally agreed that their confidence would increase if, as anticipated, economic activity continued to expand at a pace sufficient to increase resource utilization. Other factors important to the inflation outlook were the expectation that the influence of lower energy and commodities prices and the stronger dollar would subside, and that longer-term inflation expectations would remain stable. In this regard, a couple of members expressed concern about the continued decline in market-based measures of inflation compensation. Moreover, the risk was noted that downward pressures on inflation from the appreciation of the dollar could persist.

After assessing the outlook for economic activity, the labor market, and inflation and weighing the uncertainties associated with the outlook, all but one member agreed to leave the target range for the federal funds rate unchanged at this meeting. Members generally agreed that, in light of some weaker-than-expected readings on measures of labor market conditions and in the absence of greater confidence about the inflation outlook, it would be prudent to wait for additional information bearing on the medium-term outlook before initiating the process of policy normalization. One member, however, preferred to raise the target range for the federal funds rate by 25 basis points at this meeting.

In its postmeeting statement, rather than framing its near-term policy path in terms of how long to maintain the current target range, the Committee decided to indicate that, in determining whether it would be appropriate to raise the target range at its next meeting, it would assess both realized and expected progress toward its objectives of maximum employment and 2 percent inflation. Members emphasized that this change was intended to convey the sense that, while no decision had been made, it may well become appropriate to initiate the normalization process at the next meeting, provided that unanticipated shocks do not adversely affect the economic outlook and that incoming data support the expectation that labor market conditions will continue to improve and that inflation will return to the Committee's 2 percent objective over the medium term. Members saw

the updated language as leaving policy options open for the next meeting. However, a couple of members expressed concern that this wording change could be misinterpreted as signaling too strongly the expectation that the target range for the federal funds rate would be increased at the Committee's next meeting. While members differed in their assessment of the likelihood that incoming information will warrant an increase in the target range for the federal funds rate when the Committee meets in December, they agreed that, in making the decision, the Committee will evaluate progress toward its objectives, taking into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments. It was noted that the expected path of the federal funds rate, rather than the exact timing of the initial increase, was most important in influencing financial conditions and thus in affecting the outlook for the economy and inflation. The Committee reiterated its expectation that, even after employment and inflation are near mandate-consistent levels, economic conditions may, for some time, warrant keeping the target federal funds rate below levels the Committee views as normal in the longer run.

The Committee also maintained its policy of reinvesting principal payments from its agency debt and agency mortgage-backed securities in agency mortgage-backed securities and of rolling over maturing Treasury securities at auction. This policy, by keeping the Committee's holdings of longer-term securities at sizable levels, should help maintain accommodative financial conditions.

At the conclusion of the discussion, the Committee voted to authorize and direct the Federal Reserve Bank of New York, until it was instructed otherwise, to execute transactions in the SOMA in accordance with the following domestic policy directive:

> "Consistent with its statutory mandate, the Federal Open Market Committee seeks monetary and financial conditions that will foster maximum employment and price stability. In particular, the Committee seeks conditions in reserve markets consistent with federal funds trading in a range from 0 to ¼ percent. The Committee directs the Desk to undertake open market operations as necessary to maintain such conditions. The Committee directs the Desk to maintain its policy of rolling over maturing Treasury securities into new issues and its policy of reinvesting principal payments on all agency debt and agency mortgage-backed securities in agency mortgage-backed securities. The Committee also directs the Desk to engage in dollar roll and coupon swap transactions as necessary to facilitate settlement of the Federal Reserve's agency mortgage-backed securities transactions. The System Open Market Account manager and the secretary will keep the Committee informed of ongoing developments regarding the System's balance sheet that could affect the attainment over time of the Committee's objectives of maximum employment and price stability."

The vote encompassed approval of the statement below to be released at 2:00 p.m.:

> "Information received since the Federal Open Market Committee met in September suggests that economic activity has been expanding at a moderate pace. Household spending and business fixed investment have been increasing at solid rates in recent months, and the housing sector has improved further; however, net exports have been soft. The pace of job gains slowed and the unemployment rate held steady. Nonetheless, labor market indicators, on balance, show that underutilization of labor resources has diminished since early this year. Inflation has continued to run below the Committee's longer-run objective, partly reflecting declines in energy prices and in prices of non-energy imports. Market-based measures of inflation compensation moved slightly lower; survey-based measures of longer-term inflation expectations have remained stable.
>
> Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee expects that, with appropriate policy accommodation, economic activity will expand at a moderate pace, with labor market indicators continuing to move toward levels the Committee judges consistent with its dual mandate. The Committee continues to see the risks to the outlook for economic activity and the labor market as nearly balanced but is monitoring global economic and financial developments. Inflation is anticipated to remain near its recent low level in the near term but the Committee expects inflation to rise gradually toward 2 percent over the medium term as the labor market improves further and the transitory effects of declines in energy and import prices

dissipate. The Committee continues to monitor inflation developments closely.

To support continued progress toward maximum employment and price stability, the Committee today reaffirmed its view that the current 0 to ¼ percent target range for the federal funds rate remains appropriate. In determining whether it will be appropriate to raise the target range at its next meeting, the Committee will assess progress—both realized and expected—toward its objectives of maximum employment and 2 percent inflation. This assessment will take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments. The Committee anticipates that it will be appropriate to raise the target range for the federal funds rate when it has seen some further improvement in the labor market and is reasonably confident that inflation will move back to its 2 percent objective over the medium term.

The Committee is maintaining its existing policy of reinvesting principal payments from its holdings of agency debt and agency mortgage-backed securities in agency mortgage-backed securities and of rolling over maturing Treasury securities at auction. This policy, by keeping the Committee's holdings of longer-term securities at sizable levels, should help maintain accommodative financial conditions.

When the Committee decides to begin to remove policy accommodation, it will take a balanced approach consistent with its longer-run goals of maximum employment and inflation of 2 percent. The Committee currently anticipates that, even after employment and inflation are near mandate-consistent levels, economic conditions may, for some time, warrant keeping the target federal funds rate below levels the Committee views as normal in the longer run."

Voting for this action: Janet L. Yellen, William C. Dudley, Lael Brainard, Charles L. Evans, Stanley Fischer, Dennis P. Lockhart, Jerome H. Powell, Daniel K. Tarullo, and John C. Williams.

Voting against this action: Jeffrey M. Lacker.

Mr. Lacker dissented because he continued to believe that maintaining exceptionally low real interest rates was not appropriate for an economy with persistently strong consumption growth and tightening labor markets. Data received since the September FOMC meeting suggested that the global economic and financial developments of late summer had little effect on the medium-term outlook for U.S. growth and inflation. He remained reasonably confident that inflation would return to the Federal Reserve's 2 percent goal once temporary disinflationary impulses had passed.

It was agreed that the next meeting of the Committee would be held on Tuesday–Wednesday, December 15–16, 2015. The meeting adjourned at 11:40 a.m. on October 28, 2015.

Notation Vote

By notation vote completed on October 7, 2015, the Committee unanimously approved the minutes of the Committee meeting held on September 16–17, 2015.

Brian F. Madigan
Secretary

Meeting Held on December 15–16, 2015

A joint meeting of the Federal Open Market Committee and the Board of Governors was held in the offices of the Board of Governors of the Federal Reserve System in Washington, D.C., on Tuesday, December 15, 2015, at 1:00 p.m. and continued on Wednesday, December 16, 2015, at 9:00 a.m.

Present

Janet L. Yellen
Chair

William C. Dudley
Vice Chairman

Lael Brainard

Charles L. Evans

Stanley Fischer

Jeffrey M. Lacker

Dennis P. Lockhart

Jerome H. Powell

Daniel K. Tarullo

John C. Williams

James Bullard, Esther L. George, Loretta J. Mester, Eric Rosengren, and Michael Strine
Alternate Members of the Federal Open Market Committee

Patrick Harker and Robert S. Kaplan
Presidents of the Federal Reserve Banks of Philadelphia and Dallas, respectively

James M. Lyon
First Vice President, Federal Reserve Bank of Minneapolis

Brian F. Madigan
Secretary

Matthew M. Luecke
Deputy Secretary

David W. Skidmore
Assistant Secretary

Michelle A. Smith
Assistant Secretary

Scott G. Alvarez
General Counsel

Thomas C. Baxter
Deputy General Counsel

Steven B. Kamin
Economist

Thomas Laubach
Economist

David W. Wilcox
Economist

David Altig, Eric M. Engen, Michael P. Leahy, William R. Nelson, and William Wascher
Associate Economists

Simon Potter
Manager, System Open Market Account

Lorie K. Logan
Deputy Manager, System Open Market Account

Robert deV. Frierson
Secretary of the Board, Office of the Secretary, Board of Governors

Michael S. Gibson
Director, Division of Banking Supervision and Regulation, Board of Governors

Nellie Liang
Director, Office of Financial Stability Policy and Research, Board of Governors

James A. Clouse and Stephen A. Meyer
Deputy Directors, Division of Monetary Affairs, Board of Governors

William B. English
Senior Special Adviser to the Board, Office of Board Members, Board of Governors

David Bowman, Andrew Figura, David Reifschneider, and Stacey Tevlin
Special Advisers to the Board, Office of Board Members, Board of Governors

Trevor A. Reeve
Special Adviser to the Chair, Office of Board Members, Board of Governors

Linda Robertson
Assistant to the Board, Office of Board Members, Board of Governors

Michael G. Palumbo
Senior Associate Director, Division of Research and Statistics, Board of Governors

Beth Anne Wilson
Senior Associate Director, Division of International Finance, Board of Governors

Ellen E. Meade and Joyce K. Zickler
Senior Advisers, Division of Monetary Affairs, Board of Governors

Wayne Passmore
Senior Adviser, Division of Research and Statistics, Board of Governors

Joseph W. Gruber
Deputy Associate Director, Division of International Finance, Board of Governors

Francisco Covas, Christopher J. Gust, and Jason Wu
Assistant Directors, Division of Monetary Affairs, Board of Governors

John M. Roberts and Steven A. Sharpe
Assistant Directors, Division of Research and Statistics, Board of Governors

Patrick E. McCabe
Adviser, Division of Research and Statistics, Board of Governors

Penelope A. Beattie
Assistant to the Secretary, Office of the Secretary, Board of Governors

David H. Small
Project Manager, Division of Monetary Affairs, Board of Governors

Katie Ross[1]
Manager, Office of the Secretary, Board of Governors

Valerie Hinojosa
Information Manager, Division of Monetary Affairs, Board of Governors

Mark L. Mullinix
First Vice President, Federal Reserve Bank of Richmond

James J. McAndrews
Executive Vice President, Federal Reserve Bank of New York

1 Attended Wednesday session only.

Troy Davig, Michael Dotsey, Evan F. Koenig, Spencer Krane, Samuel Schulhofer-Wohl, Ellis W. Tallman, Geoffrey Tootell, and Christopher J. Waller
Senior Vice Presidents, Federal Reserve Banks of Kansas City, Philadelphia, Dallas, Chicago, Minneapolis, Cleveland, Boston, and St. Louis, respectively

Douglas Tillett, Robert G. Valletta, and Alexander L. Wolman
Vice Presidents, Federal Reserve Banks of Chicago, San Francisco, and Richmond, respectively

William E. Riordan[2]
Markets Officer, Federal Reserve Bank of New York

Developments in Financial Markets and Open Market Operations

The manager of the System Open Market Account (SOMA) reported on developments in domestic and foreign financial markets, including expectations of market participants for monetary policy action by the Federal Open Market Committee (FOMC) at this meeting and in the future. The deputy manager followed with a briefing on money market developments and System open market operations conducted by the Open Market Desk during the period since the Committee met on October 27–28. It was noted that the System's reverse repurchase (RRP) agreement operations continued to provide a soft floor under short-term interest rates. The deputy manager also discussed plans to publish additional information on details of the Committee's current Treasury securities reinvestment policy. The manager then briefed the Committee on several other matters, including plans to begin publishing the effective federal funds rate and a broader overnight bank funding rate based on the Report of Selected Money Market Rates (FR 2420) in early March 2016; the possibility that the Federal Reserve, in cooperation with the Office of Financial Research, might publish a reference rate for overnight transactions collateralized by Treasury securities; and the staff's ongoing review of the readiness of various Desk operations and facilities.

2 Attended through the discussion of financial developments and open market operations.

By unanimous vote, the Committee ratified the Desk's domestic transactions over the intermeeting period. There were no intervention operations in foreign currencies for the System's account over the intermeeting period.

Staff Review of the Economic Situation

The information reviewed for the December 15–16 meeting suggested that real gross domestic product (GDP) was increasing at a moderate pace and that labor market conditions had improved further. Consumer price inflation continued to run below the FOMC's longer-run objective of 2 percent, restrained in part by declines in both energy prices and the prices of non-energy imported goods. Some survey-based measures of longer-run inflation expectations edged down, while market-based measures of inflation compensation were still low.

Total nonfarm payroll employment expanded at a faster monthly rate in October and November than in the third quarter. The unemployment rate ticked down to 5.0 percent in October and remained at that level in November; over the 12 months ending in November, the unemployment rate fell ¾ percentage point. Both the labor force participation rate and the employment-to-population ratio increased slightly, on net, over October and November. The share of workers employed part time for economic reasons was flat, on balance, in recent months after declining considerably over the previous year. The rates of private-sector job openings, hires, and quits were little changed in October from their average levels in the third quarter. Recent measures of the gains in labor compensation were mixed: Over the four quarters ending in the third quarter, compensation per hour in the business sector advanced at a strong 3½ percent rate, while the employment cost index rose at a more moderate 2 percent pace. Average hourly earnings for all employees increased 2¼ percent over the 12 months ending in November.

Manufacturing production increased in October, although output in the mining sector continued to decrease. Automakers' assembly schedules and broader indicators of manufacturing production, such as the readings on new orders from national and regional manufacturing surveys, generally pointed to a slow pace of gains in factory output in the coming months. Information on crude oil and natural gas extraction through early December indicated further declines in mining output.

Real personal consumption expenditures (PCE) appeared to be rising at a solid rate in the fourth quarter. The components of the nominal retail sales data used by the Bureau of Economic Analysis to construct its estimate of PCE increased in October and moved up at a faster pace in November, while the rate of sales of light motor vehicles remained high. Household spending was supported by strong growth in real disposable income in September and October, and households' net worth was bolstered by recent gains in home values. In addition, consumer sentiment in the University of Michigan Surveys of Consumers improved a little in November and early December.

Recent information on activity in the housing sector was mixed. Starts of new single-family homes were somewhat lower in October than in the third quarter, although building permits moved up. Meanwhile, starts of multifamily units declined. Sales of new homes rose in October, while existing home sales decreased.

Real private expenditures for business equipment and intellectual property products increased at a solid pace in the third quarter, but business spending growth looked to be slowing somewhat in the fourth quarter. Nominal shipments of nondefense capital goods excluding aircraft edged down in October, although new orders for these capital goods continued to move up. Recent readings from national and regional surveys of business conditions were consistent with more modest increases in business equipment spending than in the third quarter. Firms' nominal spending for nonresidential structures excluding drilling and mining rose in October, although available indicators of drilling activity, such as the number of oil and gas rigs in operation, continued to fall through early December.

Total real government purchases appeared to be about flat in the fourth quarter. Federal government spending for defense moved roughly sideways, on balance, over recent months. State and local government payrolls were little changed, on net, in October and November, while the level of nominal construction spending of these governments in October was essentially the same as its average in the third quarter.

The U.S. international trade deficit widened in October after narrowing in September. Exports declined, on balance, to the lowest level in three years; lower prices for commodities, along with reduced shipments of capital and consumer goods, weighed on

nominal exports. Imports decreased in September and October, partly reflecting further declines in the price of imported oil. The available trade data suggested that declines in real net exports would likely continue to be a drag on real GDP growth in the fourth quarter.

Total U.S. consumer prices, as measured by the PCE price index, rose only ¼ percent over the 12 months ending in October, held down by large declines in consumer energy prices. Core PCE inflation, which excludes changes in food and energy prices, was 1¼ percent over the same 12-month period, partly restrained by declines in the prices of non-energy imported goods. Over the 12 months ending in November, total consumer prices as measured by the consumer price index (CPI) rose ½ percent, while core CPI inflation was 2 percent. Survey measures of expected longer-run inflation were relatively stable, although they showed some hints of having edged slightly lower: In November and early December, the Michigan survey measure continued to run somewhat below its typical range of the past 15 years, though historical patterns suggest that these relatively low readings may have reflected softness in total inflation and energy prices. The measures from both the Survey of Professional Forecasters for the fourth quarter and the Survey of Primary Dealers in December moved down slightly.

Foreign real GDP growth improved in the third quarter after being weak in the first half, and recent indicators were consistent with a further moderate expansion in the fourth quarter. Economic activity in Canada rebounded in the third quarter, boosted by rising exports and a smaller drag from declines in oil-sector investment. The Japanese economy expanded in the third quarter following a small contraction in the previous quarter. In contrast, growth in the euro-area economy slowed in the third quarter. Recent indicators for economic activity in China were relatively favorable, and several other emerging Asian economies strengthened in the third quarter. Mexican economic growth also picked up in the third quarter, but the Brazilian economy continued to contract. Falling energy prices kept headline inflation very low in many foreign economies.

Staff Review of the Financial Situation

Federal Reserve communications and economic data releases over the intermeeting period appeared to have led investors to raise the odds they assigned to an increase in the target range for the federal funds rate at the December FOMC meeting. The October FOMC statement and the stronger-than-expected October employment report, in particular, boosted expectations of FOMC action at this meeting. Subsequent data releases and FOMC communications firmed those views, and in the weeks before the meeting, market participants came to attach high odds to the possibility of a December increase.

The expected path of the federal funds rate implied by market quotes on interest rate derivatives rose moderately over the intermeeting period. Nominal yields on 2- and 10-year Treasury securities rose about 40 basis points and 25 basis points, respectively. Measures of inflation compensation based on Treasury Inflation-Protected Securities remained low.

Over the first few weeks of the intermeeting period, the increase in the perceived likelihood of an increase in the target range for the federal funds rate at the December meeting was not accompanied by a rise in implied or realized volatility in domestic equity and fixed-income markets. However, later in the period, concerns among market participants about the implications of falling crude oil prices and the credit quality of high-yield bonds evidently increased. In reaction, broad measures of U.S. equity prices declined, with a steep selloff in energy-sector stocks, and the one-month-ahead option-implied volatility on the S&P 500 index, the VIX, climbed. In addition, strains in the high-yield bond market increased notably after a mutual fund that specialized in very low-rated and unrated bonds suspended investor redemptions and closed. Over the intermeeting period, high-yield bond spreads widened significantly, on net, particularly for bonds rated triple-C or below, with more pronounced increases for firms in the energy sector. In contrast, spreads on investment-grade corporate bonds were little changed on balance.

Nonfinancial businesses continued to tap financial markets at a brisk pace in the intermeeting period. Issuance of investment-grade corporate bonds and institutional leveraged loans remained solid, buoyed by demand to finance mergers and acquisitions. Growth of commercial and industrial loans on banks' books continued to be strong in October and November, driven mainly by the expansion of large loans at large banks. However, high-yield bond issuance slowed and refinancing-related leveraged loan issuance stayed weak during the intermeeting period.

Corporate earnings and credit quality continued to show some signs of weakening. Available reports and

analysts' estimates suggested that aggregate earnings per share in the third quarter declined slightly compared with year-earlier levels, in line with expectations. Earnings were particularly weak in the energy and materials sectors because of declines in prices of crude oil and metals. The stronger dollar appeared to weigh on earnings growth across many sectors.

Conditions in the municipal bond market were generally stable. Gross issuance of municipal bonds was solid in recent months. Yields on municipal bonds declined a little, leaving their ratios to long-term Treasury yields somewhat lower but still near the high end of their historical range.

Financing conditions for commercial real estate tightened somewhat. Spreads on commercial mortgage-backed securities (CMBS) widened further, suggesting that investors in CMBS continued to reassess the risks in this sector following several years of robust demand for these securities. Nonetheless, underwriting standards continued to be relatively loose, and financing conditions appeared to remain quite accommodative overall. CMBS issuance stayed strong.

Residential mortgage market conditions were little changed, on net, over the intermeeting period. Credit remained tight for borrowers with low credit scores, hard-to-document income, or higher debt-to-income ratios. Interest rates on 30-year fixed-rate mortgages increased 30 basis points, in line with increases in yields on mortgage-backed securities and comparable-maturity Treasury securities. Nevertheless, mortgage rates continued to be quite low by historical standards.

Consumer credit markets remained accommodative for most borrowers. Consumer loan balances continued to rise at a robust pace through October because of sustained expansion in credit card balances and sizable increases in auto and student loans; growth of student loans continued to slow gradually. Student and auto loans remained broadly available, even to borrowers with subprime credit histories, but the availability of credit card loans for subprime borrowers was still tight.

Movements in foreign financial markets over the period reflected increased expectations that the FOMC would begin raising the target range for the federal funds rate in December, investors' views about monetary policies abroad, and substantial declines in commodity prices. The broad nominal index of the dollar rose appreciably. Equity indexes declined in many advanced and emerging market economies amid concerns about corporate earnings and falling oil and metals prices. Short-term sovereign yields changed little in the euro area and Japan but rose moderately in the United Kingdom. Longer-term sovereign yields moved higher in Europe along with U.S. Treasury yields.

Staff Economic Outlook

In the economic forecast prepared by the staff for the December FOMC meeting, real GDP growth in the second half of this year was little changed, on net, relative to the projection for the October meeting. The staff's medium-term projection for real GDP growth was revised up slightly, on balance, from the previous forecast, primarily because the recently passed Bipartisan Budget Act of 2015 was anticipated to lead to somewhat higher federal government purchases. The staff continued to project that real GDP would expand at a somewhat faster pace than potential output in 2016 through 2018, supported primarily by increases in consumer spending. The unemployment rate was expected to decline gradually and to run somewhat below the staff's estimate of its longer-run natural rate over this period.

The staff's forecast for inflation was revised down slightly in the near term in response to recent data for consumer prices and the further decline in the price of crude oil; over the medium term, the projection was little revised. Energy prices and prices of non-energy imported goods were expected to begin steadily rising next year. The staff projected that inflation would increase gradually over the next several years and reach the Committee's longer-run objective of 2 percent by the end of 2018.

The staff viewed the uncertainty around its December projections for real GDP growth, the unemployment rate, and inflation as similar to the average of the past 20 years. The risks to the forecast for real GDP were seen as tilted somewhat to the downside, reflecting the staff's assessment that neither monetary nor fiscal policy was currently well positioned to help the economy withstand substantial adverse shocks. Consistent with this downside risk to aggregate demand, the staff viewed the risks to its outlook for the unemployment rate as skewed somewhat to the upside. The risks to the projection for inflation were seen as weighted to the downside, reflecting the possibility that longer-term inflation expectations may have edged down and that the foreign exchange

value of the dollar could rise substantially further, which would put downward pressure on inflation.

Participants' Views on Current Conditions and the Economic Outlook

In conjunction with this FOMC meeting, members of the Board of Governors and Federal Reserve Bank presidents submitted their projections of the most likely outcomes for real GDP growth, the unemployment rate, inflation, and the federal funds rate for each year from 2015 through 2018 and over the longer run.[3] Each participant's projections were conditioned on his or her judgment of appropriate monetary policy. The longer-run projections represent each participant's assessment of the rate to which each variable would be expected to converge, over time, under appropriate monetary policy and in the absence of further shocks to the economy. These projections and policy assessments are described in the Summary of Economic Projections, which is an addendum to these minutes.

In their discussion of the economic situation and the outlook, meeting participants viewed the information received over the intermeeting period as indicating that economic activity was expanding moderately and confirming that underutilization of labor resources had diminished appreciably since early in the year. Participants' outlook indicated that, with gradual adjustments in the stance of monetary policy, real GDP would continue to increase at a moderate rate over the medium term and that labor market indicators would continue to strengthen. They anticipated that the relative strength in domestic demand would be only partially offset by some further weakness in net exports. Participants generally saw the downside risks to U.S. economic activity from global economic and financial developments, although still material, as having diminished since late summer. In addition, new and revised information on employment in recent months had reduced earlier concerns about a possible slowing of progress in the labor market. Accordingly, taking into account domestic and international developments, most participants judged the risks to the outlook for both economic activity and the labor market to be balanced.

[3] The president of the Federal Reserve Bank of Minneapolis did not participate in this FOMC meeting, and the incoming president is scheduled to assume office on January 1, 2016. James M. Lyon, First Vice President of the Federal Reserve Bank of Minneapolis, submitted economic projections.

Incoming data indicated that inflation continued to run below the Committee's 2 percent longer-run objective, partly reflecting declines in energy prices and prices of non-energy imports. The price of crude oil fell further over the intermeeting period, and many participants lowered their near-term forecasts for inflation somewhat while leaving their medium-term forecasts little changed. Nearly all continued to anticipate that inflation would rise to or very close to 2 percent over the medium term as the transitory effects of declines in energy and import prices dissipated and the labor market strengthened further. Over the intermeeting period, market-based measures of inflation compensation stayed low; some survey-based measures of longer-term inflation expectations edged down. Although many participants remained concerned about downside risks attending the outlook for inflation, a majority of participants saw the risks to the outlook for inflation as balanced.

Consumer spending continued to rise at a solid rate in recent months; retail sales picked up over the October–November period, and motor vehicle sales remained strong. The available information from District business contacts was generally consistent with the recent trend in data on spending, although a couple of reports noted that households were spending cautiously and that some price discounting was likely. Over the coming year, participants expected consumer outlays to be supported importantly by ongoing gains in jobs, rising income, and improved household balance sheets. In addition, several participants pointed out that low energy costs should help support consumer expenditures.

The housing market was recovering gradually, with single-family homebuilding continuing to trend up and multifamily construction remaining at a high level. The reports on the pace of construction and real estate activity across Districts varied. Nonetheless, several participants noted factors pointing to continued improvement in the housing sector, including ongoing house price appreciation, low levels of home inventories, the substantial gap between the rate of household formation and the relatively slow pace of construction, and the possibility that homebuyers may be entering the market in anticipation of higher mortgage rates. Outside of the residential sector, commercial building was highlighted as an area of relative strength in a few Districts.

As a result of the recently passed Bipartisan Budget Act, federal spending was expected to provide a mod-

est boost to economic activity over the next few years. Contacts in one District with a relatively large amount of federal government activity reported that their businesses would also benefit from the reduced uncertainty about the federal fiscal outlook.

Business activity was solid outside of sectors adversely affected by low energy prices and weak exports. A number of participants commented on the strength in the services sector in their Districts, citing, in particular, activity in high-tech, transportation, leisure and hospitality, and health-related businesses. Some reported that the stronger manufacturing industries in their Districts included aerospace, power generation equipment, and medical equipment, and that the domestic auto industry was still a bright spot. However, manufacturing activity overall continued to be restrained by weakness in industries with significant international exposures, such as steel, agricultural and drilling equipment, and chemicals. In addition, domestic energy producers and their service suppliers remained under significant pressure from the excess supply of crude oil and declining prices. The cutbacks in drilling led to further reductions in capital spending and to layoffs; credit conditions for some firms continued to deteriorate. In the agricultural sector, high levels of domestic crop production and weak global demand had depressed commodity prices, and farm income was expected to decline.

Participants generally agreed that the drag on U.S. economic activity from the appreciation of the dollar since the summer of 2014 and the slowdown in foreign economic growth, particularly in emerging market economies, was likely to continue to depress U.S. net exports for some time. Many expressed the view that the risks to the global economy that emerged late this summer had receded and anticipated moderate improvement in economic growth abroad in the coming year as currency and commodity markets stabilized. However, participants cited a number of lingering concerns, including the possibility that further dollar appreciation and persistent weakness in commodity prices could increase the stress on emerging market economies and that China could find it difficult to navigate the cyclical and structural changes under way in its economy. Several upside risks to the U.S. outlook also were noted, including the possibility that declining energy prices could spur consumer spending more than currently anticipated.

Consumer prices, as measured by the PCE index, were little changed, on net, in September and October, held down importantly by declines in energy prices; core PCE prices posted only small increases. Over the intermeeting period, crude oil prices dropped notably, other commodity prices declined, and the dollar appreciated further. The 12-month change in the core PCE price index was 1.3 percent in October and had been running at about that rate since the beginning of the year, despite the declines in prices of non-energy imported goods over the period. Several participants noted that alternative indicators of underlying inflation, such as the core CPI, the trimmed mean PCE, and the sticky price CPI, showed somewhat higher year-over-year increases, close to or above 2 percent. Inflation by these measures, however, had typically run higher than PCE price inflation, and a range of views was expressed about their implications for the outlook for PCE inflation.

Almost all participants continued to expect that once energy prices and prices of non-energy commodities stabilized, the effects of the declines in those prices on headline and core PCE inflation would fade. Moreover, with margins of resource underutilization having already diminished appreciably and longer-run inflation expectations reasonably stable, most anticipated that tightening resource utilization over the next year would contribute to higher inflation. Nearly all participants were now reasonably confident that inflation would move back to 2 percent over the medium term. However, because of the recent further decline in crude oil prices, many participants judged that falling energy prices would depress headline inflation somewhat longer than previously anticipated. Also, several observed that the additional appreciation of the dollar would continue to hold down the prices of imported goods. Although almost all still expected that the downward pressure on inflation from energy and commodity prices would be transitory, many viewed the persistent weakness in those prices as adding uncertainty or posing important downside risks to the inflation outlook.

Participants also discussed readings from various market- and survey-based measures of longer-run inflation expectations. Recently, some of the available surveys had reported softer longer-run inflation expectations, while others suggested still-stable expectations. In addition, the market-based measures of inflation compensation that had declined earlier were still at low levels. A number of participants noted, based on historical patterns, that some of the survey-based measures could be overly sensitive to energy price fluctuations rather than indicating shifts in per-

ceptions of underlying inflation trends and that the declines in the market-based measures could reflect changes in risk and liquidity premiums. Many concluded that longer-run inflation expectations remained reasonably stable. However, some expressed concerns that inflation expectations may have already moved lower, or that they might do so if inflation persisted for much longer at a rate below the Committee's objective.

Labor market conditions improved further in recent months: Monthly gains in nonfarm payroll employment averaged more than 200,000 over the period from September to November, and the unemployment rate edged lower. The cumulative reduction in the underutilization of labor resources since early in the year was appreciable. The unemployment rate, at 5.0 percent in November, was 0.7 percentage point lower than in January and close to most participants' estimates of its longer-run normal level. Broader measures of underemployment that include marginally attached workers and those employed part time for economic reasons also fell substantially since January. However, the labor force participation rate moved down since January as well, with some FOMC participants attributing part of the decline to demographic trends or a structural rise in detachment among prime-age men. A number of participants observed that wage increases had begun to pick up, or that they appeared likely to do so over the coming year. Although many participants judged that the improvement in labor market conditions had been substantial, some others indicated that further progress in reducing labor market slack would be required before conditions would be consistent with the Committee's objective of maximum employment. In particular, some participants stressed the importance of the pace of economic growth staying above that of potential output in order to reduce remaining labor underutilization across broader dimensions—for example, by lowering the still-elevated numbers of workers employed part time for economic reasons and by encouraging additional workers who are currently outside the labor force but want a job to reenter the labor force.

Most participants expected that the unemployment rate would edge below their estimates of its longer-run level in the coming year and then stabilize for a time, with the further strengthening of the labor market helping move inflation higher. Because labor compensation was still increasing at a subdued rate and inflation remained well below 2 percent, some participants judged that a moderate further decline in unemployment would be unlikely to lead to a buildup of unduly strong inflation pressures. A few commented that a sustained period of labor market activity above levels consistent with maximum employment should speed the rise in inflation to the Committee's objective.

Financial conditions tightened modestly over the intermeeting period. Quotes in financial markets and survey results suggested that investors were quite confident that the Committee would raise the federal funds target range 25 basis points at the current meeting. Concerns among investors about the high-yield bond market increased notably in the days before the meeting after an open-ended mutual fund specializing in junk bonds suspended redemptions and closed. In their discussion, several participants commented that markets for leveraged finance had been correcting since midyear—particularly for the most risky assets, including those associated with energy firms—and noted that the widening of credit spreads in corporate bond markets appeared to be largely due to the repricing of riskier assets.

During their consideration of economic conditions and monetary policy, almost all participants agreed that the improvements that had occurred in the labor market and their confidence in a return of inflation to 2 percent over the medium term now satisfied the Committee's criteria for beginning the policy normalization process. Participants also discussed the implications of economic conditions going forward for the likely future path of the target range for the federal funds rate. Even after the initial increase in the target range, the stance of policy would remain accommodative. Participants saw several reasons why a gradual removal of policy accommodation would likely be appropriate. Normalizing policy gradually would keep the stance of monetary policy sufficiently accommodative to support further improvement in labor market conditions and to exert upward pressure on inflation. Also, a number of participants pointed out that because inflation was still running well below the Committee's objective and the outlook for inflation was subject to considerable uncertainty, it would probably take some time for the data to confirm that inflation was on a trajectory to return to 2 percent over the medium term. Gradual adjustments in the federal funds rate would also allow policymakers to assess how the economy was responding to increases in interest rates. In addition, by several estimates, the neutral short-term real interest rate was currently close to zero and was expected to rise only slowly as headwinds restraining the

expansion receded. Moreover, the ability of monetary policy to offset the economic effects of an unanticipated economic shock remained asymmetric, and a cautious approach to normalizing policy could help minimize the risk of having to respond to a negative economic shock while the policy rate remained near its effective lower bound.

While viewing a gradual approach to policy normalization as likely to be appropriate given their economic outlook, participants emphasized the need to adjust the policy path as economic conditions evolved and to avoid appearing to commit to any specific pace of adjustments. They stressed the importance of communicating clearly that the future policy path could become shallower if the economic expansion weakened and inflation rose more slowly than currently anticipated, and that it could become steeper if real activity and inflation surprised to the upside. A few participants also indicated that significant risks to financial stability, should they emerge, could alter their view of the appropriate policy path.

Committee Policy Action

In their discussion of monetary policy for the period ahead, members judged that information received since the FOMC met in October indicated that economic activity had been expanding at a moderate pace. Although net exports remained soft, consumer and business spending remained solid, and the housing sector improved further. Overall, taking into account domestic and foreign developments, members saw the risks to the outlook for both economic activity and the labor market as balanced, and they expected that, with gradual adjustments in the stance of monetary policy, economic activity would most likely continue to expand at a moderate pace.

Members agreed that a range of recent labor market indicators, including ongoing job gains and declining unemployment, showed further improvement and confirmed that underutilization of labor resources had diminished appreciably since early this year. Members anticipated that economic activity was likely to continue to expand at a pace sufficient to lead to a further increase in the utilization of labor resources, and many members judged that additional progress would be required to reach the Committee's maximum-employment objective.

Inflation continued to run below the Committee's longer-run objective, held down in part by the effects of declines in energy and non-energy import prices. Market-based measures of inflation compensation remained low; some survey-based measures of longer-term inflation expectations had edged down. Members anticipated that the further decline in crude oil prices over the intermeeting period was likely to exert some additional transitory downward pressure on inflation in the near term.

Regarding the medium-term outlook, inflation was projected to increase gradually as energy prices and prices of non-energy imports stabilized and the labor market strengthened. Overall, taking into account economic developments and the outlook for economic activity and the labor market, the Committee was now reasonably confident in its expectation that inflation would rise, over the medium term, to its 2 percent objective. However, for some members, the risks attending their inflation forecasts remained considerable. Among those risks was the possibility that additional downward shocks to prices of oil and other commodities or a sustained rise in the exchange value of the dollar could delay or diminish the expected upturn in inflation. A couple also worried that a further strengthening of the labor market might not prove sufficient to offset the downward pressures from global disinflationary forces. And several expressed unease with indications that inflation expectations may have moved down slightly. In view of these risks and the shortfall of inflation from 2 percent, members expressed their intention to carefully monitor actual and expected progress toward the Committee's inflation goal.

After assessing the outlook for economic activity, the labor market, and inflation and weighing the uncertainties associated with the outlook, members agreed to raise the target range for the federal funds rate to ¼ to ½ percent at this meeting. A number of members commented that it was appropriate to begin policy normalization in response to the substantial progress in the labor market toward achieving the Committee's objective of maximum employment and their reasonable confidence that inflation would move to 2 percent over the medium term. Members agreed that the postmeeting statement should report that the Committee's decision reflected both the economic outlook and the time it takes for policy actions to affect future economic outcomes. If the Committee waited to begin removing accommodation until it was closer to achieving its dual-mandate objectives, it might need to tighten policy abruptly, which could risk disrupting economic activity. Members observed that after this initial increase in the federal funds rate, the stance of monetary policy would remain accom-

modative. However, some members said that their decision to raise the target range was a close call, particularly given the uncertainty about inflation dynamics, and emphasized the need to monitor the progress of inflation closely.

Members also discussed their expectations for the size and timing of adjustments in the target range for the federal funds rate going forward. Based on their current forecasts for economic activity, the labor market, and inflation, as well as their expectation that the neutral short-term real interest rate will rise slowly over the next few years, members expected economic conditions would evolve in a manner that would warrant only gradual increases in the federal funds rate. However, they also recognized that the appropriate path for the federal funds rate would depend on the economic outlook as informed by incoming data. Members stressed the potential need to accelerate or slow the pace of normalization as the economic outlook evolved. In the current situation, because of their significant concern about still-low readings on actual inflation and the uncertainty and risks present in the inflation outlook, they agreed to indicate that the Committee would carefully monitor actual and expected progress toward its inflation goal. In determining the size and timing of further adjustments to monetary policy, some members emphasized the importance of confirming that inflation would rise as projected and of maintaining the credibility of the Committee's inflation objective. Based on their current economic outlook, they continued to anticipate that the federal funds rate was likely to remain, for some time, below levels that the Committee expected to prevail in the longer run.

The Committee also maintained its policy of reinvesting principal payments from agency debt and agency mortgage-backed securities in agency mortgage-backed securities and of rolling over maturing Treasury securities at auction. In view of members' outlook for moderate growth in economic activity, inflation moving toward its target only gradually, and the asymmetric risks posed by the continued proximity of short-term interest rates to their effective lower bound, the Committee anticipated retaining this policy until normalization of the level of the federal funds rate was well under way. This policy, by keeping the Committee's holdings of longer-term securities at sizable levels, should help maintain accommodative financial conditions.

At the conclusion of the discussion, the Committee voted to authorize and direct the Federal Reserve Bank of New York, until it was instructed otherwise, to execute transactions in the SOMA in accordance with the following domestic policy directive, to be released at 2:00 p.m.:

> "Effective December 17, 2015, the Federal Open Market Committee directs the Desk to undertake open market operations as necessary to maintain the federal funds rate in a target range of ¼ to ½ percent, including: (1) overnight reverse repurchase operations (and reverse repurchase operations with maturities of more than one day when necessary to accommodate weekend, holiday, or similar trading conventions) at an offering rate of 0.25 percent, in amounts limited only by the value of Treasury securities held outright in the System Open Market Account that are available for such operations and by a per-counterparty limit of $30 billion per day; and (2) term reverse repurchase operations to the extent approved in the resolution on term RRP operations approved by the Committee at its March 17–18, 2015, meeting.
>
> The Committee directs the Desk to continue rolling over maturing Treasury securities at auction and to continue reinvesting principal payments on all agency debt and agency mortgage-backed securities in agency mortgage-backed securities. The Committee also directs the Desk to engage in dollar roll and coupon swap transactions as necessary to facilitate settlement of the Federal Reserve's agency mortgage-backed securities transactions."

The vote also encompassed approval of the statement below to be released at 2:00 p.m.:

> "Information received since the Federal Open Market Committee met in October suggests that economic activity has been expanding at a moderate pace. Household spending and business fixed investment have been increasing at solid rates in recent months, and the housing sector has improved further; however, net exports have been soft. A range of recent labor market indicators, including ongoing job gains and declining unemployment, shows further improvement and confirms that underutilization of labor resources has diminished appreciably since early this year. Inflation has continued to run below the Committee's 2 percent longer-run objective, partly reflecting declines in energy prices and in prices of non-energy imports. Market-based

measures of inflation compensation remain low; some survey-based measures of longer-term inflation expectations have edged down.

Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee currently expects that, with gradual adjustments in the stance of monetary policy, economic activity will continue to expand at a moderate pace and labor market indicators will continue to strengthen. Overall, taking into account domestic and international developments, the Committee sees the risks to the outlook for both economic activity and the labor market as balanced. Inflation is expected to rise to 2 percent over the medium term as the transitory effects of declines in energy and import prices dissipate and the labor market strengthens further. The Committee continues to monitor inflation developments closely.

The Committee judges that there has been considerable improvement in labor market conditions this year, and it is reasonably confident that inflation will rise, over the medium term, to its 2 percent objective. Given the economic outlook, and recognizing the time it takes for policy actions to affect future economic outcomes, the Committee decided to raise the target range for the federal funds rate to ¼ to ½ percent. The stance of monetary policy remains accommodative after this increase, thereby supporting further improvement in labor market conditions and a return to 2 percent inflation.

In determining the timing and size of future adjustments to the target range for the federal funds rate, the Committee will assess realized and expected economic conditions relative to its objectives of maximum employment and 2 percent inflation. This assessment will take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments. In light of the current shortfall of inflation from 2 percent, the Committee will carefully monitor actual and expected progress toward its inflation goal. The Committee expects that economic conditions will evolve in a manner that will warrant only gradual increases in the federal funds rate; the federal funds rate is likely to remain, for some time, below levels that are expected to prevail in the longer run. However, the actual path of the federal funds rate will depend on the economic outlook as informed by incoming data.

The Committee is maintaining its existing policy of reinvesting principal payments from its holdings of agency debt and agency mortgage-backed securities in agency mortgage-backed securities and of rolling over maturing Treasury securities at auction, and it anticipates doing so until normalization of the level of the federal funds rate is well under way. This policy, by keeping the Committee's holdings of longer-term securities at sizable levels, should help maintain accommodative financial conditions."

Voting for this action: Janet L. Yellen, William C. Dudley, Lael Brainard, Charles L. Evans, Stanley Fischer, Jeffrey M. Lacker, Dennis P. Lockhart, Jerome H. Powell, Daniel K. Tarullo, and John C. Williams.

Voting against this action: None.

To support the Committee's decision to raise the target range for the federal funds rate, the Board of Governors voted unanimously to raise the interest rates on required and excess reserve balances by ¼ percentage point, to ½ percent, effective December 17, 2015. The Board of Governors also voted unanimously to approve a ¼ percentage point increase in the primary credit rate (discount rate) to 1 percent, effective December 17, 2015.[4]

After these policy decisions, the deputy manager of the System Open Market Account briefed the Committee on plans for term RRPs over year-end.

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[4] In taking this action, the Board approved requests submitted by the boards of directors of the Federal Reserve Banks of Boston, Philadelphia, Cleveland, Richmond, Atlanta, Chicago, St. Louis, Kansas City, Dallas, and San Francisco. This vote also encompassed approval by the Board of Governors of the establishment of a 1 percent primary credit rate by the remaining Federal Reserve Banks, effective on the later of December 17, 2015, and the date such Reserve Banks informed the Secretary of the Board of such a request. (Secretary's note: Subsequently, the Federal Reserve Banks of New York and Minneapolis were informed by the Secretary of the Board of the Board's approval of their establishment of a primary credit rate of 1 percent, effective December 17, 2015.) This vote of the Board of Governors also encompassed approval of the renewal by all 12 Federal Reserve Banks of the existing formulas for calculating the rates applicable to discounts and advances under the secondary and seasonal credit programs.

It was agreed that the next meeting of the Committee would be held on Tuesday–Wednesday, January 26–27, 2016. The meeting adjourned at 10:30 a.m. on December 16, 2015.

Notation Vote

By notation vote completed on November 17, 2015, the Committee unanimously approved the minutes of the Committee meeting held on October 27–28, 2015.

Brian F. Madigan
Secretary

Addendum: Summary of Economic Projections

In conjunction with the Federal Open Market Committee (FOMC) meeting held on December 15–16, 2015, meeting participants submitted their projections of the most likely outcomes for real output growth, the unemployment rate, inflation, and the federal funds rate for each year from 2015 to 2018 and over the longer run.[5] Each participant's projection was based on information available at the time of the meeting, together with his or her assessment of appropriate monetary policy and assumptions about the factors likely to affect economic outcomes. The longer-run projections represent each participant's assessment of the value to which each variable would be expected to converge, over time, under appropriate monetary policy and in the absence of further shocks to the economy. "Appropriate monetary policy" is defined as the future path of policy that each participant deems most likely to foster outcomes for economic activity and inflation that best satisfy his or her individual interpretation of the Federal Reserve's objectives of maximum employment and stable prices.

FOMC participants generally expected that, under appropriate monetary policy, real gross domestic product (GDP) growth in 2016 and 2017 would be at or somewhat above their individual estimates of the longer-run growth rate and would converge toward its longer-run rate in 2018 (table 1 and figure 1). All participants projected that the unemployment rate would decline further in 2016. Most participants

[5] The president of the Federal Reserve Bank of Minneapolis did not participate in this FOMC meeting, and the incoming president is scheduled to assume office on January 1, 2016. James M. Lyon, First Vice President of the Federal Reserve Bank of Minneapolis, submitted economic projections.

Table 1. Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents, under their individual assessments of projected appropriate monetary policy, December 2015

Percent

Variable	Median[1]					Central tendency[2]					Range[3]				
	2015	2016	2017	2018	Longer run	2015	2016	2017	2018	Longer run	2015	2016	2017	2018	Longer run
Change in real GDP	2.1	2.4	2.2	2.0	2.0	2.1	2.3–2.5	2.0–2.3	1.8–2.2	1.8–2.2	2.0–2.2	2.0–2.7	1.8–2.5	1.7–2.4	1.8–2.3
September projection	2.1	2.3	2.2	2.0	2.0	2.0–2.3	2.2–2.6	2.0–2.4	1.8–2.2	1.8–2.2	1.9–2.5	2.1–2.8	1.9–2.6	1.6–2.4	1.8–2.7
Unemployment rate	5.0	4.7	4.7	4.7	4.9	5.0	4.6–4.8	4.6–4.8	4.6–5.0	4.8–5.0	5.0	4.3–4.9	4.5–5.0	4.5–5.3	4.7–5.8
September projection	5.0	4.8	4.8	4.8	4.9	5.0–5.1	4.7–4.9	4.7–4.9	4.7–5.0	4.9–5.2	4.9–5.2	4.5–5.0	4.5–5.0	4.6–5.3	4.7–5.8
PCE inflation	0.4	1.6	1.9	2.0	2.0	0.4	1.2–1.7	1.8–2.0	1.9–2.0	2.0	0.3–0.5	1.2–2.1	1.7–2.0	1.7–2.1	2.0
September projection	0.4	1.7	1.9	2.0	2.0	0.3–0.5	1.5–1.8	1.8–2.0	2.0	2.0	0.3–1.0	1.5–2.4	1.7–2.2	1.8–2.1	2.0
Core PCE inflation[4]	1.3	1.6	1.9	2.0		1.3	1.5–1.7	1.7–2.0	1.9–2.0		1.2–1.4	1.4–2.1	1.6–2.0	1.7–2.1	
September projection	1.4	1.7	1.9	2.0		1.3–1.4	1.5–1.8	1.8–2.0	1.9–2.0		1.2–1.7	1.5–2.4	1.7–2.2	1.8–2.1	
Memo: Projected appropriate policy path															
Federal funds rate	0.4	1.4	2.4	3.3	3.5	0.4	0.9–1.4	1.9–3.0	2.9–3.5	3.3–3.5	0.1–0.4	0.9–2.1	1.9–3.4	2.1–3.9	3.0–4.0
September projection	0.4	1.4	2.6	3.4	3.5	0.1–0.6	1.1–2.1	2.1–3.4	3.0–3.6	3.3–3.8	-0.1–0.9	-0.1–2.9	1.0–3.9	2.9–3.9	3.0–4.0

Note: Projections of change in real gross domestic product (GDP) and projections for both measures of inflation are percent changes from the fourth quarter of the previous year to the fourth quarter of the year indicated. PCE inflation and core PCE inflation are the percentage rates of change in, respectively, the price index for personal consumption expenditures (PCE) and the price index for PCE excluding food and energy. Projections for the unemployment rate are for the average civilian unemployment rate in the fourth quarter of the year indicated. Each participant's projections are based on his or her assessment of appropriate monetary policy. Longer-run projections represent each participant's assessment of the rate to which each variable would be expected to converge under appropriate monetary policy and in the absence of further shocks to the economy. The projections for the federal funds rate are the value of the midpoint of the projected appropriate target range for the federal funds rate or the projected appropriate target level for the federal funds rate at the end of the specified calendar year or over the longer run. The September projections were made in conjunction with the meeting of the Federal Open Market Committee on September 16–17, 2015.

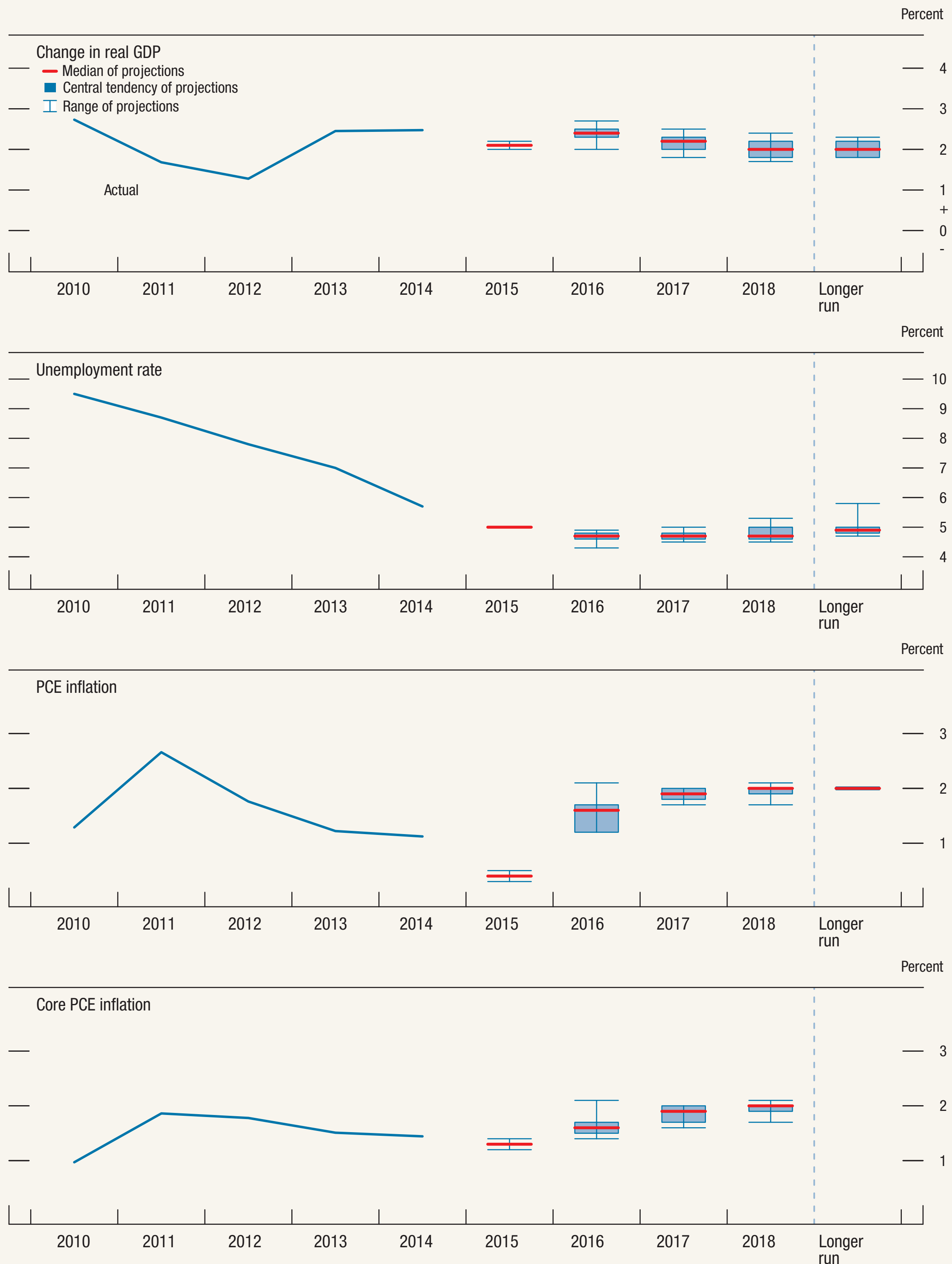
1 For each period, the median is the middle projection when the projections are arranged from lowest to highest. When the number of projections is even, the median is the average of the two middle projections.

2 The central tendency excludes the three highest and three lowest projections for each variable in each year.

3 The range for a variable in a given year includes all participants' projections, from lowest to highest, for that variable in that year.

4 Longer-run projections for core PCE inflation are not collected.

Figure 1. Medians, central tendencies, and ranges of economic projections, 2015–18 and over the longer run



Note: Definitions of variables are in the general note to table 1. The data for the actual values of the variables are annual.

expected that in 2018 the unemployment rate would remain somewhat below their individual judgments of its longer-run normal rate. Participants projected that inflation, as measured by the four-quarter change in the price index for personal consumption expenditures (PCE), would pick up in 2016 and 2017 from the very low rate seen in 2015. Almost all participants projected inflation in 2018 to be at or very near the Committee's 2 percent objective.

As shown in figure 2, all but two participants thought that it would be appropriate to raise the target range for the federal funds rate before the end of 2015. Most participants expected that it would be appropriate to raise the target range for the federal funds rate gradually over the projection period as headwinds to economic growth dissipate slowly over time and as inflation rises toward the Committee's goal of 2 percent. Consistent with this outlook, most participants projected that the appropriate level of the federal funds rate would be below its longer-run level through 2018.

Almost all participants viewed the levels of uncertainty associated with their outlooks for economic growth and the unemployment rate as broadly similar to the norms of the previous 20 years. Nearly all also viewed the levels of uncertainty associated with their inflation forecasts as broadly similar to historical norms. Most participants saw the risks to their outlooks for real GDP growth and the unemployment rate as broadly balanced. A majority viewed the risks attending their projections for both PCE and core PCE inflation as broadly balanced, but many saw these risks as weighted to the downside. Among those who saw the risks to their inflation outlook as tilted to the downside, several highlighted the continued strength of the dollar and some recent indications that inflation expectations had declined as contributing to those risks.

The Outlook for Economic Activity

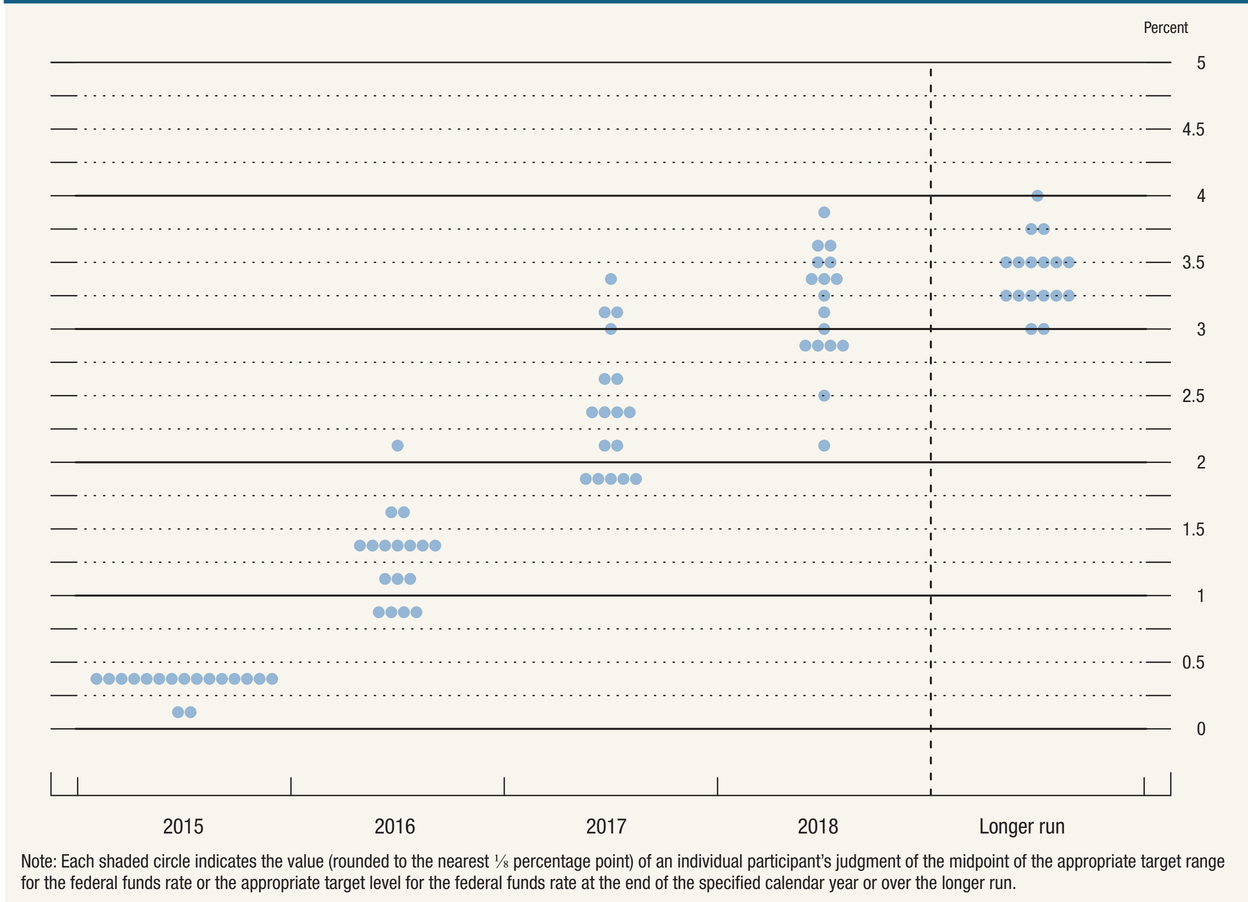
Participants generally projected that, conditional on their individual assumptions about appropriate monetary policy, real GDP would increase in 2016 and 2017 at a pace somewhat above their estimates of its longer-run rate. Real GDP growth would then slow in 2018 to a rate at or near their individual estimates of the longer-run normal rate. Participants pointed to a number of factors that they expect will contribute to moderate output growth over the next few years, including labor market conditions that are supportive of economic expansion, household and business balance sheets that had improved significantly since the financial crisis, and a stance of monetary policy that was expected to remain accommodative.

Compared with their contributions to the Summary of Economic Projections (SEP) in September, participants' projections of real GDP growth from 2016 to 2018 were generally little changed. The median value of participants' projections for real GDP growth in 2016 was revised up slightly to 2.4 percent; some participants cited the Bipartisan Budget Act of 2015, which was passed in late October, as adding support to economic growth in the near term. Very few participants changed their forecasts for real GDP growth in the longer run, resulting in an unchanged median.

All participants projected that the unemployment rate would be at or below their individual judgments of its longer-run normal level from 2016 through 2018. Compared with the September SEP, most participants' projected paths for the unemployment rate were revised down a little over those three years, with the median of the projections in the fourth quarter of each year at 4.7 percent. Many also revised down slightly their estimates of the longer-run normal rate of unemployment, although the median forecast of 4.9 percent was unchanged since September. Participants generally cited stronger-than-expected labor market data in recent months as a factor explaining the downward revisions to their unemployment rate forecasts.

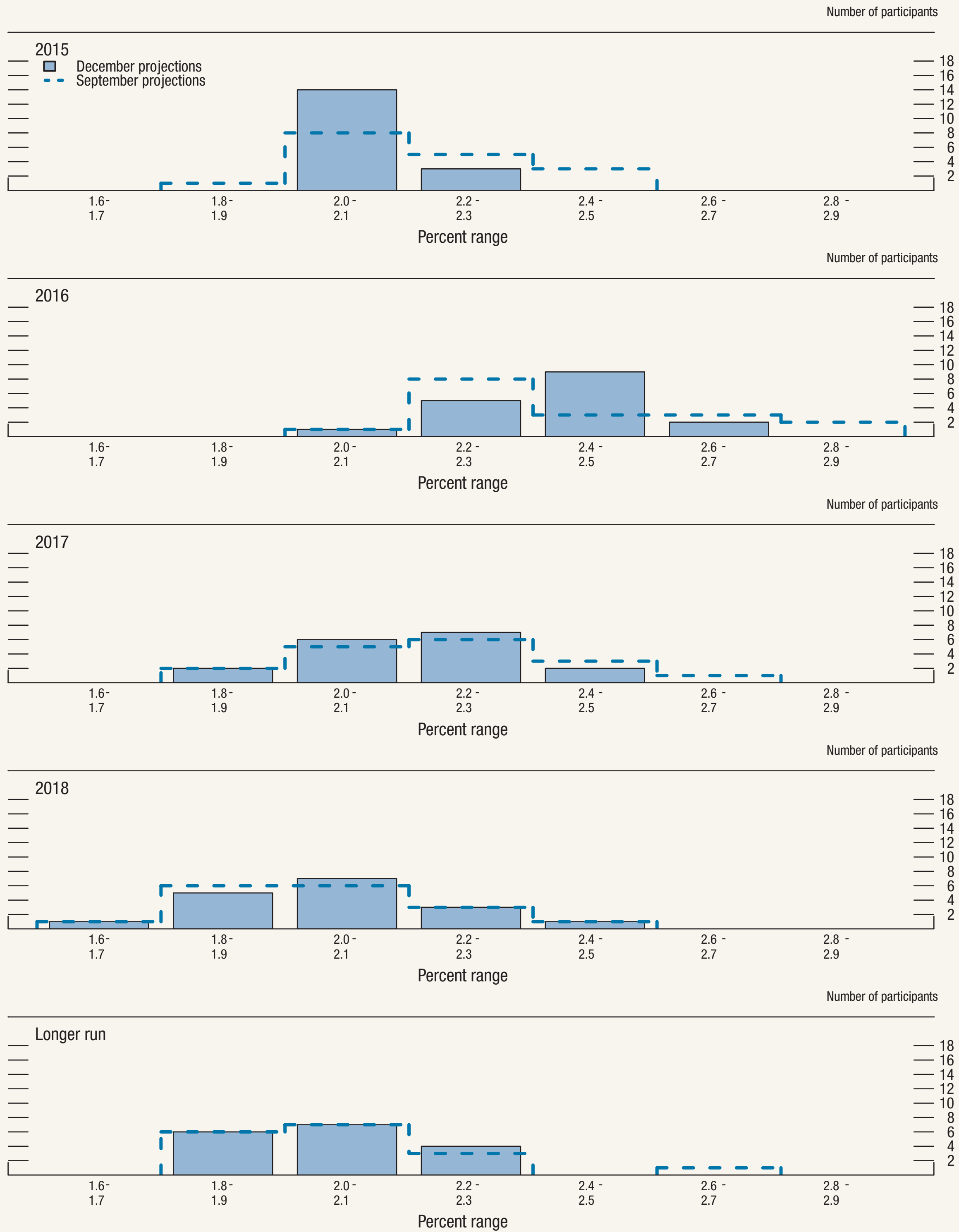
Figures 3.A and 3.B show the distribution of participants' views regarding the likely outcomes for real GDP growth and the unemployment rate through 2018 and in the longer run. The distributions of the projections for real GDP growth over the next several years and in the longer run narrowed some since the September SEP. The diversity of views across participants on the outlook for GDP growth reflected, in part, differences in their individual assessments of the size and persistence of the effects of lower energy prices and a stronger dollar on real activity; the time it would take for the headwinds that have been restraining the pace of the economic expansion, such as financial and economic conditions abroad, to dissipate; and the appropriate path of monetary policy. With regard to the unemployment rate, the distributions of projections over the next three years shifted modestly to lower values since September.

Figure 2. FOMC participants' assessments of appropriate monetary policy: Midpoint of target range or target level for the federal funds rate



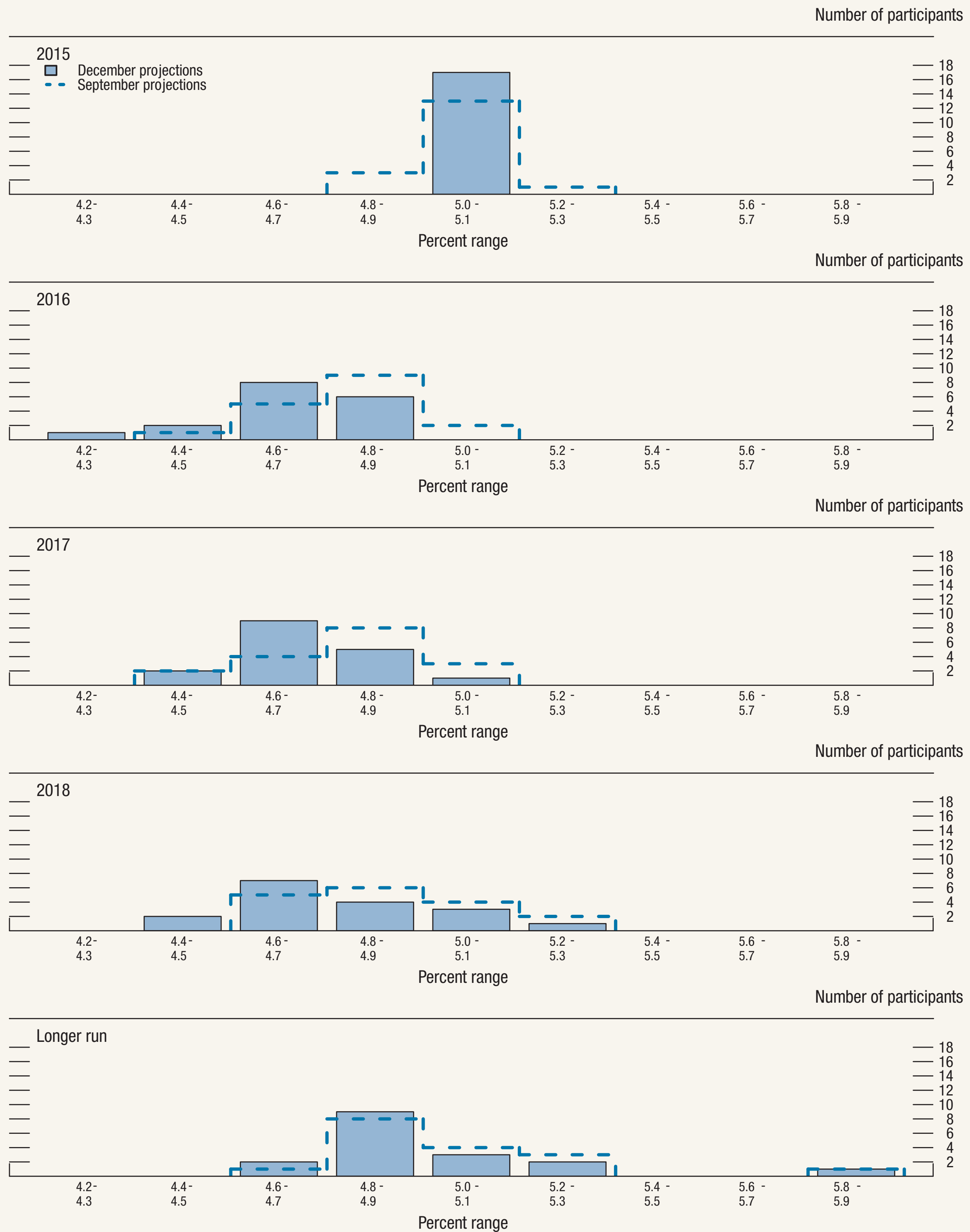
Note: Each shaded circle indicates the value (rounded to the nearest ⅛ percentage point) of an individual participant's judgment of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate at the end of the specified calendar year or over the longer run.

Figure 3.A. Distribution of participants' projections for the change in real GDP, 2015–18 and over the longer run



Note: Definitions of variables are in the general note to table 1.

Figure 3.B. Distribution of participants' projections for the unemployment rate, 2015–18 and over the longer run



Note: Definitions of variables are in the general note to table 1.

The Outlook for Inflation

Nearly all participants saw PCE price inflation picking up in 2016, rising further in 2017, and then reaching a rate in 2018 at or very close to the Committee's 2 percent longer-run objective. However, relative to the September SEP, almost all participants marked down their projections for PCE price inflation in 2016, observing that recent declines in energy prices and the continued strength in the dollar could exert additional downward pressure on inflation in the near term. Revisions to participants' inflation forecasts in 2017 were more mixed, while the projections for inflation in 2018 were little changed. Most participants also marked down their projections for core PCE price inflation in 2016, although almost all still expected core inflation to rise gradually over the projection period and to be at or very close to 2 percent by 2018. Factors cited by participants as contributing to their outlook that inflation will rise over the medium term included recent signs of a pickup in wage growth, their expectation of tighter resource utilization, their expectation that the effects of recent appreciation in the dollar and declines in oil prices on inflation will fade, their anticipation that inflation expectations will remain at levels consistent with the FOMC's longer-run objective, and still-accommodative monetary policy.

Figures 3.C and 3.D provide information on the distribution of participants' views about the outlook for inflation. The distribution of participants' projections for PCE price inflation in 2016 and 2017 shifted to the left compared with the September SEP, while the distributions of projections for 2018 and in the longer run were little changed. The distributions of projections for core PCE price inflation moved lower for 2016 and 2017 compared with September but did not change for 2018.

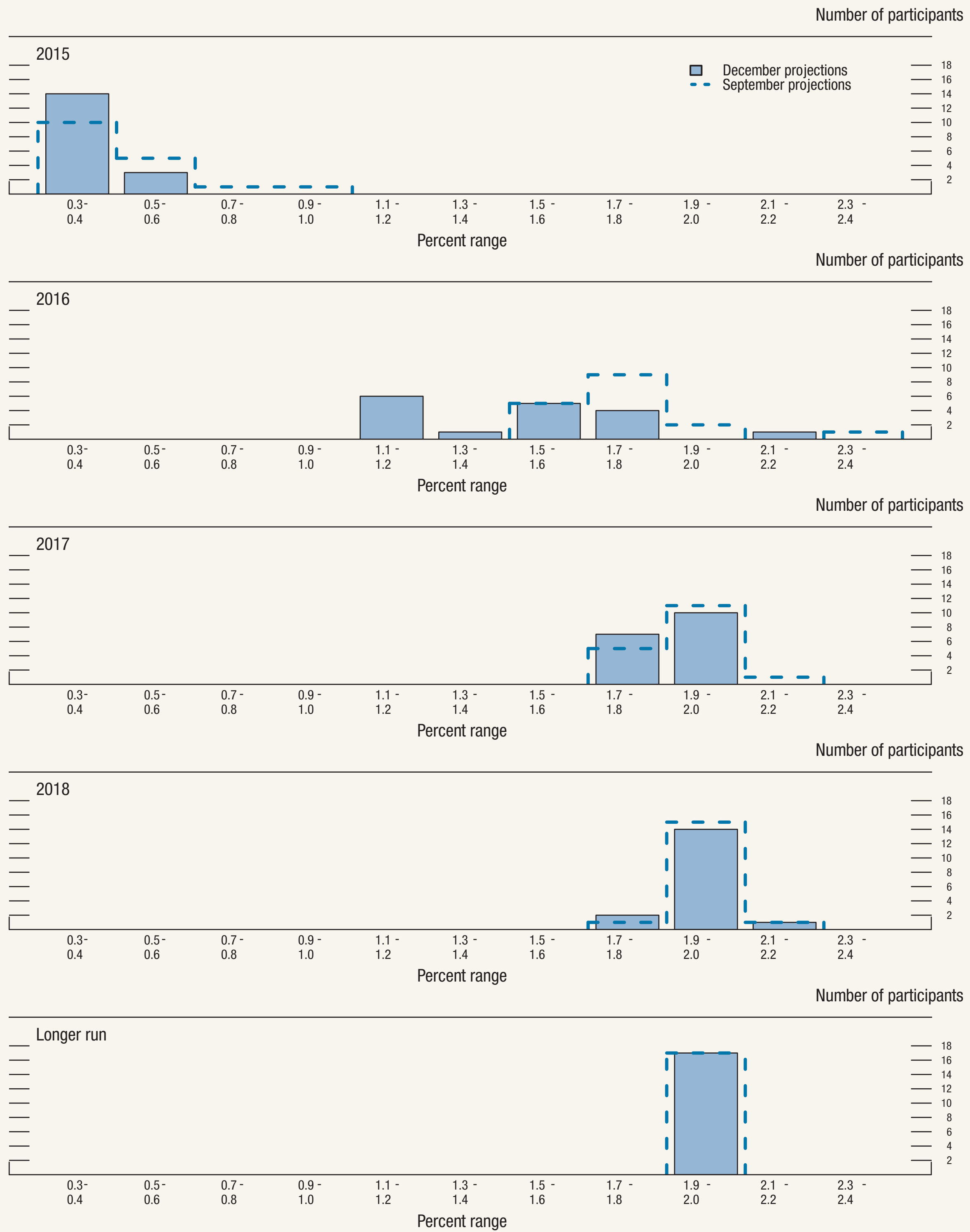
Appropriate Monetary Policy

Figure 3.E provides the distribution of participants' judgments regarding the appropriate level of the target federal funds rate at the end of each calendar year from 2015 to 2018 and over the longer run. Relative to September, the projections of the appropriate levels of the federal funds rate over the next three years generally shifted to lower values. The median projection for next year was unchanged, but the medians for 2017 and 2018 declined slightly. The median projection now stands at 1.4 percent at the end of 2016, 2.4 percent at the end of 2017, and 3.3 percent at the end of 2018. Given their expectations that economic headwinds will persist and that inflation will rise gradually to 2 percent over the next three years, most participants judged that it would be appropriate for the federal funds rate to remain below its longer-run normal level from 2016 to 2018. Participants projected that a gradual rise in the federal funds rate over that period would be appropriate as some of those headwinds, such as sluggish foreign economic growth, diminish and the temporary factors holding down inflation dissipate. Some participants noted that a gradual increase in the federal funds rate would be consistent with their expectation that the neutral short-term real interest rate will rise slowly over the next few years.

Both the median and the range of participants' projections of the federal funds rate in the longer run, at 3.5 percent and 3 to 4 percent, respectively, were unchanged since September. However, several participants revised their projections for the longer-run federal funds rate slightly lower. All participants judged that inflation in the longer run would be equal to the Committee's objective of 2 percent, implying that their individual judgments regarding the appropriate longer-run level of the real federal funds rate, in the absence of further shocks to the economy, ranged from 1 to 2 percent, the same as in September.

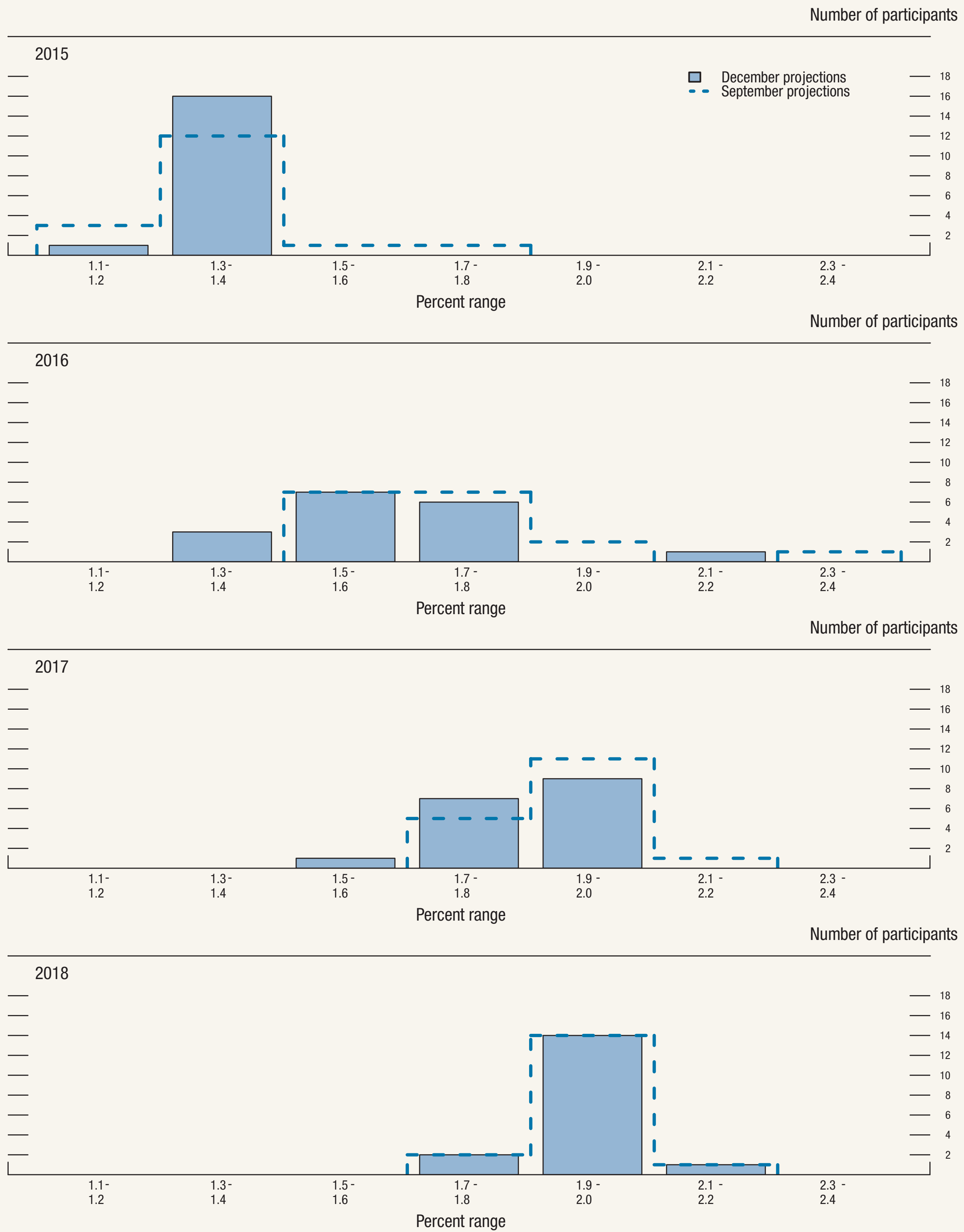
Participants' views of the appropriate path for monetary policy were informed by their judgments about the state of the economy and the outlook for labor markets and inflation. One important consideration for many participants was their estimate of the extent of slack remaining in the labor market, as informed by the incoming data on various labor market indicators. Another was prospects for inflation to return to the Committee's objective of 2 percent; in making such assessments, participants considered a range of factors, including measures of inflation compensation and longer-run inflation expectations as well as the likely persistence and size of the effects from low energy prices and the strong dollar. Participants also emphasized the potential for international developments to continue to have important implications for domestic economic activity and inflation and thus for appropriate monetary policy. Several participants discussed potential interactions between policy normalization and risks to financial stability. In addition, given the continued proximity of short-term interest rates to their effective lower bound, asymmetric risks around the outlook for employment and inflation

Figure 3.C. Distribution of participants' projections for PCE inflation, 2015–18 and over the longer run



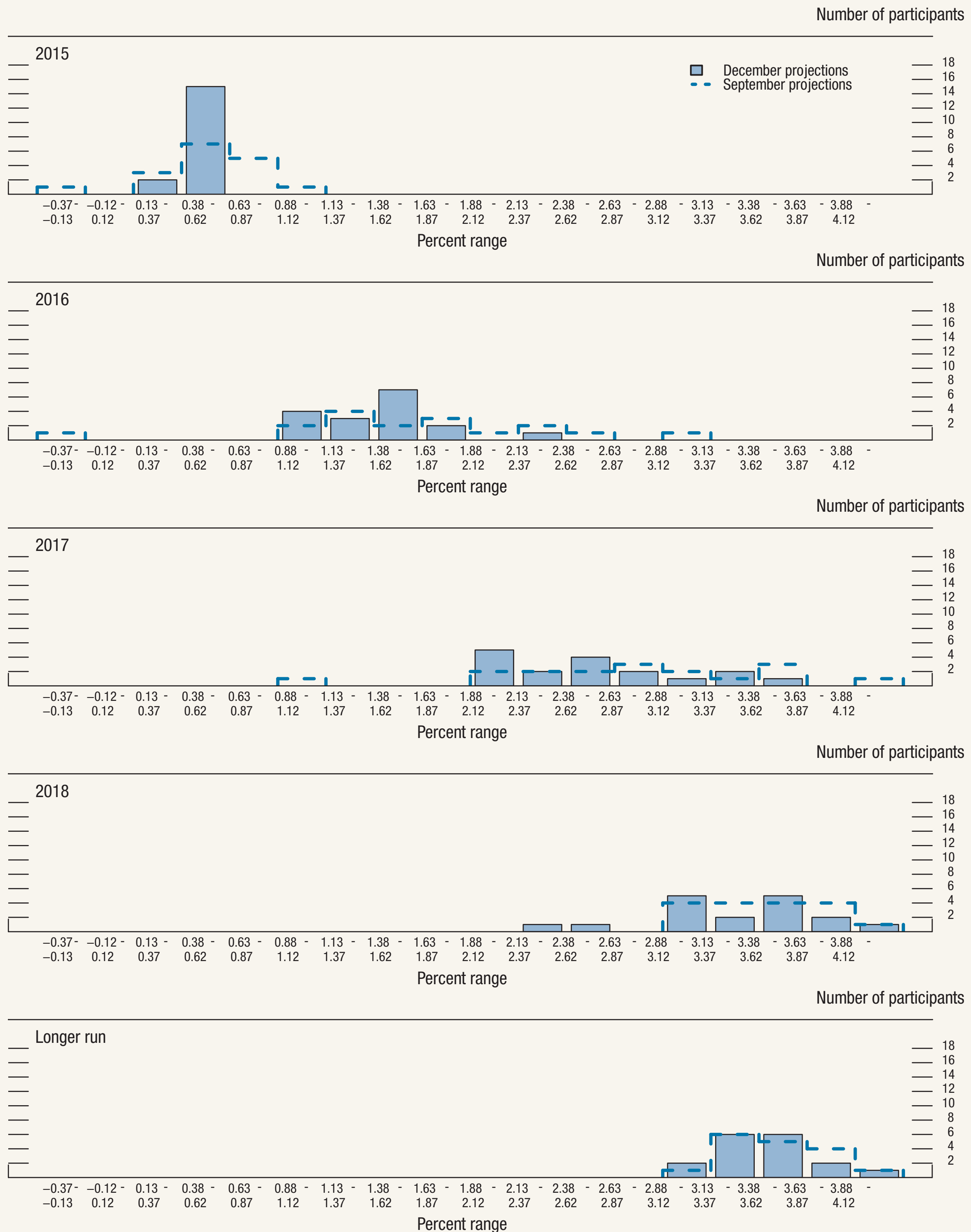
Note: Definitions of variables are in the general note to table 1.

Figure 3.D. Distribution of participants' projections for core PCE inflation, 2015–18



Note: Definitions of variables are in the general note to table 1.

Figure 3.E. Distribution of participants' judgments of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate, 2015–18 and over the longer run



Note: The midpoints of the target ranges for the federal funds rate and the target levels for the federal funds rate are measured at the end of the specified calendar year or over the longer run.

were noted as one reason why a gradual approach to raising the federal funds rate may be appropriate.

Uncertainty and Risks

As in the September SEP, nearly all participants continued to judge the levels of uncertainty around their projections for real GDP growth and the unemployment rate as broadly similar to the average level of the past 20 years (figure 4).[6] Most participants saw the risks to their outlooks for real GDP growth and unemployment as broadly balanced, as the number of participants who viewed the risks to economic growth as weighted to the downside and the risks to the unemployment rate as weighted to the upside fell appreciably since September. Diminished risks to domestic economic activity from developments abroad and the strength of recent labor market data were among the reasons noted for the more upbeat assessment of risks.

As in the September SEP, participants generally agreed that the levels of uncertainty associated with their inflation forecasts were broadly similar to the average level over the past 20 years. The number of participants who viewed the risks to their inflation forecasts as weighted to the downside declined slightly since September, and a majority now viewed the risks to both PCE and core PCE inflation as broadly balanced. Among those who saw risks to inflation as tilted to the downside, several highlighted the continued strength of the dollar and some recent indications that inflation expectations had declined as contributing to their perception of those risks.

Table 2. Average historical projection error ranges
Percentage points

Variable	2015	2016	2017	2018
Change in real GDP[1]	±0.9	±1.8	±2.1	±2.1
Unemployment rate[1]	±0.1	±0.8	±1.4	±1.8
Total consumer prices[2]	±0.2	±1.0	±1.0	±1.0

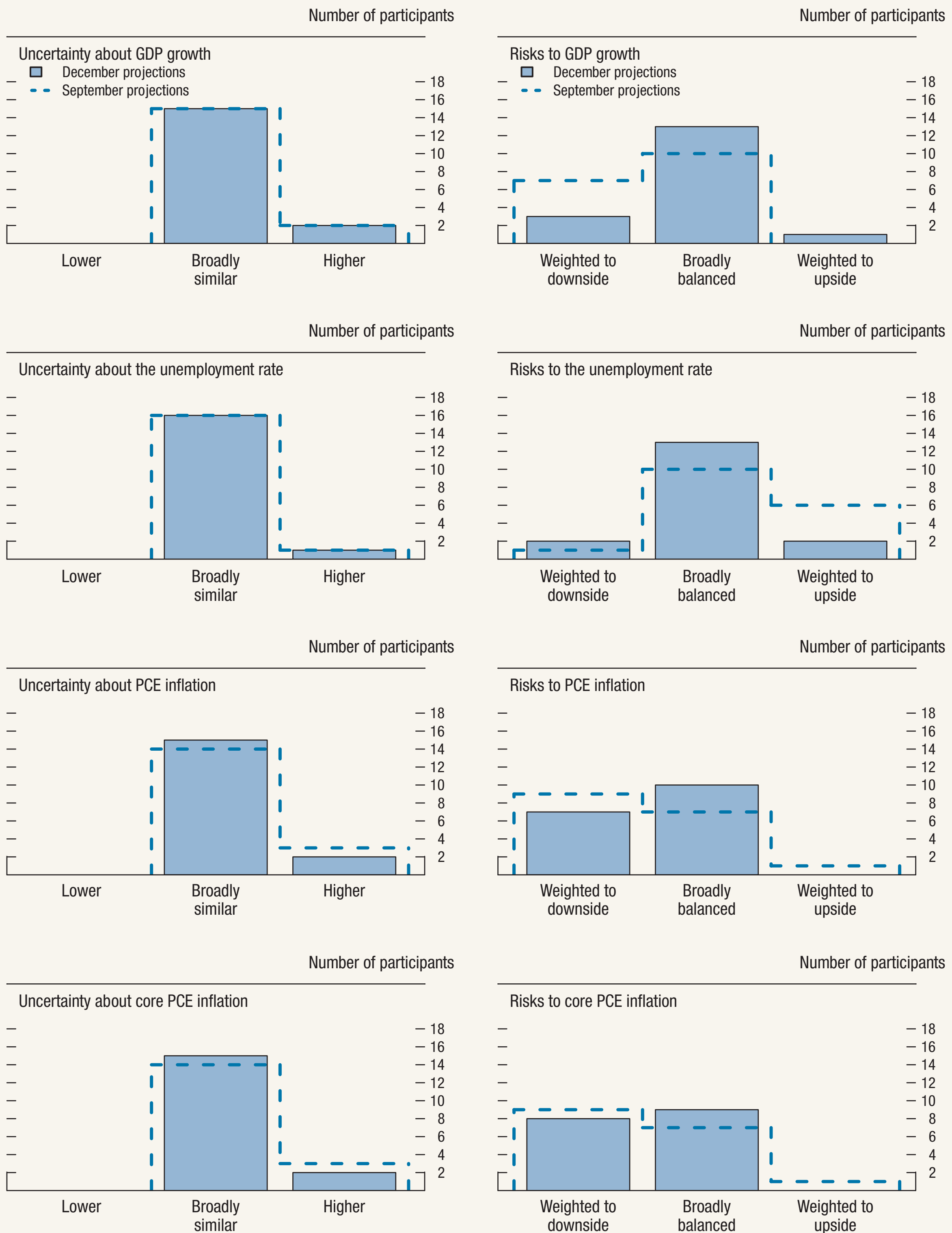
Note: Error ranges shown are measured as plus or minus the root mean squared error of projections for 1995 through 2014 that were released in the fall by various private and government forecasters. As described in the box "Forecast Uncertainty," under certain assumptions, there is about a 70 percent probability that actual outcomes for real GDP, unemployment, and consumer prices will be in ranges implied by the average size of projection errors made in the past. For more information, see David Reifschneider and Peter Tulip (2007), "Gauging the Uncertainty of the Economic Outlook from Historical Forecasting Errors," Finance and Economics Discussion Series 2007-60 (Washington: Board of Governors of the Federal Reserve System, November), available at www.federalreserve.gov/pubs/feds/2007/200760/200760abs.html; and Board of Governors of the Federal Reserve System, Division of Research and Statistics (2014), "Updated Historical Forecast Errors," memorandum, April 9, www.federalreserve.gov/foia/files/20140409-historical-forecast-errors.pdf.

1 Definitions of variables are in the general note to table 1.

2 Measure is the overall consumer price index, the price measure that has been most widely used in government and private economic forecasts. Projection is percent change, fourth quarter of the previous year to the fourth quarter of the year indicated.

6 Table 2 provides estimates of the forecast uncertainty for the change in real GDP, the unemployment rate, and total consumer price inflation over the period from 1995 through 2014. At the end of this summary, the box "Forecast Uncertainty" discusses the sources and interpretation of uncertainty in the economic forecasts and explains the approach used to assess the uncertainty and risks attending the participants' projections.

Figure 4. Uncertainty and risks in economic projections



Note: For definitions of uncertainty and risks in economic projections, see the box "Forecast Uncertainty." Definitions of variables are in the general note to table 1.

Forecast Uncertainty

The economic projections provided by the members of the Board of Governors and the presidents of the Federal Reserve Banks inform discussions of monetary policy among policymakers and can aid public understanding of the basis for policy actions. Considerable uncertainty attends these projections, however. The economic and statistical models and relationships used to help produce economic forecasts are necessarily imperfect descriptions of the real world, and the future path of the economy can be affected by myriad unforeseen developments and events. Thus, in setting the stance of monetary policy, participants consider not only what appears to be the most likely economic outcome as embodied in their projections, but also the range of alternative possibilities, the likelihood of their occurring, and the potential costs to the economy should they occur.

Table 2 summarizes the average historical accuracy of a range of forecasts, including those reported in past *Monetary Policy Reports* and those prepared by the Federal Reserve Board's staff in advance of meetings of the Federal Open Market Committee. The projection error ranges shown in the table illustrate the considerable uncertainty associated with economic forecasts. For example, suppose a participant projects that real gross domestic product (GDP) and total consumer prices will rise steadily at annual rates of, respectively, 3 percent and 2 percent. If the uncertainty attending those projections is similar to that experienced in the past and the risks around the projections are broadly balanced, the numbers reported in table 2 would imply a probability of about 70 percent that actual GDP would expand within a range of 2.1 to 3.9 percent in the current year, 1.2 to 4.8 percent in the second year, and 0.9 to 5.1 percent in the third and fourth years. The corresponding 70 percent confidence intervals for overall inflation would be 1.8 to 2.2 percent in the current year, and 1.0 to 3.0 percent in the second, third, and fourth years.

Because current conditions may differ from those that prevailed, on average, over history, participants provide judgments as to whether the uncertainty attached to their projections of each variable is greater than, smaller than, or broadly similar to typical levels of forecast uncertainty in the past, as shown in table 2. Participants also provide judgments as to whether the risks to their projections are weighted to the upside, are weighted to the downside, or are broadly balanced. That is, participants judge whether each variable is more likely to be above or below their projections of the most likely outcome. These judgments about the uncertainty and the risks attending each participant's projections are distinct from the diversity of participants' views about the most likely outcomes. Forecast uncertainty is concerned with the risks associated with a particular projection rather than with divergences across a number of different projections.

As with real activity and inflation, the outlook for the future path of the federal funds rate is subject to considerable uncertainty. This uncertainty arises primarily because each participant's assessment of the appropriate stance of monetary policy depends importantly on the evolution of real activity and inflation over time. If economic conditions evolve in an unexpected manner, then assessments of the appropriate setting of the federal funds rate would change from that point forward.

10 | Litigation

During 2015, the Board of Governors was a party in 5 lawsuits or appeals filed that year and was a party in 12 other cases pending from previous years, for a total of 17 cases. The Board intervened in or initiated an additional 3 cases relating to privileged documents or testimony. In 2014, the Board had been a party in a total of 19 cases. As of December 31, 2015, 9 cases were pending.

Ruiz v. Board of Governors, et al., No. 15-cv-547 (D. Rhode Island, filed December 22, 2015), is an action seeking a writ of mandamus and declaratory judgment that the Board failed to perform certain duties under golden parachute regulations.

Burford v. Yellen, No. 15-cv-02074 (D. District of Columbia, filed December 1, 2015), is an employment discrimination claim.

SBAV v. Porter Bancorp., No. 13-cv-710 (W.D. Kentucky, motion to intervene filed October 10, 2015), was an action by private investors against a Board-regulated bank holding company under the Kentucky Securities Act and Kentucky common law. On October 14, 2015, the court granted the Board's and Federal Deposit Insurance Corporation's motion to intervene to seek reconsideration of the court's March 31, 2015, order requiring production of privileged bank examination materials. On December 1, 2015, the court granted the agencies' motion to vacate the order as moot.

Artis v. Greenspan, No. 15-5260 (D.C. Circuit, notice of appeal filed September 19, 2015), was an appeal of the dismissal of plaintiffs' Equal Employment Opportunity claims. On December 21, 2015, the Court of Appeals summarily affirmed the district court's dismissal.

White Arnold & Dowd, P.C., v. Board of Governors, No. 15-cv-00789 (N.D. Alabama, filed May 12, 2015), was a Freedom of Information Act case. On October 30, 2015, the district court dismissed the case on the parties' stipulation.

Love v. Federal Reserve Board, No. 15-cv-1077 (D. Kansas, filed March 16, 2015), was a challenge to the Board's monetary policy actions. On June 11, 2015, the district court granted the Board's motion to dismiss the action.

Colonial BancGroup, Inc. v. PricewaterhouseCoopers LLP, No. 15-mc-201 (D. District of Columbia, filed February 19, 2015), was an action to quash deposition subpoenas to a senior Board official and officials of the FDIC. On June 9, 2015, the court granted the agencies' motions to quash.

Ramey v. Board of Governors, No. 14-cv-220 (D. District of Columbia, filed December 22, 2014), was a Freedom of Information Act case. On December 10, 2015, the district court granted the Board's motion to dismiss the action.

Ferrer v. Bernanke, No. 14-15325 (Eleventh Circuit, appeal filed November 25, 2014), is an appeal of the dismissal of an action alleging that plaintiffs received improper relief under the Board's and the Office of the Comptroller of the Currency's financial remediation orders regarding deficient mortgage servicing and foreclosure practices.

The Loan Syndications and Trading Association v. Board of Governors, No. 14-1240 (D.C. Circuit, petition for review filed November 10, 2014), is a challenge to the credit risk retention rules issued under section 941 of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010.

Richardson v. Yellen, No. 14-cv-01673 (D. District of Columbia, filed October 8, 2014), is an employment discrimination claim.

In re Wilmington Trust Securities Litigation, No. 10-cv-990 (D. Delaware, motion to intervene filed August 20, 2014), is a securities class action against Wilmington Trust Corporation and related entities. On August 22, 2014, the court granted the Board's

motion to intervene for the limited purpose of asserting the bank examination privilege.

Community Financial Services Association of America, Ltd., v. Board of Governors, No. 14-cv-00853 (D. District of Columbia, filed June 11, 2014), is a challenge to actions of the Board, the Federal Deposit Insurance Corporation, and the Office of the Comptroller of the Currency that allegedly disadvantage payday lenders.

Johnson v. Federal Reserve Board, No. 14-cv-50 (E.D. North Carolina, filed March 28, 2014), was a complaint by incarcerated individual that his prosecution and imprisonment violated his rights under the "redemption theory." On January 30, 2015, the district court granted the Board's motion to dismiss the action.

WMI Liquidating Trust v. Board of Governors, No. 13-cv-01706 (W.D. Washington, filed September 20, 2013), is an action for a declaratory judgment regarding golden parachute payments. On July 3, 2014, the action was transferred to the United States Bankruptcy Court for the District of Delaware (Adv. Pro. No. 14-50435-MFW (Bankr. D. Del.)).

NACS et al. v. Board of Governors, No. 13-5720 (D.C. Circuit, notice of appeal filed August 21, 2013), was an appeal from a District Court ruling invalidating Board regulations issued pursuant to section 1075 of the Dodd-Frank Wall Street Reform and Consumer Protection Act relating to debit card interchange fees. On March 21, 2014, the Court of Appeals reversed the District Court's grant of summary judgment and remanded the action to the district court. On January 20, 2015, the Supreme Court denied NACS's petition for certiorari (No. 14-200), and on October 2, 2015, the District Court entered judgment for the Board.

State National Bank of Big Spring v. Bernanke, No. 13-5247 (D.C. Circuit, notice of appeal filed August 2, 2013), is an appeal of a district court ruling dismissing plaintiffs' challenge to the constitutionality of the Consumer Financial Protection Bureau (CFPB) and the Financial Stability Oversight Council. On July 24, 2015, the Court of Appeals affirmed in part and remanded in part to the district court to consider issues related to the CFPB.

Ball v. Board of Governors, No. 13-cv-00603 (D. District of Columbia, filed April 30, 2013), was a Freedom of Information Act case. On March 31, 2015, the District Court granted the Board's motion for summary judgment.

Crisman v. Board of Governors et al., No. 12-cv-1871 (D. District of Columbia, filed November 19, 2012), is a Freedom of Information Act case.

Wise v. Federal Reserve Board, No. 12-cv-1636 (D. District of Columbia, filed October 2, 2012), was a claim under the Federal Tort Claims Act. On November 17, 2015, the court entered judgment for the Board.

11 Statistical Tables

Table 1. Federal Reserve open market transactions, 2015

Millions of dollars

Type of security and transaction	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
U.S. Treasury securities[1]													
Outright transactions[2]													
Treasury bills													
Gross purchases	0	0	0	0	0	0	0	0	0	0	0	0	0
Gross sales	0	0	0	0	0	0	0	0	0	0	0	0	0
Exchanges	0	0	0	0	0	0	0	0	0	0	0	0	0
For new bills	0	0	0	0	0	0	0	0	0	0	0	0	0
Redemptions	0	0	0	0	0	0	0	0	0	0	0	0	0
Others up to 1 year													
Gross purchases	0	0	0	0	0	0	0	0	0	0	0	0	0
Gross sales	0	0	0	0	0	0	0	0	0	0	0	0	0
Exchanges	0	-2	0	-450	-1,448	0	0	-1,287	0	0	-326	0	-3,513
Redemptions	1	0	2	1	0	1	1	0	1	0	0	0	8
Over 1 to 5 years													
Gross purchases	0	0	0	0	0	0	0	0	0	0	0	0	0
Gross sales	0	0	0	0	0	0	0	0	0	0	0	0	0
Exchanges	0	1	0	344	543	0	0	482	0	0	122	0	1,492
Over 5 to 10 years													
Gross purchases	0	0	0	0	0	0	0	0	0	0	0	0	0
Gross sales	0	0	0	0	0	0	0	0	0	0	0	0	0
Exchanges	0	1	0	106	543	0	0	482	0	0	122	0	1,255
More than 10 years													
Gross purchases	0	0	0	0	0	0	0	0	0	0	0	0	0
Gross sales	0	0	0	0	0	0	0	0	0	0	0	0	0
Exchanges	0	1	0	0	362	0	0	322	0	0	82	0	766
All maturities													
Gross purchases	0	0	0	0	0	0	0	0	0	0	0	0	0
Gross sales	0	0	0	0	0	0	0	0	0	0	0	0	0
Redemptions	1	0	2	1	0	1	1	0	1	0	0	0	8
Net change in U.S. Treasury securities	-1	0	-2	-1	0	-1	-1	0	-1	0	0	0	-8
Federal agency obligations													
Outright transactions[2]													
Gross purchases	0	0	0	0	0	0	0	0	0	0	0	0	0
Gross sales	0	0	0	0	0	0	0	0	0	0	0	0	0
Redemptions	1,089	711	0	982	0	0	802	0	0	947	1,202	0	5,733
Net change in federal agency obligations	-1,089	-711	0	-982	0	0	-802	0	0	-947	-1,202	0	-5,733
Mortgage-backed securities[3]													
Net settlements[2]													
Net change in mortgage-backed securities	1,844	1,547	-8,297	-13,067	3,574	9,621	2,789	1,806	4,584	2,859	697	2,672	10,629
Total net change in securities holdings[4]	**755**	**835**	**-8,298**	**-14,050**	**3,574**	**9,620**	**1,986**	**1,805**	**4,583**	**1,912**	**-505**	**2,672**	**4,888**

(continued on next page)

Table 1.—*continued*

Type of security and transaction	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Temporary transactions													
Repurchase agreements[5]													
Gross purchases	0	0	0	0	840	0	0	0	0	0	0	590	1,430
Gross sales	0	0	0	0	840	0	0	0	0	0	0	590	1,430
Reverse repurchase agreements[5]													
Gross purchases	5,084,722	4,966,806	5,184,737	5,571,299	5,180,212	5,710,637	6,385,427	5,169,677	5,313,442	6,815,533	5,689,191	7,224,426	68,296,108
Gross sales	4,890,590	4,991,115	5,381,581	5,325,287	5,205,940	5,952,229	6,126,536	5,193,423	5,631,503	6,600,318	5,603,092	7,597,059	68,498,672
Net change in temporary transactions	194,132	-24,310	-196,844	246,012	-25,728	-241,592	258,892	-23,746	-318,061	215,215	86,099	-372,633	-202,564

Note: Purchases of Treasury securities and federal agency obligations increase securities holdings; sales and redemptions of these securities decrease securities holdings. Exchanges occur when the Federal Reserve rolls the proceeds of maturing securities into newly issued securities, and so exchanges do not affect total securities holdings. Positive net settlements of mortgage-backed securities increase securities holdings, while negative net settlements of these securities decrease securities holdings. Components may not sum to totals because of rounding. See table 2 of the H.4.1 release (www.federalreserve.gov/releases/h41/) for the maturity distribution of the securities.

1 Transactions exclude changes in compensation for the effects of inflation on the principal of inflation-indexed securities. Transactions include the rollover of inflation compensation into new securities. The maturity distributions of exchanged Treasury securities are based on the announced maturity of new securities rather than actual day counts.

2 Excludes the effect of temporary transactions—repurchase agreements and reverse repurchase agreements.

3 Guaranteed by Fannie Mae, Freddie Mac, and Ginnie Mae. Monthly net change in the remaining principal balance of the securities, reported at face value.

4 The net change in securities holdings reflects the settlements of purchases, reinvestments, sales, and maturities of portfolio securities.

5 Cash value of agreements, which are collateralized by U.S. Treasury securities, federal agency debt securities, and mortgage-backed securities.

Table 2. Federal Reserve Bank holdings of U.S. Treasury and federal agency securities, December 31, 2013–15
Millions of dollars

Description	December 31			Change	
	2015	2014	2013	2014 to 2015	2013 to 2014
U.S. Treasury securities					
Held outright[1]	**2,461,552**	**2,461,363**	**2,208,775**	**189**	**252,588**
By remaining maturity					
Bills					
1–90 days	0	0	0	0	0
91 days to 1 year	0	0	0	0	0
Notes and bonds					
1 year or less	216,115	3,520	474	212,595	3,046
More than 1 year through 5 years	1,118,349	1,112,927	763,329	5,422	349,598
More than 5 years through 10 years	489,226	686,627	864,700	-197,401	-178,073
More than 10 years	637,862	658,289	580,272	-20,427	78,017
By type					
Bills	0	0	0	0	0
Notes	1,634,772	1,634,949	1,467,427	-177	167,522
Bonds	826,780	826,414	741,348	366	85,066
Federal agency securities					
Held outright[1]	**32,944**	**38,677**	**57,221**	**-5,733**	**-18,544**
By remaining maturity					
Discount notes					
1–90 days	0	0	0	0	0
91 days to 1 year	0	0	0	0	0
Coupons					
1 year or less	16,764	5,733	18,544	11,031	-12,811
More than 1 year through 5 years	13,833	30,597	36,268	-16,764	-5,671
More than 5 years though 10 years	0	0	62	0	-62
More than 10 years	2,347	2,347	2,347	0	0
By type					
Discount notes	0	0	0	0	0
Coupons	32,944	38,677	57,221	-5,733	-18,544
By issuer					
Federal Home Loan Mortgage Corporation	15,711	19,515	24,986	-3,804	-5,471
Federal National Mortgage Association	11,541	13,470	25,555	-1,929	-12,085
Federal Home Loan Banks	5,692	5,692	6,680	0	-988
Mortgage-backed securities[2]					
Held outright[1]	**1,747,461**	**1,736,833**	**1,490,162**	**10,628**	**246,671**
By remaining maturity					
1 year or less	0	0	0	0	0
More than 1 year through 5 years	467	13	5	454	8
More than 5 years though 10 years	9,014	6,453	2,549	2,561	3,904
More than 10 years	1,737,980	1,730,367	1,487,608	7,613	242,759
By issuer					
Federal Home Loan Mortgage Corporation	510,463	501,914	426,311	8,549	75,603
Federal National Mortgage Association	872,113	886,716	774,689	-14,603	112,027
Government National Mortgage Association	364,885	348,203	289,162	16,682	59,041
Temporary transactions					
Repurchase agreements[3]	**0**	**0**	**0**	**0**	**0**
Reverse repurchase agreements[3]	**712,401**	**509,837**	**315,924**	**202,564**	**193,913**
Foreign official and international accounts	237,809	113,132	118,169	124,677	-5,037
Primary dealers and expanded counterparties	474,592	396,705	197,755	77,887	198,950

Note: Components may not sum to totals because of rounding.

[1] Excludes the effect of temporary transactions—repurchase agreements and reverse repurchase agreements.

[2] Guaranteed by Fannie Mae, Freddie Mac, and Ginnie Mae.

[3] Cash value of agreements, which are collateralized by U.S. Treasury securities, federal agency debt securities, and mortgage-backed securities.

Table 3. Federal Reserve Bank interest rates on loans to depository institutions, December 31, 2015

Percent

Reserve Bank	Primary credit	Secondary credit	Seasonal credit
All banks	1.00	1.50	0.40

Note: For details on rate changes over the course of 2015, see the section on discount rates in section 8 of this annual report ("Record of Policy Actions of the Board of Governors"). *Primary credit* is available for very short terms as a backup source of liquidity to depository institutions that are in generally sound financial condition in the judgment of the lending Federal Reserve Bank. *Secondary credit* is available in appropriate circumstances to depository institutions that do not qualify for primary credit. *Seasonal credit* is available to help relatively small depository institutions meet regular seasonal needs for funds that arise from a clear pattern of intra-yearly movements in their deposits and loans. The discount rate on seasonal credit takes into account rates charged by market sources of funds and is reestablished on the first business day of each two-week reserve maintenance period.

Table 4. Reserve requirements of depository institutions, December 31, 2015

Type of deposit	Requirements	
	Percentage of deposits	Effective date
Net transaction accounts[1]		
$0 million–$15.2 million[2]	0	12/17/2015
More than $15.2 million–$110.2 million[3]	3	12/17/2015
More than $110.2 million	10	12/17/2015
Nonpersonal time deposits	0	12/27/1990
Eurocurrency liabilities	0	12/27/1990

Note: Required reserves must be held in the form of vault cash and, if vault cash is insufficient, also in the form of a deposit with a Federal Reserve Bank. An institution must hold that deposit directly with a Reserve Bank or with another institution in a pass-through relationship. Reserve requirements are imposed on commercial banks, savings banks, savings and loan associations, credit unions, U.S. branches and agencies of foreign banks, Edge corporations, and agreement corporations.

1 Total transaction accounts consist of demand deposits, automatic transfer service (ATS) accounts, NOW accounts, share draft accounts, telephone or preauthorized transfer accounts, ineligible acceptances, and affiliate-issued obligations maturing in seven days or less. Net transaction accounts are total transaction accounts less amounts due from other depository institutions and less cash items in the process of collection.

For a more detailed description of these deposit types, see Form FR 2900.

2 The amount of net transaction accounts subject to a reserve requirement ratio of 0 percent (the "exemption amount") is adjusted each year by statute. The exemption amount is adjusted upward by 80 percent of the previous year's (June 30 to June 30) rate of increase in total reservable liabilities at all depository institutions. No adjustment is made in the event of a decrease in such liabilities.

3 The amount of net transaction accounts subject to a reserve requirement ratio of 3 percent is the "low reserve tranche." By statute, the upper limit of the low reserve tranche is adjusted each year by 80 percent of the previous year's (June 30 to June 30) rate of increase or decrease in net transaction accounts held by all depository institutions.

Table 5. Banking offices and banks affiliated with bank holding companies in the United States, December 31, 2014 and 2015

Type of office	Total	Commercial banks[1]					State-chartered savings banks
		Total	Member			Nonmember	
			Total	National	State		
All banking offices							
Banks							
Number, Dec. 31, 2014	**5,887**	**5,604**	**1,894**	**1,057**	**837**	**3,710**	**283**
Changes during 2015							
New banks	23	17	7	6	1	10	6
Banks converted into branches	-251	-245	-89	-52	-37	-156	-6
Ceased banking operations[2]	-38	-36	-14	-10	-4	-22	-2
Other[3]	0	1	-1	-19	18	2	-1
Net change	-266	-263	-97	-75	-22	-166	-3
Number, Dec. 31, 2015	**5,621**	**5,341**	**1,797**	**982**	**815**	**3,544**	**280**
Branches and additional offices							
Number, Dec. 31, 2014	**83,189**	**80,501**	**57,084**	**42,987**	**14,097**	**23,417**	**2,688**
Changes during 2015							
New branches	1,789	1,641	1,182	864	318	459	148
Banks converted to branches	251	240	109	53	56	131	11
Discontinued[2]	-2,051	-2,022	-1,556	-1,183	-373	-466	-29
Other[3]	0	-20	-150	-301	151	130	20
Net change	-11	-161	-415	-567	152	254	150
Number, Dec. 31, 2015	**83,178**	**80,340**	**56,669**	**42,420**	**14,249**	**23,671**	**2,838**
Banks affiliated with bank holding companies							
Banks							
Number, Dec. 31, 2014	**4,835**	**4,708**	**1,670**	**924**	**746**	**3,038**	**127**
Changes during 2015							
BHC-affiliated new banks	53	47	17	9	8	30	6
Banks converted into branches	-200	-197	-74	-44	-30	-123	-3
Ceased banking operations[2]	-37	-37	-13	-9	-4	-24	0
Other[3]	0	1	2	-16	18	-1	-1
Net change	-184	-186	-68	-60	-8	-118	2
Number, Dec. 31, 2015	**4,651**	**4,522**	**1,602**	**864**	**738**	**2,920**	**129**

Note: Includes banks, banking offices, and bank holding companies in U.S. territories and possessions (affiliated insular areas).

[1] For purposes of this table, banks are entities that are defined as banks in the Bank Holding Company Act, as amended, which is implemented by Federal Reserve Regulation Y. Generally, a bank is any institution that accepts demand deposits and is engaged in the business of making commercial loans or any institution that is defined as an insured bank in section 3(h) of the Federal Deposit Insurance Corporation Act.

[2] Institutions that no longer meet the Regulation Y definition of a bank.

[3] Interclass changes and sales of branches.

Table 6A. Reserves of depository institutions, Federal Reserve Bank credit, and related items, year-end 1984–2015 and month-end 2015
Millions of dollars

Period	Factors supplying reserve funds								
	Federal Reserve Bank credit outstanding						Gold stock	Special drawing rights certificate account	Treasury currency outstanding[5]
	Securities held outright[1]	Repurchase agreements[2]	Loans and other credit extensions[3]	Float	Other Federal Reserve assets[4]	Total[4]			
1984	167,612	2,015	3,577	833	12,347	186,384	11,096	4,618	16,418
1985	186,025	5,223	3,060	988	15,302	210,598	11,090	4,718	17,075
1986	205,454	16,005	1,565	1,261	17,475	241,760	11,084	5,018	17,567
1987	226,459	4,961	3,815	811	15,837	251,883	11,078	5,018	18,177
1988	240,628	6,861	2,170	1,286	18,803	269,748	11,060	5,018	18,799
1989	233,300	2,117	481	1,093	39,631	276,622	11,059	8,518	19,628
1990	241,431	18,354	190	2,222	39,897	302,091	11,058	10,018	20,402
1991	272,531	15,898	218	731	34,567	323,945	11,059	10,018	21,014
1992	300,423	8,094	675	3,253	30,020	342,464	11,056	8,018	21,447
1993	336,654	13,212	94	909	33,035	383,904	11,053	8,018	22,095
1994	368,156	10,590	223	-716	33,634	411,887	11,051	8,018	22,994
1995	380,831	13,862	135	107	33,303	428,239	11,050	10,168	24,003
1996	393,132	21,583	85	4,296	32,896	451,992	11,048	9,718	24,966
1997	431,420	23,840	2,035	719	31,452	489,466	11,047	9,200	25,543
1998	452,478	30,376	17	1,636	36,966	521,475	11,046	9,200	26,270
1999	478,144	140,640	233	-237	35,321	654,100	11,048	6,200	28,013
2000	511,833	43,375	110	901	36,467	592,686	11,046	2,200	31,643
2001	551,685	50,250	34	-23	37,658	639,604	11,045	2,200	33,017
2002	629,416	39,500	40	418	39,083	708,457	11,043	2,200	34,597
2003	666,665	43,750	62	-319	40,847	751,005	11,043	2,200	35,468
2004	717,819	33,000	43	925	42,219	794,007	11,045	2,200	36,434
2005	744,215	46,750	72	885	39,611	831,532	11,043	2,200	36,540
2006	778,915	40,750	67	-333	39,895	859,294	11,041	2,200	38,206
2007	740,611	46,500	72,636	-19	41,799	901,528	11,041	2,200	38,681
2008	495,629	80,000	1,605,848	-1,494	43,553	2,223,537	11,041	2,200	38,674
2009	1,844,838	0	281,095	-2,097	92,811	2,216,647	11,041	5,200	42,691
2010	2,161,094	0	138,311	-1,421	110,255	2,408,240	11,041	5,200	43,542
2011	2,605,124	0	144,098	-631	152,568	2,901,159	11,041	5,200	44,198
2012	2,669,589	0	11,867	-486	218,296	2,899,266	11,041	5,200	44,751
2013	3,756,158	0	2,177	-962	246,947	4,004,320	11,041	5,200	45,493
2014[r]	4,236,873	0	3,351	-555	239,238	4,478,908	11,041	5,200	46,301
2015	4,241,958	0	2,830	-36	221,448	4,466,199	11,041	5,200	47,581

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Table 6A.—*continued*

Period	Factors supplying reserve funds								
	Federal Reserve Bank credit outstanding						Gold stock	Special drawing rights certificate account	Treasury currency outstanding[5]
	Securities held outright[1]	Repurchase agreements[2]	Loans and other credit extensions[3]	Float	Other Federal Reserve assets[4]	Total[4]			
2015, month-end									
Jan	4,237,009	0	1,778	-314	243,701	4,482,174	11,041	5,200	46,475
Feb	4,237,198	0	1,702	-357	230,517	4,469,060	11,041	5,200	46,568
Mar	4,228,366	0	2,550	-748	232,292	4,462,460	11,041	5,200	46,671
Apr	4,214,806	0	1,753	-448	235,702	4,451,813	11,041	5,200	46,785
May	4,219,055	0	1,797	-312	226,332	4,446,872	11,041	5,200	46,883
Jun	4,228,907	0	2,497	-412	229,234	4,460,226	11,041	5,200	47,000
Jul	4,231,475	0	2,201	-23	232,838	4,466,492	11,041	5,200	47,128
Aug	4,233,683	0	2,087	354	220,770	4,456,895	11,041	5,200	47,222
Sep	4,238,274	0	2,635	-87	224,659	4,465,482	11,041	5,200	47,327
Oct	4,240,023	0	2,008	332	229,458	4,471,821	11,041	5,200	47,455
Nov	4,239,338	0	1,946	668	217,013	4,458,964	11,041	5,200	47,511
Dec	4,241,958	0	2,830	-36	221,448	4,466,199	11,041	5,200	47,581

Note: Components may not sum to totals because of rounding.

1 Includes U.S. Treasury securities, federal agency debt securities, and mortgage-backed securities. U.S. Treasury securities and federal agency debt securities include securities lent to dealers, which are fully collateralized by U.S. Treasury securities, federal agency securities, and other highly rated debt securities.

2 Cash value of agreements, which are collateralized by U.S. Treasury securities, federal agency debt securities, and agency mortgage-backed securities.

3 As of 2015, includes only central bank liquidity swaps; primary, seasonal, and secondary credit; and net portfolio holdings of Maiden Lane LLC. For disaggregated loans and other credit extensions from 1984 to 2014, refer to "Table 6B. Loans and other credit extensions, by type, year-end 1984-2014 and month-end 2014" of the *2014 Annual Report.*

4 As of 2013, unamortized discounts on securities held outright are included as a component of Other Federal Reserve assets. Previously, they were included in Other Federal Reserve liabilities and capital.

5 Includes currency and coin (other than gold) issued directly by the U.S. Treasury. The largest components are fractional and dollar coins. For details, refer to "U.S. Currency and Coin Outstanding and in Circulation," *Treasury Bulletin.*

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Table 6A.—*continued*

Period	Factors absorbing reserve funds										Reserve balances with Federal Reserve Banks
	Currency in circulation	Reverse repurchase agreements[6]	Treasury cash holdings[7]	Deposits with Federal Reserve Banks, other than reserve balances					Required clearing balances[9]	Other Federal Reserve liabilities and capital[4,10]	
				Term deposits	Treasury general account	Treasury supplementary financing account	Foreign	Other[8]			
1984	183,796	0	513	n/a	5,316	n/a	253	867	1,126	5,952	20,693
1985	197,488	0	550	n/a	9,351	n/a	480	1,041	1,490	5,940	27,141
1986	211,995	0	447	n/a	7,588	n/a	287	917	1,812	6,088	46,295
1987	230,205	0	454	n/a	5,313	n/a	244	1,027	1,687	7,129	40,097
1988	247,649	0	395	n/a	8,656	n/a	347	548	1,605	7,683	37,742
1989	260,456	0	450	n/a	6,217	n/a	589	1,298	1,618	8,486	36,713
1990	286,963	0	561	n/a	8,960	n/a	369	528	1,960	8,147	36,081
1991	307,756	0	636	n/a	17,697	n/a	968	1,869	3,946	8,113	25,051
1992	334,701	0	508	n/a	7,492	n/a	206	653	5,897	7,984	25,544
1993	365,271	0	377	n/a	14,809	n/a	386	636	6,332	9,292	27,967
1994	403,843	0	335	n/a	7,161	n/a	250	1,143	4,196	11,959	25,061
1995	424,244	0	270	n/a	5,979	n/a	386	2,113	5,167	12,342	22,960
1996	450,648	0	249	n/a	7,742	n/a	167	1,178	6,601	13,829	17,310
1997	482,327	0	225	n/a	5,444	n/a	457	1,171	6,684	15,500	23,447
1998	517,484	0	85	n/a	6,086	n/a	167	1,869	6,780	16,354	19,164
1999	628,359	0	109	n/a	28,402	n/a	71	1,644	7,481	17,256	16,039
2000	593,694	0	450	n/a	5,149	n/a	216	2,478	6,332	17,962	11,295
2001	643,301	0	425	n/a	6,645	n/a	61	1,356	8,525	17,083	8,469
2002	687,518	21,091	367	n/a	4,420	n/a	136	1,266	10,534	18,977	11,988
2003	724,187	25,652	321	n/a	5,723	n/a	162	995	11,829	19,793	11,054
2004	754,877	30,783	270	n/a	5,912	n/a	80	1,285	9,963	26,378	14,137
2005	794,014	30,505	202	n/a	4,573	n/a	83	2,144	8,651	30,466	10,678
2006	820,176	29,615	252	n/a	4,708	n/a	98	972	6,842	36,231	11,847
2007	828,938	43,985	259	n/a	16,120	n/a	96	1,830	6,614	41,622	13,986
2008	889,898	88,352	259	n/a	106,123	259,325	1,365	21,221	4,387	48,921	855,599
2009	928,249	77,732	239	n/a	186,632	5,001	2,411	35,262	3,020	63,219	973,814
2010	982,750	59,703	177	0	140,773	199,964	3,337	13,631	2,374	99,602	965,712
2011	1,075,820	99,900	128	0	85,737	0	125	64,909	2,480	72,766	1,559,731
2012	1,169,159	107,188	150	0	92,720	0	6,427	27,476	n/a	66,093	1,491,044
2013	1,241,228	315,924	234	0	162,399	0	7,970	26,181	n/a	63,049	2,249,070
2014[r]	1,342,957	509,837	201	0	223,452	0	5,242	20,320	n/a	61,447	2,377,995
2015	1,424,981	712,401	266	0	333,447	0	5,231	31,212	n/a	45,320	1,977,163

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Table 6A.—*continued*

Period	Factors absorbing reserve funds										Reserve balances with Federal Reserve Banks
	Currency in circulation	Reverse repurchase agreements[6]	Treasury cash holdings[7]	Deposits with Federal Reserve Banks, other than reserve balances					Required clearing balances[9]	Other Federal Reserve liabilities and capital[4,10]	
				Term deposits	Treasury general account	Treasury supplementary financing account	Foreign	Other[8]			
2015, month-end											
Jan	1,329,471	315,705	202	0	156,815	0	5,467	8,967	n/a	62,677	2,665,586
Feb	1,351,278	340,015	216	216,067	34,929	0	5,234	6,675	n/a	64,437	2,513,018
Mar	1,359,069	536,859	196	0	100,084	0	5,230	21,061	n/a	65,592	2,437,282
Apr	1,360,698	290,847	229	0	273,869	0	5,231	10,530	n/a	65,153	2,508,284
May	1,367,912	316,574	160	145,702	198,947	0	5,233	8,442	n/a	66,166	2,400,861
Jun	1,368,678	558,167	102	0	254,340	0	5,247	28,399	n/a	66,070	2,242,466
Jul	1,372,471	299,275	107	0	209,982	0	5,244	13,727	n/a	65,410	2,563,643
Aug	1,379,282	323,021	155	0	131,787	0	5,269	17,937	n/a	66,362	2,596,545
Sep	1,387,621	641,081	191	0	198,716	0	6,231	32,267	n/a	65,285	2,197,657
Oct	1,395,040	425,866	238	0	22,892	0	5,259	24,501	n/a	65,284	2,596,435
Nov	1,411,448	339,768	237	0	253,274	0	5,249	21,140	n/a	66,468	2,425,133
Dec	1,424,981	712,401	266	0	333,447	0	5,231	31,212	n/a	45,320	1,977,163[r]

[6] Cash value of agreements, which are collateralized by U.S. Treasury securities, federal agency debt securities, and agency mortgage-backed securities.

[7] Coin and paper currency held by the Treasury.

[8] As of 2014, includes desposits of designated financial market utilites.

[9] Required clearing balances were discontinued in July 2012.

[10] In 2010, includes funds from American International Group, Inc. asset dispositions, held as agent.

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n/a Not applicable.

Table 6B. Reserves of depository institutions, Federal Reserve Bank credit, and related items, year-end 1918–1983
Millions of dollars

Period	Factors supplying reserve funds									
	Federal Reserve Bank credit outstanding							Gold stock[6]	Special drawing rights certificate account	Treasury currency outstanding[7]
	Securities held outright[1]	Repurchase agreements[2]	Loans	Float[3]	All other[4]	Other Federal Reserve assets[5]	Total			
1918	239	0	1,766	199	294	0	2,498	2,873	n/a	1,795
1919	300	0	2,215	201	575	0	3,292	2,707	n/a	1,707
1920	287	0	2,687	119	262	0	3,355	2,639	n/a	1,709
1921	234	0	1,144	40	146	0	1,563	3,373	n/a	1,842
1922	436	0	618	78	273	0	1,405	3,642	n/a	1,958
1923	80	54	723	27	355	0	1,238	3,957	n/a	2,009
1924	536	4	320	52	390	0	1,302	4,212	n/a	2,025
1925	367	8	643	63	378	0	1,459	4,112	n/a	1,977
1926	312	3	637	45	384	0	1,381	4,205	n/a	1,991
1927	560	57	582	63	393	0	1,655	4,092	n/a	2,006
1928	197	31	1,056	24	500	0	1,809	3,854	n/a	2,012
1929	488	23	632	34	405	0	1,583	3,997	n/a	2,022
1930	686	43	251	21	372	0	1,373	4,306	n/a	2,027
1931	775	42	638	20	378	0	1,853	4,173	n/a	2,035
1932	1,851	4	235	14	41	0	2,145	4,226	n/a	2,204
1933	2,435	2	98	15	137	0	2,688	4,036	n/a	2,303
1934	2,430	0	7	5	21	0	2,463	8,238	n/a	2,511
1935	2,430	1	5	12	38	0	2,486	10,125	n/a	2,476
1936	2,430	0	3	39	28	0	2,500	11,258	n/a	2,532
1937	2,564	0	10	19	19	0	2,612	12,760	n/a	2,637
1938	2,564	0	4	17	16	0	2,601	14,512	n/a	2,798
1939	2,484	0	7	91	11	0	2,593	17,644	n/a	2,963
1940	2,184	0	3	80	8	0	2,274	21,995	n/a	3,087
1941	2,254	0	3	94	10	0	2,361	22,737	n/a	3,247
1942	6,189	0	6	471	14	0	6,679	22,726	n/a	3,648
1943	11,543	0	5	681	10	0	12,239	21,938	n/a	4,094
1944	18,846	0	80	815	4	0	19,745	20,619	n/a	4,131
1945	24,262	0	249	578	2	0	25,091	20,065	n/a	4,339
1946	23,350	0	163	580	1	0	24,093	20,529	n/a	4,562
1947	22,559	0	85	535	1	0	23,181	22,754	n/a	4,562
1948	23,333	0	223	541	1	0	24,097	24,244	n/a	4,589
1949	18,885	0	78	534	2	0	19,499	24,427	n/a	4,598
1950	20,725	53	67	1,368	3	0	22,216	22,706	n/a	4,636
1951	23,605	196	19	1,184	5	0	25,009	22,695	n/a	4,709
1952	24,034	663	156	967	4	0	25,825	23,187	n/a	4,812
1953	25,318	598	28	935	2	0	26,880	22,030	n/a	4,894
1954	24,888	44	143	808	1	0	25,885	21,713	n/a	4,985
1955	24,391	394	108	1,585	29	0	26,507	21,690	n/a	5,008
1956	24,610	305	50	1,665	70	0	26,699	21,949	n/a	5,066
1957	23,719	519	55	1,424	66	0	25,784	22,781	n/a	5,146
1958	26,252	95	64	1,296	49	0	27,755	20,534	n/a	5,234
1959	26,607	41	458	1,590	75	0	28,771	19,456	n/a	5,311
1960	26,984	400	33	1,847	74	0	29,338	17,767	n/a	5,398
1961	28,722	159	130	2,300	51	0	31,362	16,889	n/a	5,585
1962	30,478	342	38	2,903	110	0	33,871	15,978	n/a	5,567
1963	33,582	11	63	2,600	162	0	36,418	15,513	n/a	5,578
1964	36,506	538	186	2,606	94	0	39,930	15,388	n/a	5,405
1965	40,478	290	137	2,248	187	0	43,340	13,733	n/a	5,575
1966	43,655	661	173	2,495	193	0	47,177	13,159	n/a	6,317
1967	48,980	170	141	2,576	164	0	52,031	11,982	n/a	6,784

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Table 6B.—*continued*

Period	Factors supplying reserve funds									
	Federal Reserve Bank credit outstanding							Gold stock[6]	Special drawing rights certificate account	Treasury currency outstanding[7]
	Securities held outright[1]	Repurchase agreements[2]	Loans	Float[3]	All other[4]	Other Federal Reserve assets[5]	Total			
1968	52,937	0	186	3,443	58	0	56,624	10,367	n/a	6,795
1969	57,154	0	183	3,440	64	2,743	63,584	10,367	n/a	6,852
1970	62,142	0	335	4,261	57	1,123	67,918	10,732	400	7,147
1971	69,481	1,323	39	4,343	261	1,068	76,515	10,132	400	7,710
1972	71,119	111	1,981	3,974	106	1,260	78,551	10,410	400	8,313
1973	80,395	100	1,258	3,099	68	1,152	86,072	11,567	400	8,716
1974	84,760	954	299	2,001	999	3,195	92,208	11,652	400	9,253
1975	92,789	1,335	211	3,688	1,126	3,312	102,461	11,599	500	10,218
1976	100,062	4,031	25	2,601	991	3,182	110,892	11,598	1,200	10,810
1977	108,922	2,352	265	3,810	954	2,442	118,745	11,718	1,250	11,331
1978	117,374	1,217	1,174	6,432	587	4,543	131,327	11,671	1,300	11,831
1979	124,507	1,660	1,454	6,767	704	5,613	140,705	11,172	1,800	13,083
1980	128,038	2,554	1,809	4,467	776	8,739	146,383	11,160	2,518	13,427
1981	136,863	3,485	1,601	1,762	195	9,230	153,136	11,151	3,318	13,687
1982	144,544	4,293	717	2,735	1,480	9,890	163,659	11,148	4,618	13,786
1983	159,203	1,592	918	1,605	418	8,728	172,464	11,121	4,618	15,732

Note: For a description of figures and discussion of their significance, see *Banking and Monetary Statistics*, 1941–1970 (Board of Governors of the Federal Reserve System, 1976), pp. 507–23. Components may not sum to totals because of rounding.

1 In 1969 and thereafter, includes securities loaned—fully guaranteed by U.S. government securities pledged with Federal Reserve Banks—and excludes securities sold and scheduled to be bought back under matched sale–purchase transactions. On September 29, 1971, and thereafter, includes federal agency issues bought outright.

2 On December 1, 1966, and thereafter, includes federal agency obligations held under repurchase agreements.

3 In 1960 and thereafter, figures reflect a minor change in concept; refer to *Federal Reserve Bulletin*, vol. 47 (February 1961), p. 164.

4 Principally acceptances and, until August 21, 1959, industrial loans, the authority for which expired on that date.

5 For the period before April 16, 1969, includes the total of Federal Reserve capital paid in, surplus, other capital accounts, and other liabilities and accrued dividends, less the sum of bank premises and other assets, and is reported as "Other Federal Reserve accounts"; thereafter, "Other Federal Reserve assets'' and "Other Federal Reserve liabilities and capital'' are shown separately.

6 Before January 30, 1934, includes gold held in Federal Reserve Banks and in circulation.

7 Includes currency and coin (other than gold) issued directly by the Treasury. The largest components are fractional and dollar coins. For details refer to "U.S. Currency and Coin Outstanding and in Circulation,'' *Treasury Bulletin*.

n/a Not applicable.

Table 6B. Reserves of depository institutions, Federal Reserve Bank credit, and related items, year-end 1918–1983—*continued*
Millions of dollars

Period	Factors absorbing reserve funds								Member bank reserves[9]			
	Currency in circulation	Treasury cash holdings[8]	Deposits with Federal Reserve Banks, other than reserve balances			Other Federal Reserve accounts[5]	Required clearing balances	Other Federal Reserve liabilities and capital[5]	With Federal Reserve Banks	Currency and coin[10]	Required[11]	Excess[11,12]
			Treasury	Foreign	Other							
1918	4,951	288	51	96	25	118	0	0	1,636	n/a	1,585	51
1919	5,091	385	31	73	28	208	0	0	1,890	n/a	1,822	68
1920	5,325	218	57	5	18	298	0	0	1,781	n/a	n/a	n/a
1921	4,403	214	96	12	15	285	0	0	1,753	n/a	1,654	99
1922	4,530	225	11	3	26	276	0	0	1,934	n/a	n/a	n/a
1923	4,757	213	38	4	19	275	0	0	1,898	n/a	1,884	14
1924	4,760	211	51	19	20	258	0	0	2,220	n/a	2,161	59
1925	4,817	203	16	8	21	272	0	0	2,212	n/a	2,256	-44
1926	4,808	201	17	46	19	293	0	0	2,194	n/a	2,250	-56
1927	4,716	208	18	5	21	301	0	0	2,487	n/a	2,424	63
1928	4,686	202	23	6	21	348	0	0	2,389	n/a	2,430	-41
1929	4,578	216	29	6	24	393	0	0	2,355	n/a	2,428	-73
1930	4,603	211	19	6	22	375	0	0	2,471	n/a	2,375	96
1931	5,360	222	54	79	31	354	0	0	1,961	n/a	1,994	-33
1932	5,388	272	8	19	24	355	0	0	2,509	n/a	1,933	576
1933	5,519	284	3	4	128	360	0	0	2,729	n/a	1,870	859
1934	5,536	3,029	121	20	169	241	0	0	4,096	n/a	2,282	1,814
1935	5,882	2,566	544	29	226	253	0	0	5,587	n/a	2,743	2,844
1936	6,543	2,376	244	99	160	261	0	0	6,606	n/a	4,622	1,984
1937	6,550	3,619	142	172	235	263	0	0	7,027	n/a	5,815	1,212
1938	6,856	2,706	923	199	242	260	0	0	8,724	n/a	5,519	3,205
1939	7,598	2,409	634	397	256	251	0	0	11,653	n/a	6,444	5,209
1940	8,732	2,213	368	1,133	599	284	0	0	14,026	n/a	7,411	6,615
1941	11,160	2,215	867	774	586	291	0	0	12,450	n/a	9,365	3,085
1942	15,410	2,193	799	793	485	256	0	0	13,117	n/a	11,129	1,988
1943	20,449	2,303	579	1,360	356	339	0	0	12,886	n/a	11,650	1,236
1944	25,307	2,375	440	1,204	394	402	0	0	14,373	n/a	12,748	1,625
1945	28,515	2,287	977	862	446	495	0	0	15,915	n/a	14,457	1,458
1946	28,952	2,272	393	508	314	607	0	0	16,139	n/a	15,577	562
1947	28,868	1,336	870	392	569	563	0	0	17,899	n/a	16,400	1,499
1948	28,224	1,325	1123	642	547	590	0	0	20,479	n/a	19,277	1,202
1949	27,600	1,312	821	767	750	706	0	0	16,568	n/a	15,550	1,018
1950	27,741	1,293	668	895	565	714	0	0	17,681	n/a	16,509	1,172
1951	29,206	1,270	247	526	363	746	0	0	20,056	n/a	19,667	389
1952	30,433	1,270	389	550	455	777	0	0	19,950	n/a	20,520	-570
1953	30,781	761	346	423	493	839	0	0	20,160	n/a	19,397	763
1954	30,509	796	563	490	441	907	0	0	18,876	n/a	18,618	258
1955	31,158	767	394	402	554	925	0	0	19,005	n/a	18,903	102
1956	31,790	775	441	322	426	901	0	0	19,059	n/a	19,089	-30
1957	31,834	761	481	356	246	998	0	0	19,034	n/a	19,091	-57
1958	32,193	683	358	272	391	1,122	0	0	18,504	n/a	18,574	-70
1959	32,591	391	504	345	694	841	0	0	18,174	310	18,619	-135
1960	32,869	377	485	217	533	941	0	0	17,081	2,544	18,988	637
1961	33,918	422	465	279	320	1,044	0	0	17,387	2,823	20,114	96
1962	35,338	380	597	247	393	1,007	0	0	17,454	3,262	20,071	645
1963	37,692	361	880	171	291	1,065	0	0	17,049	4,099	20,677	471
1964	39,619	612	820	229	321	1,036	0	0	18,086	4,151	21,663	574
1965	42,056	760	668	150	355	211	0	0	18,447	4,163	22,848	-238
1966	44,663	1,176	416	174	588	-147	0	0	19,779	4,310	24,321	-232
1967	47,226	1,344	1,123	135	653	-773	0	0	21,092	4,631	25,905	-182

(continued on next page)

Table 6B.—*continued*

Period	Factors absorbing reserve funds								Member bank reserves[9]			
	Currency in circulation	Treasury cash holdings[8]	Deposits with Federal Reserve Banks, other than reserve balances			Other Federal Reserve accounts[5]	Required clearing balances	Other Federal Reserve liabilities and capital[5]	With Federal Reserve Banks	Currency and coin[10]	Required[11]	Excess[11,12]
			Treasury	Foreign	Other							
1968	50,961	695	703	216	747	-1,353	0	0	21,818	4,921	27,439	-700
1969	53,950	596	1,312	134	807	0	0	1,919	22,085	5,187	28,173	-901
1970	57,093	431	1,156	148	1,233	0	0	1,986	24,150	5,423	30,033	-460
1971	61,068	460	2,020	294	999	0	0	2,131	27,788	5,743	32,496	1,035
1972	66,516	345	1,855	325	840	0	0	2,143	25,647	6,216	32,044	98
1973	72,497	317	2,542	251	1,149[13]	0	0	2,669	27,060	6,781	35,268	-1,360
1974	79,743	185	3,113	418	1,275[13]	0	0	2,935	25,843	7,370	37,011	-3,798
1975	86,547	483	7,285	353	1,090	0	0	2,968	26,052	8,036	35,197	-1,103[14]
1976	93,717	460	10,393	352	1,357	0	0	3,063	25,158	8,628	35,461	-1,535
1977	103,811	392	7,114	379	1,187	0	0	3,292	26,870	9,421	37,615	-1,265
1978	114,645	240	4,196	368	1,256	0	0	4,275	31,152	10,538	42,694	-893
1979	125,600	494	4,075	429	1,412	0	0	4,957	29,792	11,429	44,217	-2,835
1980	136,829	441	3,062	411	617	0	0	4,671	27,456	13,654	40,558	675
1981	144,774	443	4,301	505	781	0	117	5,261	25,111	15,576	42,145	-1,442
1982	154,908	429	5,033	328	1,033	0	436	4,990	26,053	16,666	41,391	1,328
1983	171,935	479	3,661	191	851	0	1,013	5,392	20,413	17,821	39,179	-945

8 Coin and paper currency held by the Treasury, as well as any gold in excess of the gold certificates issued to the Reserve Bank.

9 In November 1979 and thereafter, includes reserves of member banks, Edge Act corporations, and U.S. agencies and branches of foreign banks. On November 13, 1980, and thereafter, includes reserves of all depository institutions.

10 Between December 1, 1959, and November 23, 1960, part was allowed as reserves; thereafter, all was allowed.

11 Estimated through 1958. Before 1929, data were available only on call dates (in 1920 and 1922 the call date was December 29). Since September 12, 1968, the amount has been based on close-of-business figures for the reserve period two weeks before the report date.

12 For the week ending November 15, 1972, and thereafter, includes $450 million of reserve deficiencies on which Federal Reserve Banks are allowed to waive penalties for a transition period in connection with bank adaptation to Regulation J as amended, effective November 9, 1972. Allowable deficiencies are as follows (beginning with first statement week of quarter, in millions): 1973—Q1, $279; Q2, $172; Q3, $112; Q4, $84; 1974—Q1, $67; Q2, $58. The transition period ended with the second quarter of 1974.

13 For the period before July 1973, includes certain deposits of domestic nonmember banks and foreign-owned banking institutions held with member banks and redeposited in full with Federal Reserve Banks in connection with voluntary participation by nonmember institutions in the Federal Reserve System program of credit restraint. As of December 12, 1974, the amount of voluntary nonmember bank and foreign-agency and branch deposits at Federal Reserve Banks that are associated with marginal reserves is no longer reported. However, two amounts are reported: (1) deposits voluntarily held as reserves by agencies and branches of foreign banks operating in the United States and (2) Eurodollar liabilities.

14 Adjusted to include waivers of penalties for reserve deficiencies, in accordance with change in Board policy, effective November 19, 1975.

n/a Not applicable.

Table 7. Principal assets and liabilities of insured commercial banks, by class of bank, June 30, 2015 and 2014
Millions of dollars, except as noted

Item	Total	Member banks			Nonmember banks
		Total	National	State	
2015					
Assets					
Loans and investments	10,309,409	8,304,926	6,712,155	1,592,771	2,004,483
Loans, gross	7,327,089	5,749,028	4,686,550	1,062,478	1,578,061
Net	7,325,477	5,748,003	4,685,758	1,062,245	1,577,474
Investments	2,982,321	2,555,899	2,025,605	530,294	426,422
U.S. Treasury and federal agency securities	567,556	475,103	367,368	107,735	92,453
Other	2,414,767	2,080,797	1,658,238	422,559	333,970
Cash assets, total	1,470,967	1,323,091	1,025,952	297,139	147,876
Liabilities					
Deposits, total	9,715,920	7,917,604	6,366,937	1,550,667	1,798,316
Interbank	176,803	153,815	110,950	42,865	22,988
Other transactions	1,644,207	1,339,882	976,521	363,361	304,325
Other nontransactions	7,894,910	6,423,907	5,279,466	1,144,441	1,471,003
Equity capital	1,638,328	1,360,460	1,117,298	243,162	277,868
Number of banks	5,463	1,843	1,026	817	3,620
2014					
Assets					
Loans and investments	9,670,341	7,782,728	6,321,059	1,461,669	1,887,613
Loans, gross	6,853,639	5,389,058	4,422,864	966,194	1,464,581
Net	6,852,378	5,388,378	4,422,392	965,986	1,464,000
Investments	2,816,701	2,393,670	1,898,195	495,475	423,031
U.S. Treasury and federal agency securities	447,422	357,483	276,926	80,557	89,939
Other	2,369,280	2,036,187	1,621,269	414,918	333,093
Cash assets, total	1,495,224	1,344,453	1,028,672	315,781	150,771
Liabilities					
Deposits, total	9,195,662	7,490,342	6,078,366	1,411,976	1,705,320
Interbank	179,607	156,756	122,673	34,083	22,851
Other transactions	1,585,334	1,306,779	926,377	380,402	278,555
Other nontransactions	7,430,720	6,026,807	5,029,316	997,491	1,403,913
Equity capital	1,572,070	1,307,811	1,077,877	229,934	264,259
Number of banks	5,714	1,935	1,109	826	3,779

Note: Includes U.S.-insured commercial banks located in the United States but not U.S.-insured commercial banks operating in U.S. territories or possessions. Data are domestic assets and liabilities (except for those components reported on a consolidated basis only). Components may not sum to totals because of rounding. Data for 2014 have been revised.

Table 8. Initial margin requirements under Regulations T, U, and X

Percent of market value

Effective date	Margin stocks	Convertible bonds	Short sales, T only[1]
1934, Oct. 1	25–45	n/a	n/a
1936, Feb. 1	25–55	n/a	n/a
1936, Apr. 1	55	n/a	n/a
1937, Nov. 1	40	n/a	50
1945, Feb. 5	50	n/a	50
1945, July 5	75	n/a	75
1946, Jan. 21	100	n/a	100
1947, Feb. 1	75	n/a	75
1949, Mar. 3	50	n/a	50
1951, Jan. 17	75	n/a	75
1953, Feb. 20	50	n/a	50
1955, Jan. 4	60	n/a	60
1955, Apr. 23	70	n/a	70
1958, Jan. 16	50	n/a	50
1958, Aug. 5	70	n/a	70
1958, Oct. 16	90	n/a	90
1960, July 28	70	n/a	70
1962, July 10	50	n/a	50
1963, Nov. 6	70	n/a	70
1968, Mar. 11	70	50	70
1968, June 8	80	60	80
1970, May 6	65	50	65
1971, Dec. 6	55	50	55
1972, Nov. 24	65	50	65
1974, Jan. 3	50	50	50

Note: These regulations, adopted by the Board of Governors pursuant to the Securities Exchange Act of 1934, limit the amount of credit that may be extended for the purpose of purchasing or carrying margin securities (as defined in the regulations) when the loan is collateralized by such securities. The margin requirement, expressed as a percentage, is the difference between the market value of the securities being purchased or carried (100 percent) and the maximum loan value of the collateral as prescribed by the Board. Regulation T was adopted effective October 1, 1934; Regulation U, effective May 1, 1936; and Regulation X, effective November 1, 1971. The former Regulation G, which was adopted effective March 11, 1968, was merged into Regulation U, effective April 1, 1998.

[1] From October 1, 1934, to October 31, 1937, the requirement was the margin "customarily required" by the brokers and dealers.

n/a Not applicable.

Table 9A. Statement of condition of the Federal Reserve Banks, by Bank, December 31, 2015 and 2014
Millions of dollars

Item	Total		Boston		New York		Philadelphia		Cleveland		Richmond	
	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014
Assets												
Gold certificates	11,037	11,037	347	352	3,709	4,125	340	338	505	464	783	824
Special drawing rights certificates	5,200	5,200	196	196	1,818	1,818	210	210	237	237	412	412
Coin	1,890	1,873	45	30	72	79	129	122	135	120	301	307
Loans and securities												
Primary, secondary, and seasonal loans	115	145	0	11	0	4	0	7	0	0	0	1
Treasury securities, bought outright[1]	2,461,552	2,461,363	62,399	49,789	1,477,698	1,510,695	61,222	58,967	59,182	53,740	133,696	137,567
Government-sponsored enterprise debt securities, bought outright[1]	32,944	38,677	835	782	19,777	23,739	819	927	792	844	1,789	2,162
Federal agency and government-sponsored enterprise mortgage-backed securities, bought outright[2]	1,747,461	1,736,833	44,297	35,133	1,049,022	1,066,005	43,462	41,609	42,013	37,921	94,911	97,073
Unamortized premiums on securities held outright[3]	189,486	206,835	4,804	4,184	113,752	126,948	4,713	4,955	4,556	4,516	10,292	11,560
Unamortized discounts on securities held outright[3]	-16,570	-18,394	-420	-372	-9,947	-11,290	-411	-441	-399	-402	-900	-1,028
Total loans and securities	4,414,988	4,425,459	111,915	89,527	2,650,302	2,716,101	109,805	106,024	106,144	96,619	239,788	247,335
Accrued interest receivable - System Open Market Account	25,418	25,644	646	521	15,241	15,715	634	619	615	565	1,392	1,446
Net portfolio holdings of consolidated variable interest entities[4]	1,778	1,811	n/a	n/a	1,778	1,811	n/a	n/a	n/a	n/a	n/a	n/a
Foreign currency denominated investments[5]	19,567	20,900	887	951	6,306	6,720	1,093	1,571	1,525	1,662	4,490	4,358
Central bank liquidity swaps[6]	997	1,528	45	70	321	491	56	115	78	122	229	319
Other SOMA assets	14	29	0	1	9	18	0	1	0	1	1	2
Other assets												
Items in process of collection	210	86	0	0	0	0	0	0	0	0	0	0
Bank premises	2,240	2,263	125	124	438	437	75	76	106	110	212	220
Deferred asset (accrued liability)-remittances to the Treasury	0	667	0	0	0	923	0	0	0	5	0	0
All other assets[7]	1,426	1,277	68	66	304	341	41	43	45	45	245	244
Interdistrict settlement account	0	0	-3,804	49,233	-265,063	-187,283	17,050	-4,108	37,004	38,162	29,869	-3,289
Total assets	**4,484,765**	**4,497,774**	**110,470**	**141,071**	**2,415,235**	**2,561,296**	**129,433**	**105,011**	**146,394**	**138,112**	**277,722**	**252,178**
Liabilities												
Federal Reserve notes outstanding	1,549,750	1,469,554	49,477	45,956	498,609	475,290	49,312	46,452	82,794	68,649	106,647	103,087

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Table 9A.—*continued*

Item	Total		Boston		New York		Philadelphia		Cleveland		Richmond	
	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014
Less: Notes held by Federal Reserve Bank	170,199	170,829	4,871	4,688	64,415	56,971	5,358	4,940	8,137	7,811	10,988	11,152
Federal Reserve notes outstanding, net	1,379,551	1,298,725	44,606	41,268	434,194	418,319	43,954	41,512	74,657	60,838	95,659	91,935
Securities sold under agreements to repurchase[8]	712,401	509,837	18,059	10,313	427,663	312,919	17,719	12,214	17,128	11,132	38,693	28,495
Deposits												
Depository institutions	1,977,166	2,377,996	45,875	86,758	1,175,023	1,560,513	65,374	47,897	51,363	61,513	133,840	118,097
Treasury, general account	333,447	223,452	n/a	n/a	333,447	223,452	n/a	n/a	n/a	n/a	n/a	n/a
Foreign, official accounts	5,231	5,242	2	2	5,204	5,214	2	3	3	3	9	8
Other[9]	31,301	20,318	2	2	23,738	20,177	2	25	0	0	131	92
Total deposits	2,347,145	2,627,008	45,879	86,762	1,537,412	1,809,356	65,378	47,925	51,366	61,516	133,980	118,197
Other liabilities												
Accrued remittances to Treasury[10]	1,953	0	56	16	1,023	0	56	7	80	0	183	28
Deferred credit items	246	641	0	0	2	3	0	0	0	0	0	0
Consolidated variable interest entities	57	127	n/a	n/a	57	127	n/a	n/a	n/a	n/a	n/a	n/a
All other liabilities[11]	3,904	4,292	124	120	1,851	2,156	152	159	153	170	395	409
Total liabilities	**4,445,257**	**4,440,630**	**108,724**	**138,479**	**2,402,202**	**2,542,880**	**127,259**	**101,817**	**143,384**	**133,656**	**268,910**	**239,064**
Capital accounts												
Capital paid-in	29,508	28,572	1,304	1,296	9,734	9,208	1,624	1,597	2,248	2,228	6,582	6,557
Surplus (including accumulated other comprehensive loss)	10,000	28,572	442	1,296	3,299	9,208	550	1,597	762	2,228	2,230	6,557
Total liabilities and capital accounts	**4,484,765**	**4,497,774**	**110,470**	**141,071**	**2,415,235**	**2,561,296**	**129,433**	**105,011**	**146,394**	**138,112**	**277,722**	**252,178**

Note: Components may not sum to totals because of rounding.

1 Par value. Includes securities loaned—fully collateralized by U.S. Treasury securities, other investment-grade securities, and collateral eligible for tri-party repurchase agreements pledged with Federal Reserve Banks.

2 The par amount shown is the remaining principal balance of the securities.

3 Reflects the premium or discount, which is the difference between the purchase price and the face value of the securities that has not been amortized. For U.S. Treasury and Federal agency debt securities, amortization is on a straight-line basis. For mortgage-backed securities (MBS), amortization is on an effective-interest basis.

4 The Federal Reserve Bank of New York is the primary beneficiary of Maiden Lane LLC, and, as a result, the accounts and results of operations of Maiden Lane LLC are included in the combined financial statements of the Federal Reserve Banks.

5 Valued daily at market exchange rates.

6 Dollar value of foreign currency held under these agreements valued at the exchange rate to be used when the foreign currency is returned to the foreign central bank. This exchange rate equals the market exchange rate used when the foreign currency was acquired from the foreign central bank.

7 Includes furniture and equipment and depository institution overdrafts.

8 Contract amount of agreements.

9 Includes deposits of government-sponsored enterprises (GSEs), the Consumer Financial Protection Bureau, international organizations, and designated financial market utilities. These deposits are primarily held by the Federal Reserve Banks of New York and Chicago.

10 Represents the estimated weekly remittances to U.S. Treasury.

11 Includes accrued benefit costs and cash collateral posted by counterparties under commitments to purchase and sell federal agency and GSE MBS.

n/a Not applicable.

Table 9A. Statement of condition of the Federal Reserve Banks, by Bank, December 31, 2015 and 2014—*continued*
Millions of dollars

Item	Atlanta		Chicago		St. Louis		Minneapolis		Kansas City		Dallas		San Francisco	
	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014
Assets														
Gold certificates	1,600	1,349	734	706	299	278	171	173	288	291	891	880	1,370	1,257
Special drawing rights certificates	654	654	424	424	150	150	90	90	153	153	282	282	574	574
Coin	184	208	282	279	31	23	49	45	149	152	196	188	316	320
Loans and securities														
Primary, secondary, and seasonal loans	31	5	9	30	35	0	38	48	2	31	0	0	0	8
Treasury securities, bought outright[1]	138,615	136,063	91,458	100,599	25,670	30,359	14,970	15,084	31,977	32,422	79,295	74,998	285,369	261,080
Government-sponsored enterprise debt securities, bought outright[1]	1,855	2,138	1,224	1,581	344	477	200	237	428	510	1,061	1,179	3,819	4,103
Federal agency and government-sponsored enterprise mortgage-backed securities (MBS), bought outright[2]	98,403	96,011	64,926	70,987	18,223	21,423	10,627	10,644	22,701	22,878	56,291	52,922	202,584	184,228
Unamortized premiums on securities held outright[3]	10,670	11,434	7,040	8,454	1,976	2,551	1,153	1,268	2,461	2,725	6,104	6,302	21,967	21,939
Unamortized discounts on securities held outright[3]	-933	-1,017	-615	-752	-172	-227	-100	-113	-216	-242	-534	-561	-1,921	-1,951
Total loans and securities	248,641	244,634	164,042	180,899	46,076	54,583	26,888	27,168	57,353	58,324	142,217	134,840	511,818	469,407
Accrued interest receivable - System Open Market Account	1,431	1,418	944	1,047	265	316	154	157	330	338	818	780	2,949	2,723
Net portfolio holdings of consolidated variable interest entities[4]	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Foreign currency denominated investments[5]	1,113	1,202	526	577	182	176	82	88	206	220	282	349	2,873	3,024
Central bank liquidity swaps[6]	57	88	27	42	9	13	4	6	11	16	14	26	146	221
Other SOMA assets	1	2	1	1	0	0	0	0	0	0	0	1	2	3
Other assets														
Items in process of collection	210	86	0	0	0	0	0	0	0	0	0	0	0	0
Bank premises	207	212	205	201	118	122	92	96	240	241	227	223	197	201
Deferred asset (accrued liability)-remittances to the Treasury	0	0	0	0	0	0	0	14	0	0	0	0	0	0
All other assets[7]	91	100	63	66	97	80	33	39	62	48	56	62	321	142
Interdistrict settlement account	27,634	13,938	21,637	-923	15,633	-4,483	8,418	3,814	5,535	3,760	32,425	23,691	73,661	67,487
Total assets	**281,823**	**263,891**	**188,885**	**183,319**	**62,860**	**51,258**	**35,981**	**31,690**	**64,327**	**63,543**	**177,408**	**161,322**	**594,227**	**545,359**
Liabilities														
Federal Reserve notes outstanding	218,998	214,198	103,023	101,373	51,721	41,433	26,791	23,220	40,705	38,323	125,620	120,243	196,054	191,329

(continued on next page)

Table 9A.—*continued*

Item	Atlanta		Chicago		St. Louis		Minneapolis		Kansas City		Dallas		San Francisco	
	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014
Less: Notes held by Federal Reserve Bank	20,469	22,254	9,480	10,427	4,449	4,734	2,512	3,077	4,366	4,537	12,739	14,760	22,417	25,476
Federal Reserve notes outstanding, net	198,529	191,944	93,543	90,946	47,272	36,699	24,279	20,143	36,339	33,786	112,881	105,483	173,637	165,853
Securities sold under agreements to repurchase[8]	40,117	28,183	26,469	20,838	7,429	6,288	4,333	3,124	9,254	6,716	22,949	15,535	82,589	54,079
Deposits														
Depository institutions	40,417	39,629	60,295	69,727	7,506	7,610	6,982	7,978	18,185	22,332	40,767	39,292	331,540	316,649
Treasury, general account	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Foreign, official accounts	2	2	1	1	0	0	0	0	0	0	1	1	6	6
Other[9]	7	6	7,225	12	97	0	1	0	12	1	65	1	24	2
Total deposits	40,426	39,637	67,521	69,740	7,603	7,610	6,983	7,978	18,197	22,333	40,833	39,294	331,570	316,657
Other liabilities														
Acrued remittances to Treasury[10]	150	51	75	24	32	12	18	0	41	3	67	19	172	114
Deferred credit items	163	556	0	0	0	0	82	82	0	0	0	0	0	0
Consolidated variable interest entities	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
All other liabilities[11]	244	268	218	237	118	117	117	123	101	103	177	167	248	264
Total liabilities	**279,629**	**260,639**	**187,826**	**181,785**	**62,454**	**50,726**	**35,812**	**31,450**	**63,932**	**62,941**	**176,907**	**160,498**	**588,216**	**536,967**
Capital accounts														
Capital paid-in	1,639	1,626	791	767	303	266	126	120	295	301	374	412	4,490	4,196
Surplus (including accumulated other comprehensive loss)	555	1,626	268	767	103	266	43	120	100	301	127	412	1,521	4,196
Total liabilities and capital accounts	**281,823**	**263,891**	**188,885**	**183,319**	**62,860**	**51,258**	**35,981**	**31,690**	**64,327**	**63,543**	**177,408**	**161,322**	**594,227**	**545,359**

Note: Components may not sum to totals because of rounding.

1 Par value. Includes securities loaned—fully collateralized by U.S. Treasury securities, other investment-grade securities, and collateral eligible for tri-party repurchase agreements pledged with Federal Reserve Banks.

2 The par amount shown is the remaining principal balance of the securities.

3 Reflects the premium or discount, which is the difference between the purchase price and the face value of the securities that has not been amortized. For U.S. Treasury and Federal agency debt securities, amortization is on a straight-line basis. For mortgage-backed securities (MBS), amortization is on an effective-interest basis.

4 The Federal Reserve Bank of New York is the primary beneficiary of Maiden Lane LLC, and, as a result, the accounts and results of operations of Maiden Lane LLC are included in the combined financial statements of the Federal Reserve Banks.

5 Valued daily at market exchange rates.

6 Dollar value of foreign currency held under these agreements valued at the exchange rate to be used when the foreign currency is returned to the foreign central bank. This exchange rate equals the market exchange rate used when the foreign currency was acquired from the foreign central bank.

7 Includes furniture and equipment and depository institution overdrafts.

8 Contract amount of agreements.

9 Includes deposits of government-sponsored enterprises (GSEs), the Consumer Financial Protection Bureau, international organizations, and designated financial market utilities. These deposits are primarily held by the Federal Reserve Banks of New York and Chicago.

10 Represents the estimated weekly remittances to U.S. Treasury.

11 Includes accrued benefit costs and cash collateral posted by counterparties under commitments to purchase and sell federal agency and GSE MBS.

n/a Not applicable.

Table 9B. Statement of condition of the Federal Reserve Banks, December 31, 2015 and 2014
Supplemental information—collateral held against Federal Reserve notes: Federal Reserve agents' accounts
Millions of dollars

Item	2015	2014
Federal Reserve notes outstanding	1,549,750	1,469,554
Less: Notes held by Federal Reserve Banks not subject to collateralization	170,199	170,829
Collateralized Federal Reserve notes	**1,379,551**	**1,298,725**
Collateral for Federal Reserve notes		
Gold certificates	11,037	11,037
Special drawing rights certificates	5,200	5,200
U.S. Treasury securities[1]	1,363,314	1,282,488
Total collateral	**1,379,551**	**1,298,725**

1 Face value. Includes compensation to adjust for the effect of inflation on the original face value of inflation-indexed securities.

Table 10. Income and expenses of the Federal Reserve Banks, by Bank, 2015
Thousands of dollars

Item	Total	Boston	New York	Philadelphia	Cleveland	Richmond	Atlanta	Chicago	St. Louis	Minneapolis	Kansas City	Dallas	San Francisco
Current income													
Interest income													
Primary, secondary, and seasonal loans	349	7	12	2	7	2	34	48	46	118	16	10	45
Treasury securities	63,317,284	1,519,488	38,234,895	1,559,521	1,485,388	3,465,341	3,548,272	2,414,627	692,149	385,851	825,563	2,010,532	7,175,657
Government-sponsored enterprise debt securities, net	1,329,438	31,627	803,523	32,695	31,069	72,845	74,445	50,899	14,636	8,104	17,344	42,120	150,131
Federal agency and government-sponsored enterprise mortgage-backed securities, net	48,931,208	1,165,286	29,571,240	1,203,587	1,144,032	2,680,755	2,740,275	1,872,516	538,225	298,265	638,308	1,550,676	5,528,044
Foreign currency denominated investments, net	30,420	1,380	9,801	1,776	2,378	6,899	1,733	820	280	128	320	447	4,459
Central bank liquidity swaps[1]	1,417	64	456	83	111	321	81	38	13	6	15	21	208
Total interest income	113,610,116	2,717,852	68,619,927	2,797,664	2,662,985	6,226,163	6,364,840	4,338,948	1,245,349	692,472	1,481,566	3,603,806	12,858,544
Income from priced services	429,108	n/a	103,975	n/a	n/a	n/a	242,109	83,024	n/a	n/a	n/a	n/a	n/a
Compensation received for services provided[2]	175,324	14,762	1,661	2,598	2,506	16,790	768	24,446	2,511	61,663	31,720	7,206	8,692
Securities lending fees	8,127	195	4,909	200	190	445	455	310	89	50	106	258	920
Other income	11,001	197	7,669	181	188	422	616	310	106	63	107	256	885
Total other income	623,560	15,154	118,214	2,979	2,884	17,657	243,948	108,090	2,706	61,776	31,933	7,720	10,497
Total current income	**114,233,676**	**2,733,006**	**68,738,141**	**2,800,643**	**2,665,869**	**6,243,820**	**6,608,788**	**4,447,038**	**1,248,055**	**754,248**	**1,513,499**	**3,611,526**	**12,869,041**
Net expenses													
Personnel													
Salaries and other personnel expenses	2,219,098	136,911	515,367	98,708	98,130	331,036	160,056	173,641	131,480	103,513	150,195	113,307	206,753
Retirement and other benefits	705,923	35,816	159,260	32,894	35,044	103,952	60,399	55,822	37,587	34,853	43,400	42,566	64,329
Administrative													
Fees	200,505	4,390	39,220	9,798	4,480	85,770	15,268	9,451	13,156	4,140	3,654	2,215	8,962
Travel	93,593	4,421	13,558	3,303	5,582	14,365	8,112	10,430	5,561	3,592	7,468	5,264	11,938
Postage and other shipping costs	13,420	234	1,185	232	1,325	565	2,465	238	703	328	1,006	2,290	2,850
Communications	45,834	1,131	5,781	574	567	29,597	1,382	2,119	1,013	948	700	890	1,132
Materials and supplies	65,197	3,548	22,530	6,439	2,426	5,816	4,798	4,688	2,639	1,589	3,072	3,345	4,308
Building													
Taxes on real estate	51,134	6,757	15,864	999	1,811	2,458	3,218	4,135	727	3,578	3,228	3,898	4,462
Property depreciation	139,341	13,859	28,823	6,733	6,949	14,779	10,203	15,732	8,007	4,385	8,642	9,196	12,032
Utilities	38,507	4,153	9,608	1,657	1,506	4,233	3,127	2,225	1,731	1,784	2,234	2,848	3,401
Rent	33,534	292	3,100	901	990	22,854	294	973	2,150	201	758	813	208
Other building	63,484	5,690	13,068	5,354	3,360	5,790	5,032	7,314	2,446	2,683	1,839	5,898	5,010
Equipment/software													
Purchases	33,123	2,002	5,592	1,345	1,763	6,964	2,065	2,115	2,208	1,688	2,977	2,112	2,292
Rentals	3,790	311	1,132	184	284	858	286	603	22	67	5	23	15
Depreciation	78,124	4,911	5,603	2,375	2,169	42,171	3,541	3,492	1,761	1,507	3,285	2,800	4,509
Repairs and maintenance	66,555	5,309	5,518	1,829	2,088	28,013	5,544	3,729	1,613	1,288	1,946	3,628	6,049
Software	205,074	9,027	35,338	10,128	7,243	69,212	15,348	6,669	10,182	8,632	11,484	10,176	11,635
Other expenses													
Compensation paid for service costs incurred[2]	175,324	n/a	40,664	n/a	n/a	n/a	123,588	11,072	n/a	n/a	n/a	n/a	n/a
Other expenses	74,193	13,029	87,488	21,607	8,209	-353,123	27,646	65,143	106,656	27,920	18,987	25,220	25,410
Recoveries	-178,562	-19,975	-22,785	-5,166	-6,490	-58,506	-14,619	-10,559	-4,446	-2,939	-8,015	-15,439	-9,622

(continued on next page)

Table 10.—*continued*

Item	Total	Boston	New York	Philadelphia	Cleveland	Richmond	Atlanta	Chicago	St. Louis	Minneapolis	Kansas City	Dallas	San Francisco
Expenses capitalized[3]	-84,057	-4,688	-26,786	-3,767	-7,231	3,162	-224	-3,832	-3,848	-376	-11,890	-1,618	-22,958
Total operating expenses before pension expense and reimbursements	**4,043,134**	**227,128**	**959,128**	**196,127**	**170,205**	**359,966**	**437,529**	**365,200**	**321,348**	**199,381**	**244,975**	**219,432**	**342,715**
Net periodic pension expense[4]	562,562	2,240	541,916	798	2,800	2,840	1,304	2,176	1,829	838	1,551	766	3,505
Reimbursements	-650,490	-46,501	-169,289	-34,168	-34,209	-42,221	-23,897	-5,747	-174,951	-32,939	-49,671	-19,252	-17,645
Operating expenses	3,955,206	182,867	1,331,755	162,757	138,796	320,585	414,936	361,629	148,226	167,280	196,855	200,946	328,575
Interest expense on securities sold under agreements to repurchase	247,733	5,995	149,466	6,111	5,833	13,543	13,893	9,411	2,690	1,509	3,228	7,883	28,171
Interest on reserves[5]	6,846,148	165,566	4,608,535	159,473	133,437	400,826	108,615	190,884	22,433	18,307	55,084	107,457	875,530
Interest on term deposits[6]	89,205	69	48,895	14,394	5,249	592	230	3,707	21	13	1,209	567	14,258
Other expenses	1,664	40	1,003	41	39	91	93	63	18	10	22	53	190
Net expenses	11,139,956	354,537	6,139,654	342,776	283,354	735,637	537,767	565,694	173,388	187,119	256,398	316,906	1,246,724
Current net income	103,093,720	2,378,469	62,598,487	2,457,867	2,382,515	5,508,183	6,071,021	3,881,344	1,074,667	567,129	1,257,101	3,294,620	11,622,317
Additions to (+) and deductions from (-) current net income													
Profit on sales of federal agency and government-sponsored enterprise mortgage-backed securities	43,295	930	26,431	1,047	968	2,403	2,404	1,730	514	265	568	1,338	4,697
Foreign currency translation gains (losses)	-1,382,100	-62,766	-444,913	-90,524	-108,832	-302,758	-79,056	-37,642	-12,248	-5,823	-14,543	-21,505	-201,490
Net income from consolidated variable interest entities[7]	36,383	n/a	36,383	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Other additions	183	0	121	1	1	3	7	2	0	1	0	45	2
Other deductions	-3,274	0	-2,861	4	-3	-192	-45	89	-68	6	-10	71	-267
Net deductions to (-) current net income	-1,305,513	-61,836	-384,839	-89,472	-107,866	-300,544	-76,690	-35,821	-11,802	-5,551	-13,985	-20,051	-197,058
Cost of unreimbursed Treasury services	2	n/a	2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Assessments by Board													
Board expenditures[8]	705,000	31,717	228,891	39,996	54,599	160,345	39,896	19,030	6,702	3,020	7,424	10,285	103,095
Cost of currency	689,288	29,535	128,174	31,953	40,936	64,790	101,412	60,977	20,792	14,230	21,843	61,691	112,955
Consumer Financial Protection Bureau[9]	489,700	21,907	159,647	27,356	37,773	110,845	27,693	13,242	4,692	2,093	5,165	7,192	72,095
Assessments by the Board of Governors	1,883,988	83,159	516,712	99,305	133,308	335,980	169,001	93,249	32,186	19,343	34,432	79,168	288,145
Net income before providing for remittances to the Treasury	99,904,217	2,233,474	61,696,936	2,269,090	2,141,341	4,871,659	5,825,330	3,752,274	1,030,679	542,235	1,208,684	3,195,401	11,137,114
Earnings remittances to the Treasury													
Interest on Federal Reserve notes	91,143,493	1,988,610	56,984,653	1,993,390	1,831,749	4,112,024	5,329,227	3,465,831	919,199	494,433	1,105,554	2,941,276	9,977,548
Required by the Federal Reserve Act, as amended by the FAST Act	25,955,921	1,021,330	10,316,180	1,234,149	1,658,534	4,714,818	1,487,676	759,602	257,786	124,893	291,866	503,856	3,585,232
Total earnings remittances to the Treasury	117,099,414	3,009,940	67,300,833	3,227,539	3,490,283	8,826,842	6,816,903	4,225,433	1,176,985	619,326	1,397,420	3,445,132	13,562,780

(continued on next page)

Table 10.—*continued*

Item	Total	Boston	New York	Philadelphia	Cleveland	Richmond	Atlanta	Chicago	St. Louis	Minneapolis	Kansas City	Dallas	San Francisco
Net loss after providing for remittances to the Treasury	-17,195,197	-776,466	-5,603,897	-958,449	-1,348,942	-3,955,183	-991,573	-473,159	-146,306	-77,091	-188,736	-249,731	-2,425,666
Other comprehensive income (loss)	366,145	873	264,319	9,396	17,541	22,886	19,402	20,852	-338	7,392	6,297	-9,536	7,061
Comprehensive income	-16,829,052	-775,593	-5,339,578	-949,053	-1,331,401	-3,932,297	-972,171	-452,307	-146,644	-69,699	-182,439	-259,267	-2,418,605
Distribution of comprehensive income													
Dividends on capital stock	1,742,745	77,944	569,237	97,352	134,435	394,256	98,408	47,076	16,884	7,498	18,291	25,616	255,748
Transferred to/from surplus and change in accumulated other comprehensive income	-18,571,798	-853,537	-5,908,815	-1,046,406	-1,465,837	-4,326,553	-1,070,577	-499,381	-163,528	-77,198	-200,729	-284,884	-2,674,353
Earnings remittances to the Treasury	117,099,414	3,009,940	67,300,833	3,227,539	3,490,283	8,826,842	6,816,903	4,225,433	1,176,985	619,326	1,397,420	3,445,132	13,562,780
Total distribution of net income	**100,270,361**	**2,234,347**	**61,961,255**	**2,278,485**	**2,158,881**	**4,894,545**	**5,844,734**	**3,773,128**	**1,030,341**	**549,626**	**1,214,982**	**3,185,864**	**11,144,175**

Note: Components may not sum to totals because of rounding.

1 Represents interest income recognized on swap agreements with foreign central banks.

2 The Federal Reserve Bank of Atlanta (FRBA) has overall responsibility for managing the Reserve Banks' provision of check and automated clearinghouse (ACH) services and recognizes total System revenue for these services. The Federal Reserve Bank of New York (FRBNY) has overall responsibility for managing the Reserve Banks' provision of Fedwire funds transfer and securities transfer services, and recognizes the total System revenue for these services. The Federal Reserve Bank of Chicago (FRBC) has overall responsibility for managing the Reserve Banks' provision of electronic access services to depository institutions, and recognizes the total System revenue for these services. The FRBA, the FRBNY, and the FRBC compensate the other Reserve Banks for the costs incurred in providing these services.

3 Includes expenses for labor and materials capitalized and depreciated or amortized as charges to activities in the periods benefited.

4 Reflects the effect of the Financial Accounting Standards Board's Codification Topic (ASC 715) Compensation-Retirement Benefits. Net pension expense for the System Retirement Plan of $522,925 thousand is recorded on behalf of the System in the books of the FRBNY. The Retirement Benefit Equalization Plan and the Supplemental Employee Retirement Plan are recorded by each Federal Reserve Bank.

5 In October 2008, the Reserve Banks began to pay interest to depository institutions on qualifying balances held at the Federal Reserve Banks.

6 In April 2010, the Reserve Banks began to pay interest on term deposits under the Term Deposit Facility.

7 Represents the portion of the consolidated variable interest entities' net income recorded by the FRBNY. The amount includes interest income, interest expenses, realized and unrealized gains and losses, and professional fees.

8 For additional details, see the "Board of Governors Financial Statements" in section 12.

9 The Board of Governors assesses the Reserve Banks to fund the operations of the Consumer Financial Protection Bureau. These assessments are allocated to each Reserve Bank based on each Reserve Bank's capital and surplus balances as of the most recent quarter.

n/a Not applicable.

Table 11. Income and expenses of the Federal Reserve Banks, 1914–2015
Thousands of dollars

Federal Reserve Bank and period	Current income	Net expenses	Net additions or deductions (-)[1]	Assessments by the Board of Governors			Other compre-hensive income (loss)	Dividends paid	Distributions to the U.S. Treasury		Trans-ferred to/from surplus[4]	Transferred to/from surplus and change in accumulated other compre-hensive income[5]
				Board expenditures	Costs of currency	Consumer Financial Protection Bureau and Office of Financial Research[2]			Statutory transfers[3]	Interest on Federal Reserve notes		
All banks												
1914–15	2,173	2,018	6	302	n/a	n/a	n/a	217	n/a	n/a	n/a	n/a
1916	5,218	2,082	-193	192	n/a	n/a	n/a	1,743	n/a	n/a	n/a	n/a
1917	16,128	4,922	-1,387	238	n/a	n/a	n/a	6,804	1,134	n/a	n/a	1,134
1918	67,584	10,577	-3,909	383	n/a	n/a	n/a	5,541	n/a	n/a	n/a	48,334
1919	102,381	18,745	-4,673	595	n/a	n/a	n/a	5,012	2,704	n/a	n/a	70,652
1920	181,297	27,549	-3,744	710	n/a	n/a	n/a	5,654	60,725	n/a	n/a	82,916
1921	122,866	33,722	-6,315	741	n/a	n/a	n/a	6,120	59,974	n/a	n/a	15,993
1922	50,499	28,837	-4,442	723	n/a	n/a	n/a	6,307	10,851	n/a	n/a	-660
1923	50,709	29,062	-8,233	703	n/a	n/a	n/a	6,553	3,613	n/a	n/a	2,546
1924	38,340	27,768	-6,191	663	n/a	n/a	n/a	6,682	114	n/a	n/a	-3,078
1925	41,801	26,819	-4,823	709	n/a	n/a	n/a	6,916	59	n/a	n/a	2,474
1926	47,600	24,914	-3,638	722	1,714	n/a	n/a	7,329	818	n/a	n/a	8,464
1927	43,024	24,894	-2,457	779	1,845	n/a	n/a	7,755	250	n/a	n/a	5,044
1928	64,053	25,401	-5,026	698	806	n/a	n/a	8,458	2,585	n/a	n/a	21,079
1929	70,955	25,810	-4,862	782	3,099	n/a	n/a	9,584	4,283	n/a	n/a	22,536
1930	36,424	25,358	-93	810	2,176	n/a	n/a	10,269	17	n/a	n/a	-2,298
1931	29,701	24,843	311	719	1,479	n/a	n/a	10,030	n/a	n/a	n/a	-7,058
1932	50,019	24,457	-1,413	729	1,106	n/a	n/a	9,282	2,011	n/a	n/a	11,021
1933	49,487	25,918	-12,307	800	2,505	n/a	n/a	8,874	n/a	n/a	n/a	-917
1934	48,903	26,844	-4,430	1,372	1,026	n/a	n/a	8,782	n/a	n/a	-60	6,510
1935	42,752	28,695	-1,737	1,406	1,477	n/a	n/a	8,505	298	n/a	28	607
1936	37,901	26,016	486	1,680	2,178	n/a	n/a	7,830	227	n/a	103	353
1937	41,233	25,295	-1,631	1,748	1,757	n/a	n/a	7,941	177	n/a	67	2,616
1938	36,261	25,557	2,232	1,725	1,630	n/a	n/a	8,019	120	n/a	-419	1,862
1939	38,501	25,669	2,390	1,621	1,356	n/a	n/a	8,110	25	n/a	-426	4,534
1940	43,538	25,951	11,488	1,704	1,511	n/a	n/a	8,215	82	n/a	-54	17,617
1941	41,380	28,536	721	1,840	2,588	n/a	n/a	8,430	141	n/a	-4	571
1942	52,663	32,051	-1,568	1,746	4,826	n/a	n/a	8,669	198	n/a	50	3,554
1943	69,306	35,794	23,768	2,416	5,336	n/a	n/a	8,911	245	n/a	135	40,327
1944	104,392	39,659	3,222	2,296	7,220	n/a	n/a	9,500	327	n/a	201	48,410
1945	142,210	41,666	-830	2,341	4,710	n/a	n/a	10,183	248	n/a	262	81,970
1946	150,385	50,493	-626	2,260	4,482	n/a	n/a	10,962	67	n/a	28	81,467
1947	158,656	58,191	1,973	2,640	4,562	n/a	n/a	11,523	36	75,284	87	8,366
1948	304,161	64,280	-34,318	3,244	5,186	n/a	n/a	11,920	n/a	166,690	n/a	18,523
1949	316,537	67,931	-12,122	3,243	6,304	n/a	n/a	12,329	n/a	193,146	n/a	21,462
1950	275,839	69,822	36,294	3,434	7,316	n/a	n/a	13,083	n/a	196,629	n/a	21,849
1951	394,656	83,793	-2,128	4,095	7,581	n/a	n/a	13,865	n/a	254,874	n/a	28,321
1952	456,060	92,051	1,584	4,122	8,521	n/a	n/a	14,682	n/a	291,935	n/a	46,334
1953	513,037	98,493	-1,059	4,100	10,922	n/a	n/a	15,558	n/a	342,568	n/a	40,337
1954	438,486	99,068	-134	4,175	6,490	n/a	n/a	16,442	n/a	276,289	n/a	35,888
1955	412,488	101,159	-265	4,194	4,707	n/a	n/a	17,712	n/a	251,741	n/a	32,710
1956	595,649	110,240	-23	5,340	5,603	n/a	n/a	18,905	n/a	401,556	n/a	53,983
1957	763,348	117,932	-7,141	7,508	6,374	n/a	n/a	20,081	n/a	542,708	n/a	61,604
1958	742,068	125,831	124	5,917	5,973	n/a	n/a	21,197	n/a	524,059	n/a	59,215
1959	886,226	131,848	98,247	6,471	6,384	n/a	n/a	22,722	n/a	910,650	n/a	-93,601
1960	1,103,385	139,894	13,875	6,534	7,455	n/a	n/a	23,948	n/a	896,816	n/a	42,613
1961	941,648	148,254	3,482	6,265	6,756	n/a	n/a	25,570	n/a	687,393	n/a	70,892

(continued on next page)

Table 11.—*continued*

Federal Reserve Bank and period	Current income	Net expenses	Net additions or deductions (-)[1]	Assessments by the Board of Governors			Other compre-hensive income (loss)	Dividends paid	Distributions to the U.S. Treasury		Trans-ferred to/from surplus[4]	Transferred to/from surplus and change in accumulated other compre-hensive income[5]
				Board expenditures	Costs of currency	Consumer Financial Protection Bureau and Office of Financial Research[2]			Statutory transfers[3]	Interest on Federal Reserve notes		
1962	1,048,508	161,451	-56	6,655	8,030	n/a	n/a	27,412	n/a	799,366	n/a	45,538
1963	1,151,120	169,638	615	7,573	10,063	n/a	n/a	28,912	n/a	879,685	n/a	55,864
1964	1,343,747	171,511	726	8,655	17,230	n/a	n/a	30,782	n/a	1,582,119	n/a	-465,823
1965	1,559,484	172,111	1,022	8,576	23,603	n/a	n/a	32,352	n/a	1,296,810	n/a	27,054
1966	1,908,500	178,212	996	9,022	20,167	n/a	n/a	33,696	n/a	1,649,455	n/a	18,944
1967	2,190,404	190,561	2,094	10,770	18,790	n/a	n/a	35,027	n/a	1,907,498	n/a	29,851
1968	2,764,446	207,678	8,520	14,198	20,474	n/a	n/a	36,959	n/a	2,463,629	n/a	30,027
1969	3,373,361	237,828	-558	15,020	22,126	n/a	n/a	39,237	n/a	3,019,161	n/a	39,432
1970	3,877,218	276,572	11,442	21,228	23,574	n/a	n/a	41,137	n/a	3,493,571	n/a	32,580
1971	3,723,370	319,608	94,266	32,634	24,943	n/a	n/a	43,488	n/a	3,356,560	n/a	40,403
1972	3,792,335	347,917	-49,616	35,234	31,455	n/a	n/a	46,184	n/a	3,231,268	n/a	50,661
1973	5,016,769	416,879	-80,653	44,412	33,826	n/a	n/a	49,140	n/a	4,340,680	n/a	51,178
1974	6,280,091	476,235	-78,487	41,117	30,190	n/a	n/a	52,580	n/a	5,549,999	n/a	51,483
1975	6,257,937	514,359	-202,370	33,577	37,130	n/a	n/a	54,610	n/a	5,382,064	n/a	33,828
1976	6,623,220	558,129	7,311	41,828	48,819	n/a	n/a	57,351	n/a	5,870,463	n/a	53,940
1977	6,891,317	568,851	-177,033	47,366	55,008	n/a	n/a	60,182	n/a	5,937,148	n/a	45,728
1978	8,455,309	592,558	-633,123	53,322	60,059	n/a	n/a	63,280	n/a	7,005,779	n/a	47,268
1979	10,310,148	625,168	-151,148	50,530	68,391	n/a	n/a	67,194	n/a	9,278,576	n/a	69,141
1980	12,802,319	718,033	-115,386	62,231	73,124	n/a	n/a	70,355	n/a	11,706,370	n/a	56,821
1981	15,508,350	814,190	-372,879	63,163	82,924	n/a	n/a	74,574	n/a	14,023,723	n/a	76,897
1982	16,517,385	926,034	-68,833	61,813	98,441	n/a	n/a	79,352	n/a	15,204,591	n/a	78,320
1983	16,068,362	1,023,678	-400,366	71,551	152,135	n/a	n/a	85,152	n/a	14,228,816	n/a	106,663
1984	18,068,821	1,102,444	-412,943	82,116	162,606	n/a	n/a	92,620	n/a	16,054,095	n/a	161,996
1985	18,131,983	1,127,744	1,301,624	77,378	173,739	n/a	n/a	103,029	n/a	17,796,464	n/a	155,253
1986	17,464,528	1,156,868	1,975,893	97,338	180,780	n/a	n/a	109,588	n/a	17,803,895	n/a	91,954
1987	17,633,012	1,146,911	1,796,594	81,870	170,675	n/a	n/a	117,499	n/a	17,738,880	n/a	173,771
1988	19,526,431	1,205,960	-516,910	84,411	164,245	n/a	n/a	125,616	n/a	17,364,319	n/a	64,971
1989	22,249,276	1,332,161	1,254,613	89,580	175,044	n/a	n/a	129,885	n/a	21,646,417	n/a	130,802
1990	23,476,604	1,349,726	2,099,328	103,752	193,007	n/a	n/a	140,758	n/a	23,608,398	n/a	180,292
1991	22,553,002	1,429,322	405,729	109,631	261,316	n/a	n/a	152,553	n/a	20,777,552	n/a	228,356
1992	20,235,028	1,474,531	-987,788	128,955	295,401	n/a	n/a	171,763	n/a	16,774,477	n/a	402,114
1993	18,914,251	1,657,800	-230,268	140,466	355,947	n/a	n/a	195,422	n/a	15,986,765	n/a	347,583
1994	20,910,742	1,795,328	2,363,862	146,866	368,187	n/a	n/a	212,090	n/a	20,470,011	n/a	282,122
1995	25,395,148	1,818,416	857,788	161,348	370,203	n/a	n/a	230,527	n/a	23,389,367	n/a	283,075
1996	25,164,303	1,947,861	-1,676,716	162,642	402,517	n/a	n/a	255,884	5,517,716	14,565,624	n/a	635,343
1997	26,917,213	1,976,453	-2,611,570	174,407	364,454	n/a	n/a	299,652	20,658,972	0	n/a	831,705
1998	28,149,477	1,833,436	1,906,037	178,009	408,544	n/a	n/a	343,014	17,785,942	8,774,994	n/a	731,575
1999	29,346,836	1,852,162	-533,557	213,790	484,959	n/a	n/a	373,579	n/a	25,409,736	n/a	479,053
2000	33,963,992	1,971,688	-1,500,027	188,067	435,838	n/a	n/a	409,614	n/a	25,343,892	n/a	4,114,865
2001	31,870,721	2,084,708	-1,117,435	295,056	338,537	n/a	n/a	428,183	n/a	27,089,222	n/a	517,580
2002	26,760,113	2,227,078	2,149,328	205,111	429,568	n/a	n/a	483,596	n/a	24,495,490	n/a	1,068,598
2003	23,792,725	2,462,658	2,481,127	297,020	508,144	n/a	n/a	517,705	n/a	22,021,528	n/a	466,796
2004	23,539,942	2,238,705	917,870	272,331	503,784	n/a	n/a	582,402	n/a	18,078,003	n/a	2,782,587
2005	30,729,357	2,889,544	-3,576,903	265,742	477,087	n/a	n/a	780,863	n/a	21,467,545	n/a	1,271,672
2006	38,410,427	3,263,844	-158,846	301,014	491,962	n/a	n/a	871,255	n/a	29,051,678	n/a	4,271,828
2007	42,576,025	3,510,206	198,417	296,125	576,306	n/a	324,481	992,353	n/a	34,598,401	n/a	3,125,533
2008	41,045,582	4,870,374	3,340,628	352,291	500,372	n/a	-3,158,808	1,189,626	n/a	31,688,688	n/a	2,626,053
2009	54,463,121	5,978,795	4,820,204	386,400	502,044	n/a	1,006,813	1,428,202	n/a	47,430,237	n/a	4,564,460
2010	79,300,937	6,270,420	9,745,562	422,200	622,846	42,286	45,881	1,582,785	n/a	79,268,124	n/a	883,724

(continued on next page)

Table 11.—*continued*

Federal Reserve Bank and period	Current income	Net expenses	Net additions or deductions (-)[1]	Assessments by the Board of Governors			Other compre-hensive income (loss)	Dividends paid	Distributions to the U.S. Treasury		Trans-ferred to/from surplus[4]	Transferred to/from surplus and change in accumulated other compre-hensive income[5]
				Board expenditures	Costs of currency	Consumer Financial Protection Bureau and Office of Financial Research[2]			Statutory transfers[3]	Interest on Federal Reserve notes		
2011	85,241,366	7,316,643	2,015,991	472,300	648,798	281,712	-1,161,848	1,577,284	n/a	75,423,597	n/a	375,175
2012	81,586,102	7,798,353	18,380,835	490,001	722,301	387,279	-52,611	1,637,934	n/a	88,417,936	n/a	460,528
2013	91,149,953	9,134,656	-1,029,750	580,000	701,522	563,200	2,288,811	1,649,277	n/a	79,633,271	n/a	147,088
2014	116,561,512	10,714,872	-2,718,283	590,000	710,807	563,000	-1,611,569	1,685,826	n/a	96,901,695	n/a	1,064,952
2015	114,233,676	11,139,956	-1,305,513	705,000	689,288	489,700	366,145	1,742,745	25,955,921	91,143,493	n/a	-18,571,798
Total, 1914–2015	**1,417,047,916**	**120,081,531**	**37,489,887**	**8,999,117**	**14,506,295**	**2,327,177**	**-1,952,705**	**22,224,809**	**70,069,879**	**1,198,433,402**	**-4**	**15,942,389[6]**
Aggregate for each Bank, 1914–2015												
Boston	56,552,363	5,507,426	287,115	386,945	798,011	103,910	12,644	976,247	3,600,834	44,842,511	135	636,102
New York	608,881,173	408,937,687[7]	25,937,128	2,459,753	3,949,734	741,668	-2,106,581	6,236,539	27,623,341	545,077,826	-433	5,729,512
Philadelphia	46,673,746	4,849,202	736,052	570,919	669,534	174,117	7,963	1,583,110	2,546,267	36,308,189	291	716,126
Cleveland	62,926,686	5,064,531	611,548	666,177	821,313	180,704	19,098	1,656,251	4,485,577	49,612,575	-10	1,070,211
Richmond	107,823,476	9,621,863	2,041,871	1,659,803	1,242,798	492,107	43,270	4,486,666	7,798,746	81,295,580	-72	3,311,130
Atlanta	95,153,663	12,451,705	1,666,154	618,315	1,484,229	132,820	10,621	1,450,225	4,200,906	75,616,315	5	875,917
Chicago	127,994,393	10,439,949	1,860,519	659,401	1,525,919	63,758	26,274	1,345,169	5,353,413	109,806,844	12	686,725
St. Louis	37,953,861	3,920,631	424,880	153,968	506,405	20,289	19,935	329,674	2,091,623	31,149,772	-27	226,346
Minneapolis	20,660,131	3,978,472	424,534	195,886	281,295	15,118	-2,042	433,785	541,120	15,436,029	65	200,861
Kansas City	42,173,398	5,390,019	578,233	189,796	523,182	23,766	-2,757	381,605	1,541,569	34,476,668	-9	222,271
Dallas	58,599,215	5,764,024	1,079,514	284,379	847,351	36,921	9,251	556,018	2,014,658	49,889,286	55	294,797
San Francisco	151,655,816	12,199,936	1,842,345	1,153,778	1,856,523	342,001	9,617	2,789,521	8,271,826	124,921,807	-17	1,972,394
Total	**1,417,047,916**	**120,081,531**	**37,489,887**	**8,999,117**	**14,506,295**	**2,327,177**	**-1,952,705**	**22,224,809**	**70,069,879**	**1,198,433,402**	**-4**	**15,942,389**

Note: Components may not sum to totals because of rounding.

1 For 1987 and subsequent years, includes the cost of services provided to the Treasury by Federal Reserve Banks for which reimbursement was not received.

2 Starting in 2010, as required under the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, the Board of Governors began assessing the Reserve Banks to fund the operations of the Consumer Financial Protection Bureau and, for a two-year period beginning July 21, 2010, the Office of Financial Research. These assessments are allocated to the Reserve Banks based on each Reserve Bank's capital and surplus balances as of the most recent quarter.

3 Represents transfers made as a franchise tax from 1917 through 1932; transfers made under section 13b of the Federal Reserve Act from 1935 through 1947; transfers made under section 7 of the Federal Reserve Act for 1996, 1997, and 2015.

4 Transfers are made under section 13b of the Federal Reserve Act.

5 Transfers are made under section 7 of the Federal Reserve Act. Beginning in 2006, accumulated other comprehensive income is reported as a component of surplus.

6 The $15,942,389 thousand transferred to surplus was reduced by direct charges of $500 thousand for charge-off on Bank premises (1927); $139,300 thousand for contributions to capital of the Federal Deposit Insurance Corporation (1934); $4 thousand net upon elimination of section 13b surplus (1958); $106,000 thousand (1996), $107,000 thousand (1997), $3,752,000 thousand (2000) transferred to the Treasury as statutorily required; and $1,848,716 thousand related to the implementation of SFAS No. 158 (2006) and was increased by a transfer of $11,131 thousand from reserves for contingencies (1955), leaving a balance of $10,000,000 thousand on December 31, 2015.

7 This amount is reduced by $6,707,578 thousand for expenses of the System Retirement Plan. See note 4, "Table 10. Income and expenses of the Federal Reserve Banks, by Bank, 2015."

n/a Not applicable.

Table 12. Operations in principal departments of the Federal Reserve Banks, 2012–15

Operation	2015	2014	2013	2012
Millions of pieces				
Currency processed	32,596	33,372	33,219	31,703
Currency destroyed	5,212	5,622	5,564	4,614
Coin received	55,921	55,401	56,806	58,669
Checks handled				
U.S. government checks[1]	60	63	83	121
Postal money orders	92	95	101	108
Commercial	5,452	5,741	5,987	6,622
Securities transfers[2]	17	17	19	18
Funds transfers[3]	143	135	134	132
Automated clearinghouse transactions				
Commercial	12,298	11,620	11,143	10,665
Government	1,558	1,516	1,467	1,382
Millions of dollars				
Currency processed	604,391	638,245	638,237	581,382
Currency destroyed	139,833	198,525	206,998	105,464
Coin received	5,394	5,363	5,481	5,700
Checks handled				
U.S. government checks[1]	143,764	141,396	154,584	199,251
Postal money orders	20,761	20,902	22,262	21,927
Commercial	8,109,457	8,108,895[r]	7,960,028	8,125,424
Securities transfers[2]	295,755,612	287,104,205	295,186,170	284,401,670
Funds transfers[3]	832,630,440	884,551,876	713,310,354	599,200,625
Automated clearinghouse transactions				
Commercial	20,564,724	19,891,274	19,689,431	19,293,857
Government	5,054,219	4,872,536	4,714,428	4,609,914

1 Includes government checks handled electronically (electronic checks).
2 Data on securities transfers do not include reversals.
3 Data on funds transfers do not include non-value transfers.
r Revised.

Table 13. Number and annual salaries of officers and employees of the Federal Reserve Banks, December 31, 2015

Federal Reserve Bank (including branches)	President[1]	Other officers[1]		Employees			Total	
	Annual salary (dollars)[2]	Number	Annual salaries (dollars)[2]	Number		Annual salaries (dollars)[2]	Number	Annual salaries (dollars)[2]
				Full time	Part time			
Boston	383,500	69	16,094,616	966	28	99,733,396	1,064	116,211,513
New York	466,500	595	143,062,252	2,532	36	297,653,504	3,164	441,182,256
Philadelphia	375,300	62	12,346,445	767	17	68,373,766	847	81,095,511
Cleveland	369,600	64	12,710,513	860	22	72,967,361	947	86,047,474
Richmond	373,500	86	16,791,379	1,376	18	121,195,943	1,481	138,360,822
Atlanta	346,600	90	18,422,090	1,445	16	125,281,732	1,552	144,050,422
Chicago	382,400	117	24,872,095	1,345	45	129,175,182	1,508	154,429,677
St. Louis	339,700	102	20,206,600	1,087	33	92,623,437	1,223	113,169,737
Minneapolis	368,800	58	11,751,750	966	39	80,241,086	1,064	92,361,636
Kansas City	345,900	91	16,865,400	1,501	12	112,167,581	1,605	129,378,881
Dallas	380,200	68	13,138,600	1,113	9	86,841,329	1,191	100,360,129
San Francisco	422,900	92	20,778,286	1,553	20	156,710,649	1,666	177,911,835
Federal Reserve Information Technology	n/a	71	14,575,185	1,139	2	126,952,368	1,212	141,527,553
Office of Employee Benefits	n/a	13	3,268,105	36	1	4,169,660	50	7,437,765
Total	**4,554,900**	**1,578**	**344,883,317**	**16,686**	**298**	**1,574,086,995**	**18,574**	**1,923,525,211**

Note: Components may not sum to totals because of rounding.

[1] In January 2014, the Board implemented a new compensation policy for Reserve Bank presidents and officer salary ranges for each Reserve Bank reflecting the cost of labor in each head-office city. The Board reviews Reserve Bank officer salary ranges annually and may adjust those ranges based on market information. Total cash compensation for all Reserve Bank officers is limited by compensation caps established for each Reserve Bank. The 2015 compensation caps were $469,500 for Boston, New York, and San Francisco; $435,500 for Philadelphia, Cleveland, Richmond, Atlanta, Chicago, St. Louis, Minneapolis, and Dallas; and $419,900 for Kansas City. Under the Board's policy, a president's initial appointment salary normally will be set at 95 percent of the salary-range midpoint (a 95 compa-ratio), with the exception of the president of the New York Reserve Bank, whose appointment salary normally will be set at 105 compa-ratio, reflecting that position's additional responsibilities and broader scope. The Board has discretion to approve an appointment salary greater than those noted above at the request of a Reserve Bank's board of directors. Under the policy, all presidents will normally receive annual salary increases on January 1, based upon the Board-approved average Reserve Bank officer merit percentage for that year. In addition, presidents, as applicable, received an adjustment to their 2015 compensation to reflect the transition from the previous president compensation policy, in which each president received an annual salary increase to maintain his or her compa-ratio and an additional increase triennially to his or her compa-ratio. The previous policy was suspended from 2011 through 2013 due to the Board's application of the pay freeze to Reserve Bank officers. The adjustments, which take into consideration tenure as president and position within the relevant salary range, will be phased in through 2016.

[2] Annualized salary liability (excluding outside agency costs) based on salaries in effect on December 31, 2015.

n/a Not applicable.

Table 14. Acquisition costs and net book value of the premises of the Federal Reserve Banks and Branches, December 31, 2015
Thousands of dollars

Federal Reserve Bank or Branch	Acquisition costs				Net book value	Other real estate
	Land	Buildings (including vaults)[1]	Building machinery and equipment	Total[2]		
Boston	27,293	192,151	44,335	263,779	124,571	n/a
New York	68,183	550,581	105,911	724,675	438,349	n/a
Philadelphia	8,146	120,879	32,323	161,348	75,317	n/a
Cleveland	4,219	133,709	26,207	164,135	89,862	n/a
Cincinnati	3,075	29,553	16,269	48,897	15,914	n/a
Richmond	32,044	165,889	59,555	257,488	142,995	n/a
Baltimore	7,917	40,319	13,862	62,098	31,168	n/a
Charlotte	7,884	45,632	14,000	67,516	37,476	n/a
Atlanta	22,995	160,360	20,810	204,165	142,064	n/a
Birmingham	5,347	13,056	1,465	19,868	9,902	n/a
Jacksonville	1,897	24,326	6,400	32,623	16,697	n/a
New Orleans	3,785	14,660	7,267	25,712	11,779	n/a
Miami	4,254	33,446	9,220	46,920	26,140	n/a
Chicago	5,904	241,621	31,887	279,412	127,536	n/a
Detroit	12,329	74,431	12,823	99,583	77,120	n/a
St. Louis	9,377	144,320	16,468	170,165	109,538	n/a
Memphis	2,472	16,196	5,188	23,856	8,543	n/a
Minneapolis	15,522	109,710	17,304	142,536	83,728	n/a
Helena	2,900	10,327	1,516	14,743	8,090	n/a
Kansas City	38,691	206,934	25,699	271,324	226,825	n/a
Denver	3,694	9,873	5,698	19,265	7,129	n/a
Omaha	3,559	7,596	1,833	12,988	5,620	n/a
Dallas	38,100	129,871	32,760	200,731	112,821	n/a
El Paso	262	4,753	2,050	7,065	1,569	n/a
Houston	32,323	104,169	9,209	145,701	112,264	n/a
San Francisco	20,988	129,738	30,967	181,693	87,363	n/a
Los Angeles	6,306	80,515	19,023	105,844	50,879	n/a
Salt Lake City	1,294	5,613	1,628	8,535	2,536	n/a
Seattle	13,101	49,970	6,849	69,920	56,541	n/a
Total	**403,861**	**2,850,198**	**578,526**	**3,832,585**	**2,240,336**	**n/a**

[1] Includes expenditures for construction at some offices, pending allocation to appropriate accounts.
[2] Excludes charge-offs of $17,699 thousand before 1952.
n/a Not applicable.

12 Federal Reserve System Audits

The Board of Governors, the Federal Reserve Banks, and the Federal Reserve System as a whole are all subject to several levels of audit and review.

The Board's financial statements and internal controls over financial reporting are audited annually by an independent outside auditor retained by the Board's Office of Inspector General (OIG). The outside auditor also tests the Board's compliance with certain provisions of laws, regulations, and contracts affecting those statements.

The Reserve Banks' financial statements are audited annually by an independent outside auditor retained by the Board of Governors. In addition, the Reserve Banks are subject to annual examination by the Board. As discussed in section 6, "Federal Reserve Banks," the Board's examination includes a wide range of ongoing oversight activities conducted on site and off site by staff of the Board's Division of Reserve Bank Operations and Payment Systems.

In addition, the OIG conducts audits, investigations, and other reviews relating to the Board's programs and operations as well as to Board functions delegated to the Reserve Banks. Certain aspects of Federal Reserve operations are also subject to review by the Government Accountability Office.

Board of Governors Financial Statements

The financial statements of the Board of Governors were audited by KPMG LLP, independent auditors, for the year ended December 31, 2015, and by Deloitte & Touche LLP, independent auditors, for the year ended December 31, 2014.

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D.C. 20551

March 7, 2016

Management's Report on Internal Control over Financial Reporting

To the Committee on Board Affairs:

The management of the Board of Governors of the Federal Reserve System (the Board) is responsible for the preparation and fair presentation of the balance sheet as of December 31, 2015 and 2014, and the statement of operations and cash flows for the years then ended (the financial statements). The financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America, and, as such, include some amounts that are based on management judgments and estimates. To our knowledge, the financial statements are, in all material respects, fairly presented in conformity with generally accepted accounting principles and include all disclosures necessary for such fair presentation.

The management of the Board is responsible for establishing and maintaining effective internal control over financial reporting as it relates to the financial statements. The Board's internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external reporting purposes in accordance with accounting principles generally accepted in the United States of America. The Board's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the Board's assets; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that the Board's receipts and expenditures are being made only in accordance with authorizations of its management and directors; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Board's assets that could have a material effect on its financial statements.

Even effective internal control, no matter how well designed, has inherent limitations, including the possibility of human error, and therefore can provide only reasonable assurance with respect to the preparation of reliable financial statements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

The management of the Board assessed its internal control over financial reporting based upon the criteria established in the *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this assessment, we believe that the Board maintained effective internal control over financial reporting.

Donald V. Hammond
Chief Operating Officer

William L. Mitchell
Chief Financial Officer

INDEPENDENT AUDITORS' REPORT

To the Board of Governors of the Federal Reserve System:

We have audited the accompanying balance sheet of the Board of Governors of the Federal Reserve System (the "Board") as of December 31, 2015, and the related statements of operations and cash flows for the year then ended. We also have audited the Board's internal control over financial reporting as of December 31, 2015, based on criteria established in *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. The Board's management is responsible for these financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on these financial statements and an opinion on the Board's internal control over financial reporting based on our audit. The accompanying financial statements of the Board as of December 31, 2014 and for the year then ended were audited by other auditors whose report thereon dated March 12, 2015, expressed an unmodified opinion on those statements.

We conducted our audit of the financial statements in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), in accordance with auditing standards generally accepted in the United States of America, and in accordance with the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States. We conducted our audit of internal control over financial reporting in accordance with the auditing standards of the PCAOB and in accordance with attestation standards established by the American Institute of Certified Public Accountants. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audit of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

An entity's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. An entity's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the entity; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the entity are being made only in accordance with authorizations of management and directors of the entity; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the entity's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Board as of December 31, 2015, and the results of its operations and its cash flows for the year then ended in conformity with U.S. generally accepted accounting principles. Also in our opinion, the Board maintained, in all material respects, effective internal control over financial reporting as of December 31, 2015, based on criteria established in *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

In accordance with *Government Auditing Standards*, we have also issued a report dated March 7, 2016 on our tests of the Board's compliance with certain provisions of laws, regulations, contracts, and other matters. The purpose of that report is to describe the scope of our testing of compliance and the results of that testing, and not to provide an opinion on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Board's compliance.

KPMG LLP

Washington, DC
March 7, 2016

Board of Governors of the Federal Reserve System Balance Sheets

	As of December 31,	
	2015	2014
Assets		
Current assets:		
Cash	$121,678,242	$ 69,243,271
Accounts receivable – net	3,032,839	4,800,677
Prepaid expenses and other assets	5,261,594	7,043,863
Total current assets	129,972,675	81,087,811
Noncurrent assets:		
Property, equipment, and software – net	259,267,021	256,324,432
Other assets	1,184,136	1,484,570
Total noncurrent assets	260,451,157	257,809,002
Total	$390,423,832	$338,896,813
Liabilities and cumulative results of operations		
Current liabilities:		
Accounts payable and accrued liabilities	$ 16,314,721	$ 27,455,677
Accrued payroll and related taxes	29,000,736	22,699,129
Accrued annual leave	36,796,477	34,266,939
Capital lease payable	155,241	323,306
Unearned revenues and other liabilities	2,477,966	1,977,674
Total current liabilities	84,745,141	86,722,725
Long-term liabilities:		
Capital lease payable	–	92,204
Retirement benefit obligation	54,691,940	45,461,450
Postretirement benefit obligation	13,291,034	12,969,115
Postemployment benefit obligation	8,620,208	8,850,310
Deferred rent	40,315,439	40,151,309
Other liabilities	–	253,938
Total long-term liabilities	116,918,621	107,778,326
Total liabilities	201,663,762	194,501,051
Cumulative results of operations:		
Fund balance	209,353,299	163,920,431
Accumulated other comprehensive loss	(20,593,229)	(19,524,669)
Total cumulative results of operations	188,760,070	144,395,762
Total	$390,423,832	$338,896,813

See notes to financial statements.

Board of Governors of the Federal Reserve System Statements of Operations

	For the years ended December 31,	
	2015	2014
Board operating revenues:		
Assessments levied on Federal Reserve Banks for Board operating expenses and capital expenditures	$705,000,000	$590,000,000
Other revenues	19,139,153	17,757,157
Total operating revenues	724,139,153	607,757,157
Board operating expenses:		
Salaries	385,055,415	351,495,519
Retirement, insurance, and benefits	88,462,323	78,111,357
Contractual services and professional fees	49,570,438	45,252,522
Depreciation, amortization, and net gains or losses on disposals	41,343,515	25,411,096
Travel	16,793,617	15,467,118
Non-capital furniture and equipment, postage, supplies	12,458,662	12,010,066
Data, news, and research	16,839,166	12,755,928
Utilities	10,232,994	10,511,203
Software	14,606,064	13,532,082
Rentals of space	25,227,322	16,518,231
Repairs and maintenance	6,923,745	6,504,496
Other expenses	11,193,024	9,883,686
Total operating expenses	678,706,285	597,453,304
Net income	45,432,868	10,303,853
Currency costs:		
Assessments levied or to be levied on Federal Reserve Banks for currency costs	689,198,549	707,402,059
Expenses for costs related to currency	689,198,549	707,402,059
Currency assessments over (under) expenses	–	–
Bureau of Consumer Financial Protection (Bureau):		
Assessments levied on the Federal Reserve Banks for the Bureau	489,700,000	563,000,000
Transfers to the Bureau	489,700,000	563,000,000
Bureau assessments over (under) transfers	–	–
Office of Financial Research (Office):		
Assessments transferred to the Federal Reserve Banks for the Office	–	1,512,822
Transfers from the Office	–	1,512,822
Office assessments over (under) transfers	–	–
Total net income	45,432,868	10,303,853
Other comprehensive income:		
Pension and other postretirement benefit plans:		
Amortization of prior service cost	605,483	605,483
Amortization of net actuarial loss	2,046,251	481,850
Net actuarial loss arising during the year	(3,720,294)	(13,361,050)
Total other comprehensive loss	(1,068,560)	(12,273,717)
Comprehensive income (loss)	44,364,308	(1,969,864)
Cumulative results of operations – beginning of year	144,395,762	146,365,626
Cumulative results of operations – end of year	$188,760,070	$144,395,762

See notes to financial statements.

Board of Governors of the Federal Reserve System Statements of Cash Flows

	For the years ended December 31,	
	2015	2014
Cash flows from operating activities:		
Net income	$ 45,432,868	$ 10,303,853
Adjustments to reconcile results of operations to net cash provided by (used in) operating activities:		
Depreciation and amortization	34,688,752	25,132,858
Net loss on disposal of property and equipment	6,654,763	278,238
Other additional non-cash adjustments to results of operations	(237,927)	(308,326)
(Increase) decrease in assets:		
Accounts receivable	1,767,837	3,110,335
Prepaid expenses	1,782,269	(2,446,206)
Other assets	300,434	498,795
Increase (decrease) in liabilities:		
Accounts payable and accrued liabilities	(3,089,920)	(770,233)
Accrued payroll and related taxes	6,301,607	(2,406,461)
Accrued annual leave	2,529,538	2,978,502
Unearned revenues and other liabilities	500,292	(531,528)
Net retirement benefit obligation	8,292,457	4,326,019
Net postretirement benefit obligation	191,392	406,819
Net postemployment benefit obligation	(230,102)	359,389
Deferred rent	(1,316,365)	539,410
Other long-term liabilities	(253,938)	(24,045)
Net cash provided by operating activities	103,313,957	41,447,419
Cash flows from investing activities:		
Capital expenditures	(50,591,423)	(62,703,485)
Net cash used in investing activities	(50,591,423)	(62,703,485)
Cash flows from financing activities:		
Capital lease payments	(287,563)	(351,980)
Net cash used in financing activities	(287,563)	(351,980)
Net increase (decrease) in cash	52,434,971	(21,608,046)
Cash balance – beginning of year	69,243,271	90,851,317
Cash balance – end of year	$121,678,242	$ 69,243,271

See notes to financial statements.

Board of Governors of the Federal Reserve System Notes to Financial Statements as of and for the Years Ended December 31, 2015 and 2014

(1) Structure

The Federal Reserve System (the System) was established by Congress in 1913 and consists of the Board of Governors (the Board), the Federal Open Market Committee, the twelve regional Federal Reserve Banks (Reserve Banks), the Federal Advisory Council, and the private commercial banks that are members of the System. The Board, unlike the Reserve Banks, was established as a federal government agency and is located in Washington, D.C. The Board has established two other committees that directly provide perspectives and input from various sectors of the economy: the Community Advisory Council and the Community Depository Institutions Advisory Council.

The Board is required by the Federal Reserve Act (the Act) to report its operations to the Speaker of the House of Representatives. The Act also requires the Board, each year, to order a financial audit of each Reserve Bank and to publish each week a statement of the financial condition of each Reserve Bank and a combined statement for all of the Reserve Banks. Accordingly, the Board believes that the best financial disclosure consistent with law is achieved by issuing separate financial statements for the Board and for the Reserve Banks. Therefore, the accompanying financial statements include only the results of operations and activities of the Board. Combined financial statements for the Reserve Banks are included in the Board's annual report to the Speaker of the House of Representatives and weekly statements are available on the Board's public website.

The Dodd-Frank Wall Street Reform and Consumer Financial Protection Act of 2010 (Dodd-Frank Act) established the Bureau of Consumer Financial Protection (Bureau) as an independent bureau within the System and designated the Board's Office of Inspector General (OIG) as the OIG for the Bureau. As required by the Dodd-Frank Act, the Board transferred certain responsibilities to the Bureau. The Dodd-Frank Act requires the Board to fund the Bureau from the combined earnings of the System. The Dodd-Frank Act also created the Financial Stability Oversight Council (FSOC), of which the Chairman of the Board is a member, as well as the Office of Financial Research (Office) within the U.S. Department of Treasury (Treasury) to provide support to the FSOC and the member agencies. The Dodd-Frank Act required that the Board provide funding for the FSOC and the Office until July 2012. Section 1017 of the Dodd-Frank Act provides that the financial statements of the Bureau are not to be consolidated with those of the Board or the System; the Board has also determined that neither the FSOC nor the Office should be consolidated in the Board's financial statements. Accordingly, the Board's financial statements do not include financial data of the Bureau, the FSOC, or the Office other than the funding that the Board is required by the Dodd-Frank Act to provide.

(2) Operations and Services

The Board's responsibilities require thorough analysis of domestic and international financial and economic developments. The Board carries out those responsibilities in conjunction with the Reserve Banks and the Federal Open Market Committee. The Board also exercises general oversight of the operations of the Reserve Banks and exercises broad responsibility in the nation's payments system. Policy regarding open market operations is established by the Federal Open Market

Committee. However, the Board has sole authority over changes in reserve requirements, and it must approve any change in the discount rate initiated by a Reserve Bank. The Board also plays a major role in the supervision and regulation of the U.S. financial system. It has supervisory responsibilities for state-chartered banks that are members of the System, bank holding companies, savings and loan holding companies, foreign activities of member banks, U.S. activities of foreign banks, and any nonbank financial companies the FSOC has determined should be supervised by the Board. Although the Dodd-Frank Act gave the Bureau general rule-writing responsibility for federal consumer financial laws, the Board retains rule-writing responsibility under the Community Reinvestment Act and other specific statutory provisions. The Board also enforces the requirements of federal consumer financial laws for state member banks with assets of $10 billion or less. In addition, the Board enforces certain other consumer laws at all state member banks, regardless of size.

(3) Significant Accounting Policies

Basis of Accounting — The Board prepares its financial statements in accordance with accounting principles generally accepted in the United States (GAAP).

Revenues — The Federal Reserve Act authorizes the Board to levy an assessment on the Reserve Banks to fund its operations. The Board allocates the assessment to each Reserve Bank based on the Reserve Bank's capital and surplus balances. The Board recognizes the assessment in the period in which it is assessed.

Assessments to Fund the Bureau — The Board assesses the Reserve Banks for the funds transferred to the Bureau based on each Reserve Bank's capital and surplus balances. The Board recognizes the assessment in the period in which it is assessed. These assessments and transfers are reported separately from the Board's operating activities in the Board's Statements of Operations.

Assessments for Supervision and Regulation (S&R) — The Dodd-Frank Act directs the Board to collect assessments, fees, or other charges equal to the total expenses the Board estimates are necessary or appropriate to carry out the supervisory and regulatory responsibilities of the Board for bank holding companies and savings and loan holding companies with total consolidated assets of $50 billion or more and nonbank financial companies designated for Board supervision by the FSOC. As a collecting entity, the Board does not recognize the S&R assessments as revenue nor does the Board use the collections to fund Board expenses; the funds are transferred to the Treasury.

System Earning Remittances to the Treasury — Beginning in December 2015, the Fixing America's Surface Transportation Act (FAST Act) requires that any amount of surplus funds of the Reserve Banks that exceed or would exceed $10 billion be transferred to the United States Treasury (Treasury) via the Board. As an intermediary transfer agent, the Board does not recognize the remittances as revenue nor does the Board use the remittances to fund Board expenses. Additional information and disclosures regarding these remittances to the Treasury can be found in the combined financial statements of the Federal Reserve Banks.

Civil Money Penalties — The Board has enforcement authority over the financial institutions it supervises and their affiliated parties, including the authority to assess civil money penalties. As directed by statute, all civil money penalties that are assessed and collected by the Board are remitted to either the Treasury or Federal Emergency Management Agency (FEMA). As a collecting entity, the Board

does not recognize civil money penalties as revenue nor does the Board use civil money penalties to fund Board expenses. Civil money penalties whose collection is contingent upon fulfillment of certain conditions in the enforcement action are not recorded in the Board's financial records. Checks for civil money penalties made payable to the National Flood Insurance Program are forwarded to FEMA and are not recorded in the Board's financial records.

Currency Costs — The Board issues the nation's currency (in the form of Federal Reserve notes), and the Reserve Banks distribute currency through depository institutions. The Board incurs expenses and assesses the Reserve Banks for the expenses related to producing, issuing, and retiring Federal Reserve notes as well as providing educational services. The assessment is allocated based on each Reserve Bank's share of the number of notes comprising the System's net liability for Federal Reserve notes on December 31 of the prior year. The Board recognizes the assessment in the period in which it is assessed. These expenses and assessments are reported separately from the Board's operating activities in the Board's Statements of Operations.

Accounts Receivable and Allowance for Doubtful Accounts — Accounts receivable are recorded when amounts are billed but not yet received and are shown net of the allowance for doubtful accounts. Accounts receivable considered uncollectible are charged against the allowance account in the year they are deemed uncollectible. The allowance for doubtful accounts is adjusted monthly, based upon a review of outstanding receivables.

Prepaid Expenses — The Board books expenses as prepaid for costs paid in advance that will be expensed with the passage of time or upon the occurrence of a triggering event in future periods.

Property, Equipment, and Software — The Board's property, equipment, and software are stated at cost less accumulated depreciation and amortization. Depreciation and amortization are calculated on a straight-line basis over the estimated useful lives of the assets, which range from three to ten years for furniture and equipment, ten to fifty years for building equipment and structures, and two to five years for software. Upon the sale or other disposition of a depreciable asset, the cost and related accumulated depreciation or amortization are removed and any gain or loss is recognized. Construction in process includes costs incurred for short-term and long-term projects that have not been placed into service; the majority of the balance represents long-term building enhancement projects.

Art Collections — The Board has collections of works of art, historical treasures, and similar assets. These collections are maintained and held for public exhibition in furtherance of public service. Proceeds from any sales of collections are used to acquire other items for collections. The cost of collections purchased by the Board is charged to expense in the year purchased and donated collection items are not recorded. The value of the Board's collections has not been determined.

Deferred Rent — Leases for certain space contain scheduled rent increases over the term of the lease. Rent abatements, lease incentives, and scheduled rent increases must be considered in determining the annual rent expense to be recognized. The deferred rent represents the difference between the actual lease payments and the rent expense recognized. Lease incentives impact deferred rent and are non-cash transactions.

Estimates — The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates. Significant items subject to such estimates include useful lives of property, equipment, and software; allowance for doubtful accounts receivable; accounts payable; retirement benefit obligation; postretirement benefit obligation; postemployment obligation; and commitments and contingencies.

Benefit Obligations — The Board records annual amounts relating to its pension, postretirement, and postemployment plans based on calculations that incorporate various actuarial and other assumptions, including discount rates, mortality, compensation increases, and health-care cost trends rates. The Board reviews the assumptions on an annual basis and makes modifications to the assumptions based on a variety of factors. The effect of the modifications to the assumptions is recorded in accumulated other comprehensive income and amortized to net periodic cost over future periods, which is presented in the accumulated other comprehensive income (loss) footnote.

Commitments and Contingencies — Liabilities for loss contingencies arising from claims, assessments, litigation, and other sources are recorded when it is probable that a liability has been incurred and the amount can be reasonably estimated. Legal costs incurred in connection with loss contingencies are expensed as incurred.

Tax Exempt Status — The Board, as a federal government entity, is not subject to state or local income taxes. Federal income tax on corporations does not apply to the Board.

Recently Issued Accounting Standards — In April 2015, the Financial Accounting Standards Board (FASB) issued ASU 2015-05, *Intangibles—Goodwill and Other—Internal-Use Software* (Subtopic 350-40): *Customer's Accounting for Fees Paid in a Cloud Computing Arrangement*. This update provides guidance to customers about whether a cloud computing arrangement includes a software license. If a cloud computing arrangement includes a software license, then the customer should account for the software license element of the arrangement consistent with the acquisition of other software licenses. If a cloud computing arrangement does not include a software license, the customer should account for the arrangement as a service contract. This update is effective for the Board for the year ending December 31, 2016, and is not expected to have a material effect on the Board's financial statements.

In May 2014, the FASB issued ASU 2014-09, *Revenue from Contracts with Customers* (Topic 606). The guidance is applicable to all contracts for the transfer of goods or services regardless of industry or type of transaction. This update requires recognition of revenue in a manner that reflects the consideration that the entity expects to receive in return for the transfer of goods or services to customers. In August 2015, the FASB issued 2015-14, *Revenue from Contracts with Customers* (Topic 606): *Deferral of the Effective Date*. This update is effective for the Board for the year ending December 31, 2019, and is not expected to have a material effect on the Board's financial statements since the Board reports annually and satisfies all material performance obligations prior to year-end.

In February 2016, the FASB issued ASU 2016-02, *Leases* (Topic 842). This update revises the model to assess how a lease should be classified and provides guidance for lessees, requiring lessees to present right-of-use assets and lease liabilities on the balance sheet. The update is effective no later than the year ended December 31, 2020, although earlier adoption is permitted. The Board is continuing to evaluate the effect of this new guidance on its consolidated financial statements.

(4) Property, Equipment, and Software

The following is a summary of the components of the Board's property, equipment, and software, at cost, less accumulated depreciation and amortization as of December 31, 2015 and 2014:

	As of December 31,	
	2015	2014
Land	$ 18,640,314	$ 18,640,314
Buildings and improvements	300,166,433	282,596,215
Construction in process	10,920,879	12,225,222
Furniture and equipment	82,888,372	79,542,184
Software in use	40,987,546	38,309,794
Software in process	5,275,429	1,040,801
Vehicles	2,098,155	1,835,191
Subtotal	460,977,128	434,189,721
Less accumulated depreciation and amortization	(201,710,107)	(177,865,292)
Property, equipment, and software – net	$ 259,267,021	$ 256,324,429

Construction in process include costs incurred in the current or prior years for long-term projects and building enhancements. In 2015, the Board recognized a loss of $6 million related to changes in an ongoing capital project; the loss is reflected on the Statements of Operations and the Statements of Cash Flows.

(5) Leases

Capital Leases — The Board entered into capital leases for copier equipment in 2012; the lease terms extend through 2016. In 2014, the Board terminated a portion of those leases of $313,000, which is a non-cash event excluded from the Statements of Cash Flows. Furniture and equipment includes capitalized leases of $1,258,000 as of 2015 and 2014. Accumulated depreciation includes $1,170,000 and $855,000 related to assets under capital leases as of 2015 and 2014, respectively. The depreciation expense for leased equipment is $315,000 and $339,000 for 2015 and 2014, respectively.

The future minimum lease payments required under the capital leases and the present value of the net minimum lease payments as of December 31, 2015, are as follows:

Year Ended December 31,	Amount
2016	197,004
Total minimum lease payments	197,004
Less amount representing maintenance	(41,428)
Net minimum lease payments	155,576
Less amount representing interest	(335)
Present value of net minimum lease payments	155,241
Less current maturities of capital lease payments	(155,241)
Long-term capital lease obligations	$ –

Operating Leases — The Board has entered into operating leases to secure office, training, data center, and warehouse space. Several of the leases are with Reserve Banks and other governmental agencies. Minimum annual payments under the multiyear operating leases having an initial or remaining noncancelable lease term in excess of one year at December 31, 2015, are as follows:

Years Ended December 31,	
2016	$ 27,324,938
2017	28,323,075
2018	29,002,059
2019	28,358,534
After 2019	95,014,040
	$208,022,646

Rental expenses under the multiyear operating leases were $24,291,000 and $15,854,000 for the years ended December 31, 2015 and 2014, respectively.

Deferred Rent — The Board recorded non-cash lease incentives of $1,480,000 and $17,829,000 for the years ended December 31, 2015 and 2014, respectively.

(6) Retirement Benefits

Substantially all of the Board's employees participate in the Retirement Plan for Employees of the Federal Reserve System (the System Plan). The System Plan provides retirement benefits to employees of the Board, the Reserve Banks, the Office of Employee Benefits of the Federal Reserve System (OEB), and certain employees of the Bureau. The Federal Reserve Bank of New York (FRBNY), on behalf of the System, recognizes the net assets and costs associated with the System Plan in its financial statements. Costs associated with the System Plan were not redistributed to the Board during the years ended December 31, 2015 and 2014.

Employees of the Board who became employed prior to 1984 are covered by a contributory defined benefits program under the System Plan. Employees of the Board who became employed after 1983 are covered by a non-contributory defined benefits program under the System Plan. FRBNY, on behalf of the System, funded $480 million during each of the years ended December 31, 2015 and 2014. The Board was not assessed a contribution for 2015 or 2014.

In October 2014, the Society of Actuaries released new mortality tables (RP-2014) and in October 2015 and 2014 released new mortality projection scales (MP-2015 and MP-2014, respectively) for use in valuations of benefits liabilities. The Board adopted the new RP-2014 mortality tables and MP-2014 mortality projection scales, adjusted based on the System's recent mortality experience and retirement rates of System retirees, which included the Board's workforce.

Benefits Equalization Plan — Board employees covered under the System Plan are also covered under a Benefits Equalization Plan (BEP). Benefits paid under the BEP are limited to those benefits that cannot be paid from the System Plan due to

limitations imposed by the Internal Revenue Code. Activity for the BEP as of December 31, 2015 and 2014, is summarized in the following tables:

	2015	2014
Change in projected benefit obligation:		
Benefit obligation – beginning of year	$ 20,727,400	$ 12,673,892
Service cost	2,409,059	1,125,134
Interest cost	1,245,933	705,339
Plan participants' contributions	–	–
Actuarial loss	3,653,624	6,238,231
Gross benefits paid	(40,388)	(15,196)
Benefit obligation – end of year	$ 27,995,628	$ 20,727,400
Accumulated benefit obligation – end of year	$ 3,651,148	$ 2,327,825
Weighted-average assumptions used to determine benefit obligation as of December 31:		
Discount rate	4.67%	4.25%
Rate of compensation increase	4.00%	4.00%
Change in plan assets:		
Fair value of plan assets – beginning of year	$ –	$ –
Employer contributions	40,388	15,196
Plan participants' contributions	–	–
Gross benefits paid	(40,388)	(15,196)
Fair value of plan assets – end of year	$ –	$ –
Funded status:		
Reconciliation of funded status – end of year:		
Fair value of plan assets	$ –	$ –
Benefit obligation (current)	55,947	31,281
Benefit obligation (noncurrent)	27,939,681	20,696,119
Funded status	(27,995,628)	(20,727,400)
Amount recognized – end of year	$(27,995,628)	$(20,727,400)
Amounts recognized in the balance sheets consist of:		
Asset	$ –	$ –
Liability – current	(55,947)	(31,281)
Liability – noncurrent	(27,939,681)	(20,696,119)
Net amount recognized	$(27,995,628)	$(20,727,400)
Amounts recognized in accumulated other comprehensive income consist of:		
Net actuarial loss	$ 7,727,778	$ 4,769,469
Prior service cost	322,032	421,610
Net amount recognized	$ 8,049,810	$ 5,191,079

Expected cash flows:	
Expected employer contributions – 2016	$ 55,947
Expected benefit payments:*	
2016	$ 55,947
2017	$ 147,044
2018	$ 175,007
2019	$ 206,773
2020	$ 245,437
2021–2025	$2,215,387

* Expected benefit payments to be made by the Board.

	2015	2014
Components of net periodic benefit cost:		
Service cost	$2,409,059	$1,125,134
Interest cost	1,245,933	705,339
Expected return on plan assets	–	–
Amortization:		
Actuarial (gain) loss	$ 695,315	$ (65,534)
Prior service cost	99,578	99,578
Net periodic benefit cost	$4,449,885	$1,864,517
Weighted-average assumptions used to determine net periodic benefit cost:		
Discount rate	4.25%	5.26%
Rate of compensation increase	4.00%	4.50%
Other changes in plan assets and benefit obligations recognized in other comprehensive income:		
Current year actuarial loss	$3,653,624	$6,238,231
Amortization of prior service cost	(99,578)	(99,578)
Amortization of actuarial gain (loss)	(695,315)	65,534
Total recognized in other comprehensive loss	$2,858,731	$6,204,187
Total recognized in net periodic benefit cost and other comprehensive income	$7,308,616	$8,068,704

Estimated amounts that will be amortized from accumulated other comprehensive income into net periodic benefit cost (credit) in 2016 are shown below:

Net actuarial loss	$382,763
Prior service cost	99,578
Total	$482,341

Pension Enhancement Plan — The Board also provides another non-qualified plan for officers of the Board. The retirement benefits covered under the Pension Enhancement Plan (PEP) increase the pension benefit calculation from 1.8 percent

above the Social Security integration level to 2.0 percent. Activity for the PEP as of December 31, 2015 and 2014, is summarized in the following tables:

	2015	2014
Change in projected benefit obligation:		
Benefit obligation – beginning of year	$ 24,857,488	$ 17,593,667
Service cost	1,037,235	676,722
Interest cost	1,178,955	961,720
Plan participants' contributions	–	–
Actuarial loss	22,672	5,824,802
Gross benefits paid	(220,089)	(199,423)
Benefit obligation – end of year	$ 26,876,261	$ 24,857,488
Accumulated benefit obligation – end of year	$ 21,116,567	$ 20,463,136
Weighted-average assumptions used to determine benefit obligation as of December 31:		
Discount rate	4.52%	4.12%
Rate of compensation increase	4.00%	4.00%
Change in plan assets:		
Fair value of plan assets – beginning of year	$ –	$ –
Employer contributions	220,089	199,423
Plan participants' contributions	–	–
Gross benefits paid	(220,089)	(199,423)
Fair value of plan assets – end of year	$ –	$ –
Funded status:		
Reconciliation of funded status – end of year:		
Fair value of plan assets	$ –	$ –
Benefit obligation – current	316,841	279,260
Benefit obligation – noncurrent	26,559,420	24,578,228
Funded status	(26,876,261)	(24,857,488)
Amount recognized – end of year	$(26,876,261)	$(24,857,488)
Amounts recognized in the balance sheets consist of:		
Asset	$ –	$ –
Liability – current	(316,841)	(279,260)
Liability – noncurrent	(26,559,420)	(24,578,228)
Net amount recognized	$(26,876,261)	$(24,857,488)
Amounts recognized in accumulated other comprehensive income consist of:		
Net actuarial loss	$ 9,519,292	$ 10,647,540
Prior service cost	586,303	1,117,698
Net amount recognized	$ 10,105,595	$ 11,765,238

Expected cash flows:	
Expected employer contributions – 2016	$ 316,841
Expected benefit payments:*	
2016	$ 316,841
2017	$ 400,581
2018	$ 501,407
2019	$ 617,820
2020	$ 741,206
2021–2025	$5,793,388

* Expected benefit payments to be made by the Board.

	2015	2014
Components of net periodic benefit cost:		
Service cost	$ 1,037,235	$ 676,722
Interest cost	1,178,955	961,720
Expected return on plan assets	–	–
Amortization:		
Actuarial loss	1,150,920	491,730
Prior service cost	531,395	531,395
Net periodic benefit cost	$ 3,898,505	$2,661,567
Weighted-average assumptions used to determine net periodic benefit cost:		
Discount rate	4.12%	5.06%
Rate of compensation increase	4.00%	4.50%
Other changes in plan assets and benefit obligations recognized in other comprehensive income:		
Current year actuarial loss	$ 22,672	$5,824,802
Amortization of prior service cost	(531,395)	(531,395)
Amortization of actuarial loss	(1,150,920)	(491,730)
Total recognized in other comprehensive (income) loss	$(1,659,643)	$4,801,677
Total recognized in net periodic benefit cost and other comprehensive income	$ 2,238,862	$7,463,244

Estimated amounts that will be amortized from accumulated other comprehensive income into net periodic benefit cost (credit) in 2016 are shown below:

Net actuarial loss	$ 710,100
Prior service cost	531,395
Total	$1,241,495

The total accumulated retirement benefit obligation includes a liability for a supplemental retirement agreement and a benefits equalization plan under the System's Thrift Plan. The total obligation as of December 31, 2015 and 2014, is summarized in the following table:

	2015	2014
Retirement benefit obligation:		
Benefit obligation – BEP	$27,995,628	$20,727,400
Benefit obligation – PEP	26,876,261	24,857,488
Additional benefit obligations	192,839	187,103
Total accumulated retirement benefit obligation	$55,064,728	$45,771,991

A relatively small number of Board employees participate in the Civil Service Retirement System or the Federal Employees' Retirement System. These defined benefit plans are administered by the U.S. Office of Personnel Management, which determines the required employer contribution levels. The Board's contributions to these plans totaled $913,000 and $891,000 in 2015 and 2014, respectively. The Board has no liability for future payments to retirees under these programs and is not accountable for the assets of the plans.

Employees of the Board may also participate in the System's Thrift Plan or Roth 401(k). Board contributions to members' accounts were $24,170,000 and $21,982,000 in 2015 and 2014, respectively.

(7) Postretirement Benefits

The Board provides certain life insurance programs for its active employees and retirees. Activity as of December 31, 2015 and 2014, is summarized in the following tables:

	2015	2014
Change in benefit obligation:		
Benefit obligation – beginning of year	$ 13,384,294	$ 11,693,311
Service cost	177,332	163,420
Interest cost	549,919	582,779
Plan participants' contributions	–	–
Actuarial loss	43,998	1,298,018
Gross benefits paid	(377,997)	(353,234)
Benefit obligation – end of year	$ 13,777,546	$ 13,384,294
Weighted-average assumptions used to determine benefit obligation as of December 31 – discount rate	4.41%	4.05%
Change in plan assets:		
Fair value of plan assets – beginning of year	$ –	$ –
Employer contributions	377,977	353,234
Gross benefits paid	(377,997)	(353,234)
Fair value of plan assets – end of year	$ –	$ –
Funded status:		
Reconciliation of funded status – end of year:		
Fair value of plan assets	$ –	$ –
Benefit obligation – current	486,512	415,179
Benefit obligation – noncurrent	13,291,034	12,969,115
Funded status	(13,777,546)	(13,384,294)
Amount recognized – end of year	$(13,777,546)	$(13,384,294)
Amounts recognized in the balance sheets consist of:		
Asset	$ –	$ –
Liability – current	(486,512)	(415,179)
Liability – noncurrent	(13,291,034)	(12,969,115)
Net amount recognized	$(13,777,546)	$(13,384,294)
Amounts recognized in accumulated other comprehensive income consist of:		
Net actuarial loss	$ 2,586,908	$ 2,742,925
Prior service credit	(149,084)	(174,574)
Net amount recognized	$ 2,437,824	$ 2,568,351

Expected cash flows:	
Expected employer contributions – 2016	$ 486,512
Expected benefit payments:*	
2016	$ 486,512
2017	$ 515,391
2018	$ 540,539
2019	$ 560,776
2020	$ 585,513
2021–2025	$3,381,199

* Expected benefit payments to be made by the Board.

	2015	2014
Components of net periodic benefit cost:		
Service cost	$ 177,332	$ 163,420
Interest cost	549,919	582,779
Expected return on plan assets	–	–
Amortization:		
Actuarial loss	200,016	55,654
Prior service credit	(25,490)	(25,490)
Net periodic benefit cost	$ 901,777	$ 776,363
Weighted-average assumptions used to determine net periodic benefit cost – discount rate	4.05%	4.97%
Other changes in plan assets and benefit obligations recognized in other comprehensive income:		
Current year actuarial loss	$ 43,998	$1,298,017
Amortization of prior service credit	25,490	25,490
Amortization of actuarial loss	(200,016)	(55,654)
Total recognized in other comprehensive (income) loss	$(130,528)	$1,267,853
Total recognized in net periodic benefit cost and other comprehensive income	$ 771,249	$2,044,216

Estimated amounts that will be amortized from accumulated other comprehensive income into net periodic benefit cost (credit) in 2016 are shown below:

Net actuarial loss	$164,632
Prior service credit	(25,490)
Total	$139,142

(8) Postemployment Benefits

The Board provides certain postemployment benefits to eligible former or inactive employees and their dependents during the period subsequent to employment but prior to retirement. Postemployment costs were actuarially determined using a December 31 measurement date and discount rates of 2.70 percent and 2.47 percent as of December 31, 2015 and 2014, respectively. The net periodic postemployment benefit cost recognized by the Board as of December 31, 2015 and 2014, was $740,000 and $1,448,000, respectively.

(9) Accumulated Other Comprehensive Income (Loss)

A reconciliation of beginning and ending balances of accumulated other comprehensive income (loss) for the years ended December 31, 2015 and 2014, is as follows:

	Amount Related to Defined Benefit Retirement Plans	Amount Related to Postretirement Benefits Other Than Pensions	Total Accumulated Other Comprehensive Income (Loss)
Balance – January 1, 2014	$ (5,950,453)	$(1,300,499)	$ (7,250,952)
Change in accumulated other comprehensive income (loss):			
Net actuarial loss arising during the year	(12,063,033)	(1,298,017)	(13,361,050)
Other comprehensive income before reclassifications	(12,063,033)	(1,298,017)	(13,361,050)
Amortization of prior service (credit) costs[a][b]	630,973	(25,490)	605,483
Amortization of net actuarial loss[a][b]	426,196	55,654	481,850
Amounts reclassified from accumulated other comprehensive income	1,057,169	30,164	1,087,333
Change in accumulated other comprehensive loss	(11,005,864)	(1,267,853)	(12,273,717)
Balance – December 31, 2014	(16,956,317)	(2,568,352)	(19,524,669)
Change in accumulated other comprehensive income (loss):			
Net actuarial loss arising during the year[a]	(3,676,296)	(43,998)	(3,720,294)
Other comprehensive income before reclassifications	(3,676,296)	(43,998)	(3,720,294)
Amortization of prior service (credit) costs[a][b]	630,973	(25,490)	605,483
Amortization of net actuarial loss[a][b]	1,846,235	200,016	2,046,251
Amounts reclassified from accumulated other comprehensive income	2,477,208	174,526	2,651,734
Change in accumulated other comprehensive income (loss)	(1,199,088)	130,528	(1,068,560)
Balance – December 31, 2015	$(18,155,405)	$(2,437,824)	$(20,593,229)

[a] These components of accumulated other comprehensive income are included in the computation of net periodic pension cost (see Notes 6 and 7 for additional details).

[b] These components of accumulated other comprehensive income are reflected in the “Retirement, insurance, and benefits” line on the Statements of Operations.

(10) Selected Transactions with the Reserve Banks

The Board performs certain functions for the Reserve Banks in conjunction with its responsibilities for the System, and the Reserve Banks provide certain administrative functions for the Board. The Board assesses the Reserve Banks for its operations, to include expenses related to its currency responsibilities, as well as for the funding the Board is required to provide to the Bureau and the Office. Activity related to the Board and Reserve Banks is summarized in the following table:

	2015	2014
For the years ended December 31:		
Assessments levied or to be levied on Reserve Banks for:		
Currency expenses	$ 689,198,549	$ 707,402,059
Board operations	705,000,000	590,000,000
Transfers of funds to the Bureau	489,700,000	563,000,000
Total assessments levied or to be levied on Reserve Banks	$1,883,898,549	$1,860,402,059
Funds returned from the Office and transferred to the Reserve Banks	$ –	$ 1,512,822
Board expenses charged to the Reserve Banks for data processing and office space	$ 326,953	$ 364,165
Reserve Bank expenses charged to the Board:		
Data processing and communication	$ 1,226,875	$ 1,250,884
Data center	858,985	$ 412,365
Office space	206,167	468,463
Contingency site	1,281,688	1,247,766
Total Reserve Bank expenses charged to the Board	$ 3,573,715	$ 3,379,478
As of December 31:		
Accounts receivable due from the Reserve Banks	$ 283,072	$ 495,018
Accounts payable due to the Reserve Banks	$ 356,937	$ 415,314

The Board contracted for audit services on behalf of entities that are included in the combined financial statements of the Reserve Banks. The entities reimburse the Board for the cost of the audit services. The Board accrued liabilities of $39,000 in audit services and recorded net receivables of $39,000 December 31, 2014. The Board did not have accrued liabilities in audit services or recorded net receivables as of December 31, 2015.

The OEB administers certain System benefit plans on behalf of the Board and the Reserve Banks, and costs associated with the OEB's activities are assessed to the Board and Reserve Banks. The Board was assessed $2,615,000 and $2,503,000 for the years ended December 31, 2015 and 2014, respectively. Activity related to the Board and the OEB is summarized in the following table:

	2015	2014
As of December 31:		
Accounts receivable due from the Office of Employee Benefits	$1,068,126	$1,338,349
Accounts payable due to the Office of Employee Benefits	$ 110,659	$ 79,528

(11) Federal Financial Institutions Examination Council

The Board is one of the five member agencies of the Federal Financial Institutions Examination Council (the Council), and currently performs certain administrative functions for the Council. The five agencies that are represented on the Council are the Board, Federal Deposit Insurance Corporation, National Credit Union Administration, Office of the Comptroller of the Currency, and the Bureau.

The Board's financial statements do not include financial data for the Council. Activity related to the Board and Council is summarized in the following table:

	2015	2014
For the years ended December 31:		
Council expenses charged to the Board:		
Assessments for operating expenses	$ 163,987	$ 154,633
Assessments for examiner education	1,228,101	1,047,803
Central Data Repository	1,049,087	1,197,920
Home Mortgage Disclosure Act/Community Reinvestment Act	874,584	882,464
Uniform Bank Performance Report	211,247	224,797
Total Council expenses charged to the Board	$3,527,006	$3,507,617
Board expenses charged to the Council:		
Data processing related services	$3,997,421	$4,611,282
Other administrative services	303,000	245,000
Total Board expenses charged to the Council	$4,300,421	$4,856,282
As of December 31:		
Accounts receivable due from the Council	$ 223,553	$ 221,749
Accounts payable due to the Council	$ 297,539	$ 132,125

(12) The Bureau of Consumer Financial Protection

Beginning July 2011, section 1017 of the Dodd-Frank Act requires the Board to fund the Bureau from the combined earnings of the System, in an amount determined by the Director of the Bureau to be reasonably necessary to carry out the authorities of the Bureau under federal consumer financial law, taking into account such other sums made available to the Bureau from the preceding year (or quarter of such year). The Dodd-Frank Act limits the amount to be transferred each fiscal year to a fixed percentage of the System's total operating expenses. The Bureau, in turn, transfers funds to the Board to fund their share of OIG operations. These transactions resulted in net amounts to the Bureau of $12,900,000 and $11,000,000 during calendar years 2015 and 2014, respectively.

(13) The Office of Financial Research

Section 155(c) of the Dodd-Frank Act requires the Board to provide an amount sufficient to cover the expenses of the Office for the two-year period following the date of the enactment (July 21, 2010). The expenses of the FSOC are included in the expenses of the Office. Over the two-year period, the Board provided $91,515,944 to cover the Office's expenses. In 2012, based on its review of actual expenditures and accruals through the end of the two-year period, the Office determined that $39,921,702 should be returned to the Board; the Board subsequently received and returned that amount to the Reserve Banks. At that time, the Office noted that an additional adjustment may be needed based upon the actual expenses incurred for work under the Dodd-Frank Act. In 2014, the Office performed its final review and determined that an additional $1,512,822 should be returned to the Board. That amount was returned to the Board and transferred to the Reserve Banks in September 2014 and no further financial activity is expected.

(14) Currency Costs

The Bureau of Engraving and Printing (BEP) is the sole supplier for currency printing and also provides currency retirement and meaningful access services. The Board provides or contracts for other services associated with currency, such as shipping, education, and quality assurance. The currency costs incurred by the Board for the years ended December 31, 2015 and 2014, are reflected in the following table:

	2015	2014
Expenses related to BEP services:		
Printing	$637,346,480	$656,810,224
Retirement	3,922,414	3,500,408
Meaningful access program	2,679,698	808,017
Subtotal related to BEP services	$643,948,592	$661,118,649
Other currency expenses:		
Shipping	$ 23,357,229	$ 27,460,180
Research and development	4,988,654	5,096,781
Quality assurance services	14,575,554	11,690,796
Education services	2,328,520	2,035,653
Subtotal other currency expenses	$ 45,249,957	$ 46,283,410
Total currency expenses	$689,198,549	$707,402,059

(15) Commitments and Contingencies

Commitments — The Board has entered into an agreement with the Federal Deposit Insurance Corporation and the Office of the Comptroller of the Currency, through the Council, to fund a portion of the enhancements and maintenance fees for a central data repository project that requires maintenance through 2019 and one two-year option period. The estimated Board expense to support this effort is $5 million.

Litigation and Contingent Liabilities — The Board is subject to contingent liabilities which arise from litigation cases and various business contracts. These contingent liabilities arise in the normal course of operations and their ultimate disposition is unknown. Based on information currently available to management, it is management's opinion that the expected outcome of these matters, in the aggregate, will not have a material adverse effect on the financial statements.

(16) Subsequent Events

There were no subsequent events that require adjustments to or disclosures in the financial statements as of December 31, 2015. Subsequent events were evaluated through March 7, 2016, which is the date the financial statements were available to be issued.

INDEPENDENT AUDITORS' REPORT ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH *GOVERNMENT AUDITING STANDARDS*

To the Board of Governors of the Federal Reserve System:

We have audited, in accordance with standards of the Public Company Accounting Oversight Board (United States), auditing standards generally accepted in the United States of America, and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the Board of Governors of the Federal Reserve System (the "Board"), which comprise the balance sheet as of December 31, 2015, and the related statements of operations and cash flows for the year then ended, and the related notes to the financial statements. We have issued our report thereon dated March 7, 2016.

As part of obtaining reasonable assurance about whether the Board's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, and contracts, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

This report is intended solely for the information and use of the Board of Governors of the Federal Reserve System and is not intended to be and should not be used by anyone other than those specified parties.

KPMG LLP

Washington, DC
March 7, 2016

Federal Reserve Banks Combined Financial Statements

The combined financial statements of the Federal Reserve Banks were audited by KPMG LLP, independent auditors, for the year ended December 31, 2015, and by Deloitte & Touche LLP, independent auditors, for the year ended December 31, 2014.

INDEPENDENT AUDITORS' REPORT

To the Board of Governors of the Federal Reserve System and the Boards of Directors of the Federal Reserve Banks:

We have audited the accompanying combined statement of condition of the Federal Reserve Banks (the "Reserve Banks") as of December 31, 2015, and the related combined statements of income and comprehensive income and changes in capital for the year then ended. These combined financial statements are the responsibility of the Division of Reserve Bank Operations and Payment Systems' management. Our responsibility is to express an opinion on these combined financial statements based on our audit. The accompanying combined financial statements of the Reserve Banks as of December 31, 2014 and for the year then ended were audited by other auditors whose report thereon dated March 11, 2015, expressed an unmodified opinion on those combined financial statements and contained an emphasis of matter paragraph that described the Reserve Banks' basis of accounting discussed in Note 3 to the 2014 combined financial statements.

We conducted our audit in accordance with the auditing standards of the Public Company Accounting Oversight Board (United States) and in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

As described in Note 3 to the combined financial statements, the Division of Reserve Bank Operations and Payment Systems has prepared these combined financial statements in conformity with the accounting principles established by the Board of Governors of the Federal Reserve System (the "Board"), as set forth in the Financial Accounting Manual for Federal Reserve Banks, which is a basis of accounting other than U.S. generally accepted accounting principles.

In our opinion, the combined financial statements referred to above present fairly, in all material respects, the financial position of the Reserve Banks as of December 31, 2015, and the results of its operations for the year then, on the basis of accounting described in Note 3.

KPMG LLP

Washington, DC
March 8, 2016

Federal Reserve Banks

Abbreviations

ABS	Asset-backed securities
ACH	Automated clearinghouse
AIG	American International Group, Inc.
AIGFP	American International Group, Inc. Financial Products Corp.
ASC	Accounting Standards Codification
ASU	Accounting Standards Update
BEP	Benefit Equalization Retirement Plan
Bureau	Bureau of Consumer Financial Protection
CDO	Collateralized debt obligation
CDS	Credit default swaps
CFE	Collateralized financing entity
CIP	Committee on Investment Performance (related to System Retirement Plan)
CMBS	Commercial mortgage-backed securities
FAM	*Financial Accounting Manual for Federal Reserve Banks*
FASB	Financial Accounting Standards Board
FAST Act	Fixing America's Surface Transportation Act
FOMC	Federal Open Market Committee
FRBC	Federal Reserve Bank of Cleveland
FRBKC	Federal Reserve Bank of Kansas City
FRBNY	Federal Reserve Bank of New York
FRBSL	Federal Reserve Bank of St. Louis
GAAP	Accounting principles generally accepted in the United States of America
GSE	Government-sponsored enterprise
IMF	International Monetary Fund
JPMC	JPMorgan Chase & Co.
LLC	Limited liability company
MBS	Mortgage-backed securities
ML	Maiden Lane LLC
ML II	Maiden Lane II LLC
ML III	Maiden Lane III LLC
MTM	Mark-to-market
RMBS	Residential mortgage-backed securities
OEB	Office of Employee Benefits of the Federal Reserve System
SBA	Small Business Administration
SDR	Special drawing rights
SERP	Supplemental Retirement Plan for Select Officers of the Federal Reserve Banks
SOMA	System Open Market Account
STRIPS	Separate Trading of Registered Interest and Principal of Securities
TALF	Term Asset-Backed Securities Loan Facility

TBA	To be announced
TDF	Term Deposit Facility
TRS	Total return swap
VIE	Variable interest entity

Combined Statements of Condition
As of December 31, 2015 and December 31, 2014
(in millions)

		2015	2014
ASSETS			
Gold certificates		$ 11,037	$ 11,037
Special drawing rights certificates		5,200	5,200
Coin		1,890	1,873
Loans	Note 4	115	145
System Open Market Account:	Note 5		
Treasury securities, net (of which $18,960 and $11,144 is lent as of December 31, 2015 and 2014, respectively)		2,580,676	2,596,241
Government-sponsored enterprise debt securities, net (of which $146 and $633 is lent as of December 31, 2015 and 2014, respectively)		33,748	39,990
Federal agency and government-sponsored enterprise mortgage-backed securities, net		1,800,449	1,789,083
Foreign currency denominated investments, net		19,567	20,900
Central bank liquidity swaps		997	1,528
Accrued interest receivable		25,418	25,644
Other assets		14	29
Investments held by consolidated variable interest entities (of which $1,778 and $1,808 is measured at fair value as of December 31, 2015 and 2014, respectively)	Note 6	1,778	1,811
Bank premises and equipment, net	Note 7	2,603	2,630
Items in process of collection		210	86
Deferred asset - remittances to the Treasury		-	667
Other assets		1,063	910
Total assets		$4,484,765	$4,497,774
LIABILITIES AND CAPITAL			
Federal Reserve notes outstanding, net		$1,379,551	$1,298,725
System Open Market Account:	Note 5		
Securities sold under agreements to repurchase		712,401	509,837
Other liabilities		508	830
Liabilities of consolidated variable interest entities (of which $21 and $41 is measured at fair value as of December 31, 2015 and 2014, respectively)	Note 6	57	127
Deposits:			
Depository institutions		1,977,166	2,377,996
Treasury, general account		333,447	223,452
Other deposits		36,532	25,560
Interest payable to depository institutions		252	124
Accrued benefit costs	Notes 9 and 10	2,892	3,089
Deferred credit items		246	641
Accrued remittances to the Treasury		1,953	-
Other liabilities		252	249
Total liabilities		4,445,257	4,440,630
Capital paid-in		29,508	28,572
Surplus (including accumulated other comprehensive loss of $3,802 and $4,168 at December 31, 2015 and 2014, respectively)		10,000	28,572
Total capital		39,508	57,144
Total liabilities and capital		$4,484,765	$4,497,774

The accompanying notes are an integral part of these combined financial statements.

Combined Statements of Income and Comprehensive Income
For the years ended December 31, 2015 and December 31, 2014
(in millions)

		2015	2014
INTEREST INCOME			
Loans	Note 4	$ -	2
System Open Market Account:	Note 5		
Treasury securities, net		63,317	63,011
Government-sponsored enterprise debt securities, net		1,330	1,579
Federal agency and government-sponsored enterprise mortgage-backed securities, net		48,931	51,264
Foreign currency denominated investments, net		31	78
Central bank liquidity swaps		1	1
Investments held by consolidated variable interest entities	Note 6	4	77
Total interest income		113,614	116,012
INTEREST EXPENSE			
System Open Market Account:	Note 5		
Securities sold under agreements to repurchase		248	112
Other		2	2
Deposits:			
Depository institutions		6,846	6,705
Term Deposit Facility		89	156
Total interest expense		7,185	6,975
Net interest income		106,429	109,037
NON-INTEREST INCOME (LOSS)			
System Open Market Account:	Note 5		
Federal agency and government-sponsored enterprise mortgage-backed securities gains, net		43	81
Foreign currency translation losses, net		(1,382)	(2,907)
Other		16	14
Investments held by consolidated variable interest entities gains, net	Note 6	35	37
Income from services		429	433
Reimbursable services to government agencies		650	570
Other		63	59
Total non-interest loss		(146)	(1,713)
OPERATING EXPENSES			
Salaries and benefits		2,847	2,721
Occupancy		326	314
Equipment		182	175
Net periodic pension expense	Note 9	563	383
Other		577	602
Assessments:			
Board of Governors operating expenses and currency costs		1,394	1,301
Bureau of Consumer Financial Protection		490	563
Total operating expenses		6,379	6,059
Net income before providing for remittances to the Treasury		99,904	101,265
Earnings remittances to the Treasury:	Note 13		
Interest on Federal Reserve notes		91,143	96,902
Required by the Federal Reserve Act, as amended by the FAST Act	Note 3o	25,956	-
Total earnings remittances to the Treasury		117,099	96,902
Net (loss) income after providing for remittances to the Treasury		(17,195)	4,363
Change in prior service costs related to benefit plans	Note 10	86	97
Change in actuarial (losses) gains related to benefit plans	Note 10	280	(1,709)
Total other comprehensive income (loss)		366	(1,612)
Comprehensive (loss) income		$ (16,829)	$ 2,751

The accompanying notes are an integral part of these combined financial statements.

Combined Statements of Changes in Capital
For the years ended December 31, 2015 and December 31, 2014
(in millions, except share data)

	Capital paid-in	Surplus			Total capital
		Net income retained	Accumulated other comprehensive (loss)	Total surplus	
Balance at December 31, 2013 (550,136,936 shares)	$27,507	$ 30,063	$(2,556)	$ 27,507	$ 55,014
Net change in capital stock issued (21,299,030 shares)	1,065	-	-	-	1,065
Comprehensive income:					
Net income	-	4,363	-	4,363	4,363
Other comprehensive loss	-	-	(1,612)	(1,612)	(1,612)
Dividends on capital stock	-	(1,686)	-	(1,686)	(1,686)
Net change in capital	1,065	2,677	(1,612)	1,065	2,130
Balance at December 31, 2014 (571,435,966 shares)	$28,572	$ 32,740	$(4,168)	$ 28,572	$ 57,144
Net change in capital stock issued (18,730,089 shares)	936	-	-	-	936
Comprehensive income:					
Net income (loss)	-	(17,195)	-	(17,195)	(17,195)
Other comprehensive income	-	-	366	366	366
Dividends on capital stock	-	(1,743)	-	(1,743)	(1,743)
Net change in capital	936	(18,938)	366	(18,572)	(17,636)
Balance at December 31, 2015 (590,166,055 shares)	$29,508	$ 13,802	$(3,802)	$ 10,000	$ 39,508

The accompanying notes are an integral part of these combined financial statements.

(1) Structure

The Federal Reserve Banks (Reserve Banks) are part of the Federal Reserve System (System) created by Congress under the Federal Reserve Act of 1913 (Federal Reserve Act), which established the central bank of the United States. The Reserve Banks are chartered by the federal government and possess a unique set of governmental, corporate, and central bank characteristics.

In accordance with the Federal Reserve Act, supervision and control of each Reserve Bank is exercised by a board of directors. The Federal Reserve Act specifies the composition of the board of directors for each of the Reserve Banks. Each board is composed of nine members serving three-year terms: three directors, including those designated as chairman and deputy chairman, are appointed by the Board of Governors of the Federal Reserve System (Board of Governors) to represent the public, and six directors are elected by member banks. Banks that are members of the System include all nationally-chartered banks and any state-chartered banks that apply and are approved for membership. Member banks are divided into three classes according to size. Member banks in each class elect one director representing member banks and one representing the public. In any election of directors, each member bank receives one vote, regardless of the number of shares of Reserve Bank stock it holds.

In addition to the 12 Reserve Banks, the System also consists, in part, of the Board of Governors and the Federal Open Market Committee (FOMC). The Board of Governors, an independent federal agency, is charged by the Federal Reserve Act with a number of specific duties, including general supervision over the Reserve Banks. The FOMC is composed of members of the Board of Governors, the president of the Federal Reserve Bank of New York (FRBNY), and, on a rotating basis, four other Reserve Bank presidents.

(2) Operations and Services

The Reserve Banks perform a variety of services and operations. These functions include participating in formulating and conducting monetary policy; participating in the payment system, including transfers of funds, automated clearinghouse (ACH) operations, and check collection; distributing coin and currency; performing fiscal agency functions for the U.S. Department of the Treasury (Treasury), certain federal agencies, and other entities; serving as the federal government's bank; providing short-term loans to depository institutions; providing loans to participants in programs or facilities with broad-based eligibility in unusual and exigent circumstances; serving consumers and communities by providing educational materials and information regarding financial consumer protection rights and laws and information on community development programs and activities; and supervising bank holding companies, state member banks, savings and loan holding companies, U.S. offices of foreign banking organizations, and designated financial market utilities pursuant to authority delegated by the Board of Governors. Certain services are provided to foreign and international monetary authorities, primarily by the FRBNY.

The FOMC, in conducting monetary policy, establishes policy regarding domestic open market operations, oversees these operations, and issues authorizations and directives to the FRBNY to execute transactions. The FOMC authorizes and directs the FRBNY to conduct operations in domestic markets, including the direct purchase and sale of Treasury securities, government-sponsored enterprise (GSE) debt securities, and federal agency and GSE mortgage-backed securities

(MBS); the purchase of these securities under agreements to resell; and the sale of these securities under agreements to repurchase. The FRBNY holds the resulting securities and agreements in a portfolio known as the System Open Market Account (SOMA). The FRBNY is authorized and directed to lend the Treasury securities and GSE debt securities that are held in the SOMA.

To be prepared to counter disorderly conditions in foreign exchange markets or to meet other needs specified by the FOMC to carry out the System's central bank responsibilities, the FOMC has authorized and directed the FRBNY to execute spot and forward foreign exchange transactions in 14 foreign currencies, to hold balances in those currencies, and to invest such foreign currency holdings, while maintaining adequate liquidity. The FRBNY holds these securities and obligations in the SOMA. The FOMC has also authorized the FRBNY to maintain reciprocal currency arrangements with the Bank of Canada and the Bank of Mexico in the maximum amounts of $2 billion and $3 billion, respectively, and to warehouse foreign currencies for the Treasury and the Exchange Stabilization Fund in the maximum amount of $5 billion.

Because of the global character of bank funding markets, the System has at times coordinated with other central banks to provide liquidity. The FOMC authorized and directed the FRBNY to establish U.S. dollar liquidity and reciprocal foreign currency liquidity swap lines with the Bank of Canada, the Bank of England, the European Central Bank, the Bank of Japan, and the Swiss National Bank. The FRBNY holds amounts outstanding under these swap lines in the SOMA. These swap lines, which were originally established as temporary arrangements, were converted to standing arrangements on October 31, 2013, and will remain in place until further notice.

Although the Reserve Banks are separate legal entities, they collaborate on the delivery of certain services to achieve greater efficiency and effectiveness. This collaboration takes the form of centralized operations and product or function offices that have responsibility for the delivery of certain services on behalf of the Reserve Banks. Various operational and management models are used and are supported by service agreements between the Reserve Banks. In some cases, costs incurred by a Reserve Bank for services provided to other Reserve Banks are not shared; in other cases, the Reserve Banks are reimbursed for costs incurred in providing services to other Reserve Banks.

(3) Significant Accounting Policies

Accounting principles for entities with the unique powers and responsibilities of the nation's central bank have not been formulated by accounting standard-setting bodies. The Board of Governors has developed specialized accounting principles and practices that it considers to be appropriate for the nature and function of a central bank. These accounting principles and practices are documented in the Financial Accounting Manual for Federal Reserve Banks (FAM), which is issued by the Board of Governors. The Reserve Banks are required to adopt and apply accounting policies and practices that are consistent with the FAM. The combined financial statements and associated disclosures have been prepared in accordance with the FAM.

Limited differences exist between the accounting principles and practices in the FAM and accounting principles generally accepted in the United States of America (GAAP), due to the unique nature of the Reserve Banks' powers and responsibilities as part of the nation's central bank and given the System's unique

responsibility to conduct monetary policy. The primary differences are the presentation of all SOMA securities holdings at amortized cost, adjusted for credit impairment, if any, the recording of all SOMA securities on a settlement-date basis, and the use of straight-line amortization for Treasury securities, GSE debt securities, and foreign currency denominated investments. Amortized cost, rather than the fair value presentation, more appropriately reflects the financial position associated with the Reserve Banks' securities holdings given the System's unique responsibility to conduct monetary policy. Although the application of fair value measurements to the securities holdings may result in values substantially greater or less than their carrying values, these unrealized changes in value have no direct effect on the quantity of reserves available to the banking system or on the ability of the Reserve Banks, as the central bank, to meet their financial obligations and responsibilities. Both the domestic and foreign components of the SOMA portfolio may involve transactions that result in gains or losses when holdings are sold before maturity. Decisions regarding securities and foreign currency transactions, including their purchase and sale, are motivated by monetary policy objectives rather than profit. Accordingly, fair values, earnings, and gains or losses resulting from the sale of such securities and currencies are incidental to open market operations and do not motivate decisions related to policy or open market activities. Accounting for these securities on a settlement-date basis, rather than the trade-date basis required by GAAP, better reflects the timing of the transaction's effect on the quantity of reserves in the banking system. The cost bases of Treasury securities, GSE debt securities, and foreign government debt instruments are adjusted for amortization of premiums or accretion of discounts on a straight-line basis, rather than using the interest method required by GAAP.

In addition, the Reserve Banks do not present a Combined Statement of Cash Flows as required by GAAP because the liquidity and cash position of the Reserve Banks are not a primary concern given the Reserve Banks' unique powers and responsibilities as a central bank. Other information regarding the Reserve Banks' activities is provided in, or may be derived from, the Combined Statements of Condition, Income and Comprehensive Income, and Changes in Capital, and the accompanying notes to the combined financial statements. Other than those described above, there are no significant differences between the policies outlined in the FAM and GAAP.

Preparing the combined financial statements in conformity with the FAM requires management to make certain estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent liabilities at the date of the combined financial statements, and the reported amounts of income and expenses during the reporting period. Actual results could differ from those estimates.

Certain amounts relating to the prior year have been reclassified in the Combined Statements of Income and Comprehensive Income to conform to current year presentation. An amount, $383 million, previously reported for the year ended December 31, 2014 as a component of "Operating Expense: Salaries and benefits" has been reclassified into a new line titled "Operating Expense: Net periodic pension expense."

Significant accounts and accounting policies are explained below.

a. Consolidation

The combined financial statements include the accounts and results of operations of the Reserve Banks as well as several variable interest entities (VIEs), which include Maiden Lane Limited Liability Company (LLC) (ML), Maiden Lane II LLC (ML II), Maiden Lane III LLC (ML III), and Term Asset-Backed Securities Loan Facility (TALF) LLC. The consolidation of the VIEs was assessed in accordance with Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) Topic 810 (ASC 810), *Consolidation*, which requires a VIE to be consolidated by its controlling financial interest holder. Intercompany balances and transactions have been eliminated in consolidation. See Note 6 for additional information on the VIEs. The combined financial statements of the Reserve Banks also include accounts and results of operations of Maiden and Nassau LLC, a Delaware limited liability company (LLC) wholly-owned by the FRBNY, which was formed to own and operate the FRBNY-owned 33 Maiden Lane building.

A Reserve Bank consolidates a VIE if it has a controlling financial interest, which is defined as the power to direct the significant economic activities of the entity and the obligation to absorb losses or the right to receive benefits of the entity that could potentially be significant to the VIE. To determine whether it is the controlling financial interest holder of a VIE, the Reserve Bank evaluates the VIE's design, capital structure, and relationships with the variable interest holders. The Reserve Bank reconsiders whether it has a controlling financial interest in a VIE, as required by ASC 810, at each reporting date or if there is an event that requires consideration.

The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank Act) established the Bureau of Consumer Financial Protection (Bureau) as an independent bureau within the System that has supervisory authority over some institutions previously supervised by the Reserve Banks in connection with those institutions' compliance with consumer protection statutes. Section 1017 of the Dodd-Frank Act provides that the financial statements of the Bureau are not to be consolidated with those of the Board of Governors or the System. The Board of Governors funds the Bureau through assessments on the Reserve Banks as required by the Dodd-Frank Act. The Reserve Banks reviewed the law and evaluated the design of and their relationship to the Bureau and determined that it should not be consolidated in the Banks' combined financial statements.

b. Gold and Special Drawing Rights Certificates

The Secretary of the Treasury is authorized to issue gold certificates to the Reserve Banks. Upon authorization, the Reserve Banks acquire gold certificates by crediting equivalent amounts in dollars to the account established for the Treasury. The gold certificates held by the Reserve Banks are required to be backed by the gold owned by the Treasury. The Treasury may reacquire the gold certificates at any time, and the Reserve Banks must deliver them to the Treasury. At such time, the Treasury's account is charged, and the Reserve Banks' gold certificate accounts are reduced. The value of gold for purposes of backing the gold certificates is set by law at $42 2/9 per fine troy ounce. Gold certificates are recorded by the Banks at original cost. The Board of Governors allocates the gold certificates among the Reserve Banks once a year based on each Reserve Bank's average Federal Reserve notes outstanding during the preceding 12 months.

Special drawing rights (SDR) are issued by the International Monetary Fund (IMF) to its members in proportion to each member's quota in the IMF at the time of issuance. SDRs serve as a supplement to international monetary reserves and may be transferred from one national monetary authority to another. Under the law providing for U.S. participation in the SDR system, the Secretary of the Treasury is authorized to issue SDR certificates to the Reserve Banks. When SDR certificates are issued to the Reserve Banks, equivalent amounts in U.S. dollars are credited to the account established for the Treasury and the Reserve Banks' SDR certificate accounts are increased. The Reserve Banks are required to purchase SDR certificates, at the direction of the Treasury, for the purpose of financing SDR acquisitions or for financing exchange-stabilization operations. At the time SDR certificate transactions occur, the Board of Governors allocates the SDR certificates among the Reserve Banks based upon each Reserve Bank's Federal Reserve notes outstanding at the end of the preceding calendar year. SDR certificates are recorded by the Banks at original cost.

c. Coin

The amount reported as coin in the Combined Statements of Condition represents the face value of all United States coin held by the Reserve Banks. The Reserve Banks buy coin at face value from the U.S. Mint in order to fill depository institution orders.

d. Loans

Loans to depository institutions are reported at their outstanding principal balances and interest income is recognized on an accrual basis.

The interest income on TALF loans was recognized based on the contracted rate and is reported as a component of "Interest Income: Loans" in the Combined Statements of Income and Comprehensive Income.

Loans are impaired when current information and events indicate that it is probable that the Reserve Bank will not receive the principal and interest that are due in accordance with the contractual terms of the loan agreement. Impaired loans are evaluated to determine whether an allowance for loan loss is required. The Reserve Banks have developed procedures for assessing the adequacy of any allowance for loan losses using all available information to identify incurred losses. This assessment includes monitoring information obtained from banking supervisors, borrowers, and other sources to assess the credit condition of the borrowers and, as appropriate, evaluating collateral values. Generally, the Reserve Banks would discontinue recognizing interest income on impaired loans until the borrower's repayment performance demonstrates principal and interest would be received in accordance with the terms of the loan agreement. If the Reserve Banks discontinue recording interest on an impaired loan, cash payments are first applied to principal until the loan balance is reduced to zero; subsequent payments are applied as recoveries of amounts previously deemed uncollectible, if any, and then as interest income.

e. Securities Purchased Under Agreements to Resell, Securities Sold Under Agreements to Repurchase, and Securities Lending

The FRBNY may engage in purchases of securities with primary dealers under agreements to resell (repurchase transactions). These repurchase transactions are typically settled through a tri-party arrangement. In the United States, there are two commercial custodial banks that provide these services. In a tri-party arrangement, a commercial custodial bank manages the collateral clearing, settlement,

pricing, and pledging, and provides cash and securities custodial services for and on behalf of the FRBNY and counterparty. The collateral pledged must exceed the principal amount of the transaction by a margin determined by the FRBNY for each class and maturity of acceptable collateral. Collateral designated by the FRBNY as acceptable under repurchase transactions primarily includes Treasury securities (including Treasury Inflation-Protected Securities, Separate Trading of Registered Interest and Principal of Securities (STRIPS) Treasury securities, and Treasury Floating Rate Notes); direct obligations of several federal and GSE-related agencies, including Federal National Mortgage Association, Federal Home Loan Mortgage Corporation, and Federal Home Loan Banks; and pass-through federal agency and GSE MBS. The repurchase transactions are accounted for as financing transactions with the associated interest income recognized over the life of the transaction. These transactions are reported at their contractual amounts as "System Open Market Account: Securities purchased under agreements to resell" and the related accrued interest receivable is reported as a component of "System Open Market Account: Accrued interest receivable" in the Combined Statements of Condition.

The FRBNY may engage in sales of securities under agreements to repurchase with primary dealers and with a set of expanded counterparties that includes banks, savings associations, GSEs, and domestic money market funds (Primary dealer and expanded counterparties reverse repurchase agreements). These reverse repurchase transactions are designed to have a margin of zero and are settled through a tri-party arrangement, similar to repurchase transactions. Reverse repurchase transactions may also be executed with foreign official and international account holders as part of a service offering. Reverse repurchase agreements are collateralized by a pledge of an amount of Treasury securities, GSE debt securities, or federal agency and GSE MBS that are held in the SOMA. Reverse repurchase transactions are accounted for as financing transactions, and the associated interest expense is recognized over the life of the transaction. These transactions are reported at their contractual amounts as "System Open Market Account: Securities sold under agreements to repurchase" and the related accrued interest payable is reported as a component of "System Open Market Account: Other liabilities" in the Combined Statements of Condition.

Treasury securities and GSE debt securities held in the SOMA may be lent to primary dealers, typically overnight, to facilitate the effective functioning of the domestic securities markets. The amortized cost basis of securities lent continues to be reported as "System Open Market Account: Treasury securities, net" and "System Open Market Account: Government-sponsored enterprise debt securities, net," as appropriate, in the Combined Statements of Condition. Securities lending transactions are fully collateralized by Treasury securities based on the fair values of the securities lent increased by a margin determined by the FRBNY. The FRBNY charges the primary dealer a fee for borrowing securities, and these fees are reported as a component of "Non-interest income (loss): System Open Market Account: Other" in the Combined Statements of Income and Comprehensive Income.

Activity related to securities purchased under agreements to resell, securities sold under agreements to repurchase, and securities lending is allocated to each of the Reserve Banks on a percentage basis derived from an annual settlement of the interdistrict settlement account that occurs in the second quarter of each year.

f. Treasury Securities, Government-Sponsored Enterprise Debt Securities, Federal Agency and Government-Sponsored Enterprise Mortgage-Backed Securities, and Foreign Currency Denominated Investments

Interest income on Treasury securities, GSE debt securities, and foreign currency denominated investments included in the SOMA is accrued using the straight-line method. Interest income on federal agency and GSE MBS is accrued using the interest method and includes amortization of premiums, accretion of discounts, and gains or losses associated with principal paydowns. Premiums and discounts related to federal agency and GSE MBS are amortized or accreted over the term of the security to stated maturity, and the amortization of premiums and accretion of discounts are accelerated when principal payments are received. Gains and losses resulting from sales of securities are determined by specific issue based on average cost. Treasury securities, GSE debt securities, and federal agency and GSE MBS are reported net of premiums and discounts in the Combined Statements of Condition and interest income on those securities is reported net of the amortization of premiums and accretion of discounts in the Combined Statements of Income and Comprehensive Income.

In addition to outright purchases of federal agency and GSE MBS that are held in the SOMA, the FRBNY enters into dollar roll transactions (dollar rolls), which primarily involve an initial transaction to purchase or sell "to be announced" (TBA) MBS for delivery in the current month combined with a simultaneous agreement to sell or purchase TBA MBS on a specified future date. During the years ended December 31, 2015 and 2014, the FRBNY executed dollar rolls to facilitate settlement of outstanding purchases of federal agency and GSE MBS. The FRBNY accounts for dollar rolls as individual purchases and sales, on a settlement-date basis. Accounting for these transactions as purchases and sales, rather than as financing transactions, is appropriate because the purchase or sale component of the MBS TBA dollar roll is paired off or assigned prior to settlement and, as a result, there is no transfer and return of securities. The FRBNY also conducts small-value exercises from time to time for the purpose of testing operational readiness. Small-value exercises may include sales of federal agency and GSE MBS. Net gains (losses) resulting from MBS transactions are reported as a component of "Non-interest income (loss): System Open Market Account: Federal agency and government-sponsored enterprise mortgage-backed securities gains, net" in the Combined Statements of Income and Comprehensive Income.

Foreign currency denominated investments, which can include foreign currency deposits, securities purchased under agreements to resell, and government debt instruments, are revalued daily at current foreign currency market exchange rates in order to report these assets in U.S. dollars. Foreign currency translation gains and losses that result from the daily revaluation of foreign currency denominated investments are reported as "Non-interest income (loss): System Open Market Account: Foreign currency translation losses, net" in the Combined Statements of Income and Comprehensive Income.

Because the FRBNY enters into commitments to buy Treasury securities, federal agency and GSE MBS, and foreign government debt instruments and records the related securities on a settlement-date basis in accordance with the FAM, the related outstanding commitments are not reflected in the Combined Statements of Condition.

Activity related to Treasury securities, GSE debt securities, and federal agency and GSE MBS, including the premiums, discounts, and realized gains and losses, is allocated to each Reserve Bank on a percentage basis derived from an annual settlement of the interdistrict settlement account that occurs in the second quarter of each year. Activity related to foreign currency denominated investments, including the premiums, discounts, and realized and unrealized gains and losses, is allocated in the first quarter of each year to each Reserve Bank based on the ratio of each Reserve Bank's capital and surplus to the Reserve Banks' aggregate capital and surplus at the preceding December 31.

The FRBNY is authorized to hold foreign currency working balances and execute foreign exchange contracts to facilitate international payments and currency transactions it makes on behalf of foreign central bank and U.S. official institution customers. These foreign currency working balances and contracts are not related to FRBNY's monetary policy operations. Foreign currency working balances are reported as a component of "Other assets" in the Combined Statements of Condition and the related foreign currency translation gains and losses that result from the daily revaluation of the foreign currency working balances and contracts are reported as a component of "Non-interest income (loss): Other" in the Combined Statements of Income and Comprehensive Income.

g. Central Bank Liquidity Swaps

Central bank liquidity swaps, which are transacted between the FRBNY and a foreign central bank, can be structured as either U.S. dollar or foreign currency liquidity swap arrangements.

Central bank liquidity swaps activity, including the related income and expense, is allocated in the first quarter of each year to each Reserve Bank based on the ratio of each Reserve Bank's capital and surplus to aggregate capital and surplus at the preceding December 31. The foreign currency amounts associated with these central bank liquidity swap arrangements are revalued daily at current foreign currency market exchange rates.

U.S. dollar liquidity swaps

At the initiation of each U.S. dollar liquidity swap transaction, the foreign central bank transfers a specified amount of its currency to a restricted account for the FRBNY in exchange for U.S. dollars at the prevailing market exchange rate. Concurrent with this transaction, the FRBNY and the foreign central bank agree to a second transaction that obligates the foreign central bank to return the U.S. dollars and the FRBNY to return the foreign currency on a specified future date at the same exchange rate as the initial transaction. The foreign currency amounts that the FRBNY acquires are reported as "System Open Market Account: Central bank liquidity swaps" in the Combined Statements of Condition. Because the swap transaction will be unwound at the same U.S. dollar amount and exchange rate that were used in the initial transaction, the recorded value of the foreign currency amounts is not affected by changes in the market exchange rate.

The foreign central bank compensates the FRBNY based on the amount outstanding and the rate under the swap agreement. The FRBNY recognizes compensation during the term of the swap transaction, which is reported as "Interest income: System Open Market Account: Central bank liquidity swaps" in the Combined Statements of Income and Comprehensive Income.

Foreign currency liquidity swaps

Foreign currency liquidity swap transactions involve the transfer by the FRBNY, at the prevailing market exchange rate, of a specified amount of U.S. dollars to an account for the foreign central bank in exchange for its currency. The foreign currency amounts that the FRBNY receives are recorded as a liability.

h. Consolidated VIEs – Investments and Liabilities

The investments held by consolidated VIEs consist primarily of short-term investments with maturities of greater than three months and less than one year, cash and cash equivalents, and swap contracts. Swap contracts consist of credit default swaps (CDS). Investments are reported as "Investments held by consolidated variable interest entities" in the Combined Statements of Condition. Changes in fair value of the investments are recorded in "Non-interest income (loss): Investments held by consolidated variable interest entities gains, net" in the Combined Statements of Income and Comprehensive Income.

Investments in debt securities are accounted for in accordance with FASB ASC Topic 320, *Investments – Debt and Equity Securities*, and the VIEs elected the fair value option for all eligible assets and liabilities in accordance with FASB ASC Topic 825 (ASC 825), *Financial Instruments*. Other financial instruments, including swap contracts, are recorded at fair value in accordance with FASB ASC Topic 815 (ASC 815), *Derivatives and Hedging*.

The liabilities of consolidated VIEs consist primarily of swap contracts, cash collateral on swap contracts, and accruals for operating expenses. Swap contracts are recorded at fair value in accordance with ASC 815. Liabilities are reported as "Liabilities of consolidated variable interest entities" in the Combined Statements of Condition. Changes in fair value of the liabilities are recorded in "Non-interest income (loss): Investments held by consolidated variable interest entities gains, net" in the Combined Statements of Income and Comprehensive Income.

i. Bank Premises, Equipment, and Software

Reserve Bank premises and equipment are stated at cost less accumulated depreciation. Depreciation is calculated on a straight-line basis over the estimated useful lives of the assets, which range from 2 to 50 years. Major alterations, renovations, and improvements are capitalized at cost as additions to the asset accounts and are depreciated over the remaining useful life of the asset or, if appropriate, over the unique useful life of the alteration, renovation, or improvement. Maintenance, repairs, and minor replacements are charged to operating expense in the year incurred. Reserve Banks may transfer assets to other Reserve Banks or may lease property of other Reserve Banks.

Costs incurred to acquire software are capitalized based on the purchase price. Costs incurred during the application development stage to develop internal-use software are capitalized based on the cost of direct services and materials associated with designing, coding, installing, and testing the software. Capitalized software costs are amortized on a straight-line basis over the estimated useful lives of the software applications, which generally range from two to five years. Maintenance costs and minor replacements related to software are charged to operating expense in the year incurred. Leased assets that meet the criteria of ASC 840, *Leases* are capitalized and amortized over the shorter of the useful life of the asset or the term of the lease.

Capitalized assets, including software, buildings, leasehold improvements, furniture, and equipment, are impaired and an adjustment is recorded when events or changes in circumstances indicate that the carrying amount of assets or asset groups is not recoverable and significantly exceeds the assets' fair value.

j. Federal Reserve Notes

Federal Reserve notes are the circulating currency of the United States. These notes, which are identified as issued to a specific Reserve Bank, must be fully collateralized. All of the Reserve Banks' assets are eligible to be pledged as collateral. The collateral value is equal to the book value of the collateral tendered with the exception of securities, for which the collateral value is equal to the par value of the securities tendered. The par value of securities sold under agreements to repurchase is deducted from the eligible collateral value.

The Board of Governors may, at any time, call upon a Reserve Bank for additional security to adequately collateralize outstanding Federal Reserve notes. To satisfy the obligation to provide sufficient collateral for outstanding Federal Reserve notes, the Reserve Banks have entered into an agreement that provides for certain assets of the Reserve Banks to be jointly pledged as collateral for the Federal Reserve notes issued to all Reserve Banks. In the event that this collateral is insufficient, the Federal Reserve Act provides that Federal Reserve notes become a first and paramount lien on all the assets of the Reserve Banks. Finally, Federal Reserve notes are obligations of the United States government.

"Federal Reserve notes outstanding, net" in the Combined Statements of Condition represents the Reserve Banks' Federal Reserve notes outstanding, reduced by the Reserve Banks' currency holdings of $170 billion and $171 billion at December 31, 2015 and 2014, respectively.

At December 31, 2015 and 2014, all Federal Reserve notes outstanding, reduced by the Reserve Bank's currency holdings, were fully collateralized. At December 31, 2015, all gold certificates, all special drawing rights certificates, and $1,363 billion of domestic securities held in the SOMA were pledged as collateral. At December 31, 2015, no investments denominated in foreign currencies were pledged as collateral.

k. Deposits

Depository Institutions

Depository institutions' deposits represent the reserve and service-related balances in the accounts that depository institutions hold at the Reserve Banks. Required reserve balances are those that a depository institution must hold to satisfy its reserve requirement. Reserve requirements are the amount of funds that a depository institution must hold in reserve against specified deposit liabilities. Excess reserves are those held by the depository institutions in excess of their required reserve balances. The interest rates paid on required reserve balances and excess balances are determined by the Board of Governors, based on an FOMC-established target range for the federal funds rate. Interest expense on depository institutions' deposits is accrued daily at the appropriate rate. Interest payable is reported as a component of "Interest payable to depository institutions" in the Combined Statements of Condition.

The Term Deposit Facility (TDF) consists of deposits with specific maturities held by eligible institutions at the Reserve Banks. The Reserve Banks pay interest on

these deposits at interest rates determined by auction. Interest expense on depository institutions' deposits is accrued daily at the appropriate rate. Interest payable is reported as a component of "Interest payable to depository institutions" in the Combined Statements of Condition. There were no deposits held by the Reserve Bank under the TDF at December 31, 2015 and 2014.

Treasury

The Treasury general account is the primary operational account of the Treasury and is held at the FRBNY.

Other

Other deposits include foreign central bank and foreign government deposits held at the FRBNY. Other deposits also include cash collateral, deposits of designated financial market utilities, and GSE deposits held by the Reserve Banks.

l. Items in Process of Collection and Deferred Credit Items

Items in process of collection primarily represents amounts attributable to checks that have been deposited for collection and that, as of the balance sheet date, have not yet been presented to the paying bank. Deferred credit items represents the counterpart liability to items in process of collection. The amounts in this account arise from deferring credit for deposited items until the amounts are collected.

m. Capital Paid-in

The Federal Reserve Act requires that each member bank subscribe to the capital stock of the Reserve Bank in an amount equal to 6 percent of the capital and surplus of the member bank. These shares are nonvoting, with a par value of $100, and may not be transferred or hypothecated. As a member bank's capital and surplus changes, its holdings of Reserve Bank stock must be adjusted. Currently, only one-half of the subscription is paid in, and the remainder is subject to call. A member bank is liable for Reserve Bank liabilities up to twice the par value of stock subscribed by it.

By law, each Reserve Bank is required to pay each member bank an annual dividend of 6 percent on the paid-in capital stock. This cumulative dividend is paid semiannually.

The *Fixing America's Surface Transportation Act* (FAST Act), which was enacted on December 4, 2015, amended section 7 of the Federal Reserve Act related to Reserve Bank surplus and the payment of dividends to member banks. The FAST Act changed the dividend rate for member banks with more than $10 billion of consolidated assets, effective January 1, 2016, to the smaller of 6 percent or the rate equal to the high yield of the 10-year Treasury note auctioned at the last auction held prior to the payment of the dividend. The FAST Act did not change the 6 percent dividend rate for member banks with $10 billion or less of total consolidated assets. The provisions of the FAST Act related to dividend payments did not affect the amounts reported by the Bank for the year ended December 31, 2015, but are expected to reduce the amount of dividend payments made to member banks in future years.

n. Surplus

Before the enactment of the FAST Act, the Board of Governors required the Reserve Banks to maintain a surplus equal to the amount of capital paid-in. On a daily basis, surplus was adjusted to equate the balance to capital paid-in. Effective December 4, 2015, the FAST Act limits aggregate Reserve Bank surplus to $10 bil-

lion. Reserve Bank surplus is allocated among Reserve Banks based on the ratio of each Bank's capital paid-in to total Reserve Bank capital paid-in as of December 31 of each year.

Accumulated other comprehensive income is reported as a component of "Surplus" in the Combined Statements of Condition and the Combined Statements of Changes in Capital. Additional information regarding the classifications of accumulated other comprehensive income is provided in Notes 9, 10, and 11.

o. Earnings Remittances to the Treasury

Before the enactment of the FAST Act, the Board of Governors required the Reserve Banks to transfer excess earnings to the Treasury as interest on Federal Reserve notes after providing for the costs of operations, payment of dividends, and reservation of an amount necessary to equate surplus with capital paid-in. The Federal Reserve Act, as amended by the FAST Act effective December 4, 2015, now requires that any amounts of the surplus funds of the Reserve Banks that exceed, or would exceed, the aggregate limitation of $10 billion shall be transferred to the Board of Governors for transfer to the Treasury. The Reserve Banks remit excess earnings to the Treasury after providing for the cost of operations, payment of dividends, and reservation of an amount necessary to maintain surplus at the Bank's allocated portion of the $10 billion aggregate surplus limitation. Remittances to the Treasury are made on a weekly basis. The amount of the remittances to the Treasury that were required under the Board of Governor's policy is reported as "Earnings remittances to the Treasury: Interest on Federal Reserve notes" in the Combined Statements of Income and Comprehensive Income. The amount of remittances to the Treasury that are required by the FAST Act is reported as "Earnings remittances to the Treasury: Required by the Federal Reserve Act, as amended by the FAST Act" in the Combined Statements of Income and Comprehensive Income. See Note 13 for additional information on earnings remittances to the Treasury.

Under the previous Board of Governor's policy, if earnings during the year were not sufficient to provide for the costs of operations, payment of dividends, and equating surplus and capital paid-in, remittances to the Treasury were suspended, and under the FAST Act, if earnings during the year are not sufficient to provide for the costs of operations, payment of dividends, and maintaining surplus at an amount equal to the Bank's allocated portion of the $10 billion aggregate surplus limitation, remittances to the Treasury are suspended. A deferred asset is recorded that represents the amount of net earnings a Reserve Bank will need to realize before remittances to the Treasury resume. As of December 31, 2014, such adjustments resulted in recording a deferred asset in the amount of $667 million, which is reported as "Deferred asset – remittances to the Treasury" in the Combined Statements of Condition. This deferred asset is periodically reviewed for impairment, and as of December 31, 2014, no impairment existed.

p. Income and Costs Related to Treasury Services

When directed by the Secretary of the Treasury, the Reserve Banks are required by the Federal Reserve Act to serve as fiscal agent and depositary of the United States Government. By statute, the Treasury has appropriations to pay for these services. During the years ended December 31, 2015 and 2014, the Reserve Banks were reimbursed for all services provided to the Treasury as its fiscal agent.

q. Assessments

The Board of Governors assesses the Reserve Banks to fund its operations and the operations of the Bureau. These assessments are allocated to each Reserve Bank based on each Reserve Bank's capital and surplus balances. The Board of Governors also assesses each Reserve Bank for expenses related to producing, issuing, and retiring Federal Reserve notes based on each Reserve Bank's share of the number of notes comprising the System's net liability for Federal Reserve notes on December 31 of the prior year.

The Dodd-Frank Act requires that, after the transfer of its responsibilities to the Bureau on July 21, 2011, the Board of Governors fund the Bureau in an amount not to exceed a fixed percentage of the total operating expenses of the System as reported in the Board of Governors' 2009 annual report, which totaled $4.98 billion. After 2013, the amount will be adjusted annually in accordance with the provisions of the Dodd-Frank Act. The percentage of total operating expenses of the System for the years ended December 31, 2015 and 2014 was 12.42 percent ($618.7 million) and 12.22 percent ($608.4 million), respectively. The Reserve Banks' assessment for Bureau funding is reported as "Assessments: Bureau of Consumer Financial Protection" in the Combined Statements of Income and Comprehensive Income.

r. Fair Value

Investments and liabilities of the one remaining consolidated VIE and assets of the Retirement Plan for Employees of the System are measured at fair value in accordance with FASB ASC Topic 820 (ASC 820), *Fair Value Measurement*. ASC 820 defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. ASC 820 establishes a three-level fair value hierarchy that distinguishes between assumptions developed using market data obtained from independent sources (observable inputs) and the Reserve Banks' assumptions developed using the best information available in the circumstances (unobservable inputs). The three levels established by ASC 820 are described as follows:

- Level 1 – Valuation is based on quoted prices for identical instruments traded in active markets.
- Level 2 – Valuation is based on quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active, and model-based valuation techniques for which all significant assumptions are observable in the market.
- Level 3 – Valuation is based on model-based techniques that use significant inputs and assumptions not observable in the market. These unobservable inputs and assumptions reflect the Reserve Banks' estimates of inputs and assumptions that market participants would use in pricing the assets and liabilities. Valuation techniques include the use of option pricing models, discounted cash flow models, and similar techniques.

The inputs or methodology used for valuing assets and liabilities are not necessarily an indication of the risk associated with those assets and liabilities.

s. Taxes

The Reserve Banks are exempt from federal, state, and local taxes, except for taxes on real property. The Reserve Banks' real property taxes were $51 million and $48 million for the years ended December 31, 2015 and 2014, respectively, and are

reported as a component of "Operating expenses: Occupancy" in the Combined Statements of Income and Comprehensive Income.

t. Restructuring Charges

The Reserve Banks recognize restructuring charges for exit or disposal costs incurred as part of the closure of business activities in a particular location, the relocation of business activities from one location to another, or a fundamental reorganization that affects the nature of operations. Restructuring charges may include costs associated with employee separations, contract terminations, and asset impairments. Expenses are recognized in the period in which the Reserve Banks commit to a formalized restructuring plan or executes the specific actions contemplated in the plan and all criteria for financial statement recognition have been met.

In 2014, the Treasury announced plans to consolidate the provision of substantially all fiscal agent services for the U.S. Treasury at the Federal Reserve Bank of Cleveland (FRBC), the Federal Reserve Bank of Kansas City (FRBKC), the FRBNY, and the Federal Reserve Bank of St. Louis (FRBSL). The implementation plan associated with this consolidation is expected to be completed in 2018.

Note 12 describes the Reserve Banks' restructuring initiatives and provides information about the costs and liabilities associated with employee separations and contract terminations. The costs associated with the impairment of certain Reserve Bank assets are discussed in Note 7. Costs and liabilities associated with enhanced pension benefits in connection with the restructuring activities for all of the Reserve Banks are recorded on the books of the FRBNY and discussed in Note 9. Costs and liabilities associated with enhanced postretirement benefits are discussed in Note 10.

u. Recently Issued Accounting Standards

In April 2014, the FASB issued Accounting Standards Update (ASU) 2014-08, *Presentation of Financial Statements (Topic 205) and Property, Plant, and Equipment (Topic 360): Reporting Discontinued Operations and Disclosures of Disposals of Components of an Entity*. This update changes the requirements for reporting discontinued operations, which may include a component of an entity or a group of components of an entity, or a business or nonprofit activity. This update is effective for the Reserve Banks for the year ended December 31, 2015, and did not have a material effect on the Reserve Banks' combined financial statements.

In May 2014, the FASB issued ASU 2014-09, *Revenue from Contracts with Customers (Topic 606)*. This update was issued to create common revenue recognition guidance for U.S. GAAP and International Financial Reporting Standards. The guidance is applicable to all contracts for the transfer of goods or services regardless of industry or type of transaction. This update requires recognition of revenue in a manner that reflects the consideration that the entity expects to receive in return for the transfer of goods or services to customers. In August 2015, the FASB issued ASU 2015-14, *Revenue from Contracts with Customers (Topic 606): Deferral of the Effective Date* that delayed the required effective date of this accounting by one year. This revenue recognition accounting guidance is effective for the Reserve Banks for the year ending December 31, 2019, although the Reserve Banks may elect to adopt guidance earlier. The Reserve Banks are continuing to evaluate the effect of this new guidance on the combined financial statements.

In June 2014, the FASB issued ASU 2014-11, *Transfer and Servicing (Topic 860): Repurchase-to-Maturity Transactions, Repurchase Financings, and Disclosures*. This update requires certain changes in the accounting for repurchase-to-maturity transactions and repurchase financing transactions. Additionally, this update provides guidance for the disclosures for certain transfers of financial assets accounted for as sales, where the transferor retains substantially all of the exposure to economic return on the transferred financial asset; and repurchase agreements, securities lending transactions, and repurchase-to-maturity transactions that are accounted for as secured borrowings. This update is effective for the Reserve Banks for the year ended December 31, 2015. The update did not have any effect on the Reserve Banks' accounting for these transactions. The relevant required disclosures have been included in the Note 3e and Note 5 to the Reserve Banks' combined financial statements.

In August 2014, the FASB issued ASU 2014-13, *Consolidation (Topic 810): Measuring the Financial Assets and the Financial Liabilities of a Consolidated Collateralized Financing Entity*. This update provides guidance for the measurement of the financial assets and financial liabilities of a collateralized financing entity (CFE). A reporting entity that consolidates a CFE may elect to measure the financial assets and financial liabilities of that CFE using either the fair value or a measurement alternative as prescribed in the accounting pronouncement. This update is effective for the Reserve Banks for the year ending December 31, 2016, and is not expected to have a material effect on the Reserve Banks' combined financial statements.

In February 2015, the FASB issued ASU 2015-02, *Consolidation (Topic 810): Amendments to the Consolidation Analysis*. This update revised the consolidation model for reporting entities that are required to evaluate whether they should consolidate certain legal entities. More specifically, the update modified the evaluation of whether limited liability companies are VIEs or voting interest entities, and revised the consolidation analysis of reporting entities involved with VIEs, particularly those with fee arrangements and related party relationships. This update is effective for the Reserve Banks for the year ending December 31, 2016, and is not expected to have a material effect on the Reserve Banks' combined financial statements.

In April 2015, the FASB issued ASU 2015-05, *Intangibles - Goodwill and Other - Internal Use Software (Subtopic 350-40)*. The amendments in this update provide guidance to customers about whether a cloud computing arrangement includes a software license. If a cloud computing arrangement includes a software license, then the customer should account for the software license element of the arrangement consistent with the acquisition of other software licenses. If a cloud computing arrangement does not include a software license, the customer should account for the arrangement as a service contract. Consequently, all software licenses within the scope of subtopic 350-40 will be accounted for consistent with other licenses of intangible assets. This update is effective for the Reserve Banks for the year ending December 31, 2016, and is not expected to have a material effect on the Reserve Banks' combined financial statements.

In May 2015, the FASB issued ASU 2015-07, *Fair Value Measurement (Topic 820): Disclosures for Investments in Certain Entities That Calculate Net Asset Value per Share (or Its Equivalent)*. This update removes the requirement to categorize investments that are measured using net asset value within the fair value hierarchy. The update also changes disclosure requirements for investments measured using

net asset value. Some of the investments held in the defined benefit retirement plans (Note 9) are currently measured using net asset value. This update is effective for the Reserve Banks for the year ending December 31, 2017, although early adoption is permitted. The Reserve Banks are continuing to evaluate the effect of this new guidance on the combined financial statements.

In July 2015, the FASB issued ASU 2015-12, *Plan Accounting: Defined Benefit Pension Plans (Topic 960), Defined Contribution Pension Plans (Topic 962), Health and Welfare Benefit Plans (Topic 965): (Part I) Fully Benefit-Responsive Investment Contracts, (Part II) Plan Investment Disclosures, (Part III) Measurement Date Practical Expedient (consensuses of the FASB Emerging Issues Task Force)*. Previously, plans were required to disclose (1) individual investments representing 5 percent or more of net assets available for benefits and (2) net appreciation or depreciation for investments by general type. The amendments in Part II of this update (1) eliminate the required disclosure related to individual investments and (2) removes the requirement to disaggregate net appreciation or depreciation for investments by general type. This update is effective for the Reserve Banks for the year ending December 31, 2016, and is not expected to have a material effect on the Reserve Banks' combined financial statements.

In January 2016, the FASB issued ASU 2016-01, *Financial Instruments—Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities*. The amendments in this update eliminate the requirement to disclose methods and significant assumptions used to estimate the fair value for financial instruments measured at amortized cost on the balance sheet. This update is effective for the Reserve Banks for the year ending December 31, 2019. The Reserve Banks are continuing to evaluate the effect of this new guidance on the combined financial statements.

In February 2016, the FASB issued ASU 2016-02, *Leases (Topic 842)*. This update revises the model to assess how a lease should be classified and provides guidance for lessees, requiring lessees to present right-of-use assets and lease liabilities on the balance sheet. The update is effective for the Reserve Banks for the year ended December 31, 2020, although earlier adoption is permitted. The Reserve Banks are continuing to evaluate the effect of this new guidance on their combined financial statements.

(4) Loans

Loans to Depository Institutions

The Reserve Banks offer primary, secondary, and seasonal loans to eligible borrowers (depository institutions that maintain reservable transaction accounts or nonpersonal time deposits and have established discount window borrowing privileges). Each program has its own interest rate and interest is accrued using the applicable interest rate established at least every 14 days by the Reserve Banks' board of directors, subject to review and determination by the Board of Governors. Primary and secondary loans are extended on a short-term basis, typically overnight, whereas seasonal loans may be extended for a period of up to nine months.

Primary, secondary, and seasonal loans are collateralized to the satisfaction of each Reserve Bank to reduce credit risk. Assets eligible to collateralize these loans include consumer, business, and real estate loans; Treasury securities; GSE debt securities; foreign sovereign debt; municipal, corporate, and state and local govern-

ment obligations; asset-backed securities (ABS); corporate bonds; commercial paper; and bank-issued assets, such as certificates of deposit, bank notes, and deposit notes. Collateral is assigned a lending value that is deemed appropriate by the Reserve Bank, which is typically fair value reduced by a margin. Loans to depository institutions are monitored daily to ensure that borrowers continue to meet eligibility requirements for these programs. If a borrower no longer qualifies for these programs, the Reserve Bank will generally request full repayment of the outstanding loan or, for primary or seasonal loans, may convert the loan to a secondary credit loan. Collateral levels are reviewed daily against outstanding obligations, and borrowers that no longer have sufficient collateral to support outstanding loans are required to provide additional collateral or to make partial or full repayment.

The remaining maturity distribution of loans to depository institutions outstanding as of December 31, 2015 and 2014, was as follows (in millions):

	Within 15 days	16 days to 90 days	Total
December 31, 2015	$104	$11	$115
December 31, 2014	$140	$ 5	$145

At December 31, 2015 and 2014, the Reserve Banks did not have any loans that were impaired, restructured, past due, or on non-accrual status, and no allowance for loan losses was required. There were no impaired loans during the years ended December 31, 2015 and 2014. Interest income attributable to loans to depository institutions was immaterial during the years ended December 31, 2015 and 2014.

TALF

The TALF assisted financial markets in accommodating the credit needs of consumers and businesses of all sizes by facilitating the issuance of ABS collateralized by a variety of consumer and business loans. Each TALF loan had an original maturity of three years, except loans secured by Small Business Administration (SBA) Pool Certificates, loans secured by SBA Development Company Participation Certificates, or ABS backed by student loans or commercial mortgage loans, which had an original maturity of five years if the borrower so elected. The loans were secured by eligible collateral, with the FRBNY having lent an amount equal to the value of the collateral, as determined by the FRBNY, less a margin.

The TALF loans were extended on a nonrecourse basis. If the borrower did not repay the loan, the FRBNY would have enforced its rights in the collateral and might have sold the collateral to TALF LLC, a Delaware LLC, established for the purpose of purchasing such assets. Pursuant to a put agreement with the FRBNY, TALF LLC had committed to purchase assets that secure a TALF loan at a price equal to the principal amount outstanding plus accrued but unpaid interest, regardless of the fair value of the collateral.

On October 29, 2014, the final outstanding TALF loan was repaid in full. Over the life of the program, all TALF loans were repaid in full at or before their respective maturity dates, and as such, the FRBNY did not incur a loss on any TALF loan. Subsequent to the repayment of the final outstanding TALF loan, the FRBNY terminated the put agreement with TALF LLC. Refer to Note 6 for additional information related to TALF LLC.

TALF had no loans outstanding as of December 31, 2015 and 2014. Interest income attributable to TALF loans was $2 million during the year ended December 31, 2014.

(5) System Open Market Account

a. Domestic Securities Holdings

The FRBNY conducts domestic open market operations and, on behalf of the Reserve Banks, holds the resulting securities in the SOMA.

During the year ended December 31, 2014, the FRBNY continued the purchase of Treasury securities and federal agency and GSE MBS under the large-scale asset purchase programs as directed by the FOMC, although at a reduced pace than in previous years. In October 2014, the FOMC concluded its asset purchase program while maintaining its existing policy of reinvesting principal payments from its holdings of GSE debt securities and federal agency and GSE MBS and of rolling over maturing Treasury securities at auction. During the year ended December 31, 2015, the FRBNY continued the reinvestments.

The total of Treasury securities, GSE debt securities, and federal agency and GSE MBS, net, excluding accrued interest, held in the SOMA at December 31 was as follows (in millions):

	2015			
	Par	Unamortized premiums	Unaccreted discounts	Total amortized cost
Treasury securities				
Notes	$1,634,772	$ 20,937	$ (6,481)	$1,649,228
Bonds	826,780	114,015	(9,347)	931,448
Total Treasury securities	$2,461,552	$134,952	$(15,828)	$2,580,676
GSE debt securities	$ 32,944	$ 804	$ -	$ 33,748
Federal agency and GSE MBS	$1,747,461	$ 53,730	$ (742)	$1,800,449

	2014			
	Par	Unamortized premiums	Unaccreted discounts	Total amortized cost
Treasury securities				
Notes	$1,634,949	$ 27,670	$ (7,718)	$1,654,901
Bonds	826,414	124,621	(9,695)	941,340
Total Treasury securities	$2,461,363	$152,291	$(17,413)	$2,596,241
GSE debt securities	$ 38,677	$ 1,313	$ -	$ 39,990
Federal agency and GSE MBS	$1,736,833	$ 53,231	$ (981)	$1,789,083

The FRBNY enters into transactions for the purchase of securities under agreements to resell and transactions to sell securities under agreements to repurchase as part of its monetary policy activities. Prior to December 17, 2015, these operations were for the purpose of further assessing the appropriate structure of such operations in supporting the implementation of monetary policy during normalization. From December 17, 2015, these operations have been undertaken as necessary to maintain the federal funds rate in a target range. In addition, transactions to sell securities under agreements to repurchase are entered into as part of a service offering to foreign official and international account holders.

There were no material transactions related to securities purchased under agreements to resell during the years ended December 31, 2015 and 2014. Financial information related to securities sold under agreements to repurchase for the years ended December 31 was as follows (in millions):

	2015	2014
Primary dealers and expanded counterparties:		
Contract amount outstanding, end of year	$474,592	$396,705
Average daily amount outstanding, during the year	125,656	130,281
Maximum balance outstanding, during the year	474,592	396,705
Securities pledged (par value), end of year	437,961	365,235
Securities pledged (market value), end of year	475,422	398,540
Foreign official and international accounts:		
Contract amount outstanding, end of year	$237,809	$113,132
Average daily amount outstanding, during the year	157,929	102,968
Maximum balance outstanding, during the year	237,809	122,232
Securities pledged (par value), end of year	230,333	108,355
Securities pledged (market value), end of year	237,825	113,132
Total contract amount outstanding, end of year	$712,401	$509,837
Supplemental information - interest expense:		
Primary dealers and expanded counterparties	$ 84	$ 68
Foreign official and international accounts	164	44
Total interest expense - securities sold under agreements to repurchase	$ 248	$ 112

Securities pledged as collateral, at December 31, 2015 and 2014, consisted solely of Treasury securities. The contract amount outstanding as of December 31, 2015 of securities sold under agreements to repurchase that were transacted with primary dealers and expanded counterparties had a term of one business day and matured on January 4, 2016. The contract amount outstanding as of December 31, 2015 of securities sold under agreements to repurchase that were transacted with foreign official and international accounts had a term of one business day and matured on January 4, 2016.

The remaining maturity distribution of Treasury securities, GSE debt securities, federal agency and GSE MBS bought outright, and securities sold under agreements to repurchase at December 31, 2015 and 2014 was as follows (in millions):

	Within 15 days	16 days to 90 days	91 days to 1 year	Over 1 year to 5 years	Over 5 years to 10 years	Over 10 years	Total
December 31, 2015:							
Treasury securities (par value)	$ -	$38,619	$177,496	$1,118,349	$489,226	$ 637,862	$2,461,552
GSE debt securities (par value)	-	3,687	13,077	13,833	-	2,347	32,944
Federal agency and GSE MBS (par value)[1]	-	-	-	467	9,014	1,737,980	1,747,461
Securities sold under agreements to repurchase (contract amount)	712,401	-	-	-	-	-	712,401
December 31, 2014:							
Treasury securities (par value)	$ -	$ 4	$ 3,516	$1,112,927	$686,627	$ 658,289	$2,461,363
GSE debt securities (par value)	1,089	711	3,933	30,597	-	2,347	38,677
Federal agency and GSE MBS (par value)[1]	-	-	-	13	6,453	1,730,367	1,736,833
Securities sold under agreements to repurchase (contract amount)	509,837	-	-	-	-	-	509,837

[1] The part amount shown for federal agency and GSE MBS is the remaining principal balance of the securities.

Federal agency and GSE MBS are reported at stated maturity in the table above. The estimated weighted average life of these securities, which differs from the stated maturity primarily because it factors in scheduled payments and prepayment assumptions, was approximately 6.5 and 5.7 years as of December 31, 2015 and 2014, respectively.

The amortized cost and par value of Treasury securities and GSE debt securities that were loaned from the SOMA under securities lending agreements, at December 31 were as follows (in millions):

	2015	2014
Treasury securities (amortized costs)	$18,960	$11,144
Treasury securities (par value)	18,055	10,105
GSE debt securities (amortized cost)	146	633
GSE debt securities (par value)	137	616

Securities pledged as collateral by the counterparties in the securities lending arrangements at December 31, 2015 and 2014, consisted solely of Treasury securities. The securities lending agreements outstanding as of December 31, 2015 had a term of one business day and matured on January 4, 2016.

The FRBNY enters into commitments to buy and sell Treasury securities and records the related securities on a settlement-date basis. As of December 31, 2015, there were no outstanding commitments.

The FRBNY enters into commitments to buy and sell federal agency and GSE MBS and records the related securities on a settlement-date basis. As of December 31, 2015, the total purchase price of the federal agency and GSE MBS under

outstanding purchase commitments was $22,187 million, none of which was related to dollar rolls. MBS commitments, which had contractual settlement dates extending through January 2016, are principally for the purchase of TBA MBS for which the number and identity of the pools that will be delivered to fulfill the commitment are unknown at the time of the trade. As of December 31, 2015, there were no outstanding sales commitments for federal agency and GSE MBS. These commitments are subject to varying degrees of off-balance-sheet market risk and counterparty credit risk that result from their future settlement. The FRBNY requires the posting of cash collateral for MBS commitments as part of its risk management practices used to mitigate the counterparty credit risk.

Other assets consists primarily of cash and short-term investments related to the federal agency and GSE MBS portfolio. Other liabilities, which are primarily related to federal agency and GSE MBS purchases and sales, includes the FRBNY's obligation to return cash margin posted by counterparties as collateral under commitments to purchase and sell federal agency and GSE MBS. In addition, other liabilities includes obligations that arise from the failure of a seller to deliver MBS to the FRBNY on the settlement date. Although the FRBNY has ownership of and records its investments in the MBS as of the contractual settlement date, it is not obligated to make payment until the securities are delivered, and the amount included in other liabilities represents FRBNY's obligation to pay for the securities when delivered. The amount of other assets and other liabilities held in the SOMA at December 31 was as follows (in millions):

	2015	2014
Other assets:		
MBS portfolio related cash and short term investments	$ 13	$ 28
Other	1	1
Total other assets	$ 14	$ 29
Other liabilities:		
Cash margin	$486	$793
Obligations from MBS transaction fails	16	30
Other	6	7
Total other liabilities	$508	$830

Accrued interest receivable on domestic securities holdings was $25,354 million and $25,561 million as of December 31, 2015 and 2014, respectively. These amounts are reported as a component of "System Open Market Account: Accrued interest receivable" in the Combined Statements of Condition.

Information about transactions related to Treasury securities, GSE debt securities, and federal agency and GSE MBS during the years ended December 31, 2015 and 2014, is summarized as follows (in millions):

	Notes	Bonds	Total Treasury securities	GSE debt securities	Federal agency and GSE MBS
Balance December 31, 2013	$1,495,115	$864,319	$2,359,434	$ 59,122	$1,533,860
Purchases[1]	165,306	85,826	251,132	-	466,384
Sales[1]	-	-	-	-	(29)
Realized gains, net[2]	-	-	-	-	-
Principal payments and maturities	(475)	-	(475)	(18,544)	(203,933)
Amortization of premiums and accretion of discounts, net	(5,545)	(10,132)	(15,677)	(588)	(7,199)
Inflation adjustment on inflation-indexed securities	500	1,327	1,827	-	-
Balance at December 31, 2014	$1,654,901	$941,340	$2,596,241	$ 39,990	$1,789,083
Purchases[1]	2,736	761	3,497	-	356,976
Sales[1]	-	-	-	-	(464)
Realized gains, net[2]	-	-	-	-	16
Principal payments and maturities	(2,977)	(543)	(3,520)	(5,733)	(333,441)
Amortization of premiums and accretion of discounts, net	(5,485)	(10,253)	(15,738)	(509)	(11,721)
Inflation adjustment on inflation-indexed securities	53	143	196	-	-
Balance at December 31, 2015	$1,649,228	$931,448	$2,580,676	$ 33,748	$1,800,449
Year-ended December 31, 2014					
Supplemental information—par value of transactions:					
Purchases[3]	$ 167,497	$ 83,739	$ 251,236	$ -	$ 450,633
Sales	-	-	-	-	(29)
Year-ended December 31, 2015					
Supplemental information—par value of transactions:					
Purchases[3]	$ 2,747	$ 766	$ 3,513	$ -	$ 344,505
Sales	-	-	-	-	(435)

1 Purchases and sales may include payments and receipts related to principal, premiums, discounts, and inflation compensation adjustments to the basis of inflation-indexed securities. The amount reported as sales includes the realized gains and losses on such transactions. Purchases and sales exclude MBS TBA transactions that are settled on a net basis.

2 Realized gains, net offset the amount of realized gains and losses included in the reported sales amount.

3 Includes inflation compensation.

b. Foreign Currency Denominated Investments

The FRBNY conducts foreign currency operations and, on behalf of the Reserve Banks, holds the resulting foreign currency denominated investments in the SOMA.

The FRBNY holds foreign currency deposits with foreign central banks and the Bank for International Settlements and invests in foreign government debt instruments of Germany, France, and Japan. These foreign government debt instruments are backed by the full faith and credit of the issuing foreign governments. In addition, the FRBNY may enter into transactions to purchase Euro-denominated government debt securities under agreements to resell for which the accepted collateral is the debt instruments issued by the governments of Belgium, France, Germany, Italy, the Netherlands, and Spain, which are backed by the full faith and credit of those issuing governments.

At December 31, 2015 and 2014, there were no securities purchased under agreements to resell outstanding and, consequently, no related foreign securities held as collateral.

Information about foreign currency denominated investments valued at amortized cost and at foreign currency market exchange rates at December 31 was as follows (in millions):

	2015	2014
Euro:		
Foreign currency deposits	$ 6,218	$ 6,936
German government debt instruments	2,261	2,494
French government debt instruments	3,325	3,687
Japanese yen:		
Foreign currency deposits	2,568	2,576
Japanese government debt instruments	5,195	5,207
Total	$19,567	$20,900

Accrued interest receivable on foreign currency denominated investments was $64 million and $83 million as of December 31, 2015 and 2014, respectively. These amounts are reported as a component of "System Open Market Account: Accrued interest receivable" in the Combined Statements of Condition.

The remaining maturity distribution of foreign currency denominated investments at December 31, 2015 and 2014, was as follows (in millions):

	Within 15 days	16 days to 90 days	91 days to 1 year	Over 1 year to 5 years	Over 5 years to 10 years	Total
December 31, 2015:						
Euro	$2,136	$4,440	$1,051	$3,824	$353	$11,804
Japanese yen	2,734	350	1,604	3,075	-	7,763
Total	$4,870	$4,790	$2,655	$6,899	$353	$19,567
December 31, 2014:						
Euro	$3,635	$2,809	$1,644	$5,029	$ -	$13,117
Japanese yen	2,755	392	1,540	3,096	-	7,783
Total	$6,390	$3,201	$3,184	$8,125	$ -	$20,900

There were no foreign exchange contracts related to foreign currency operations outstanding as of December 31, 2015.

The FRBNY enters into commitments to buy foreign government debt instruments and records the related securities on a settlement-date basis. As of December 31, 2015, there were no outstanding commitments to purchase foreign government debt instruments. During 2015, there were purchases and maturities of foreign government debt instruments of $3,288 million and $3,155 million, respectively. There were no sales of foreign government debt instruments in 2015.

In connection with its foreign currency activities, the FRBNY may enter into transactions that are subject to varying degrees of off-balance-sheet market risk and counterparty credit risk that result from their future settlement. The FRBNY controls these risks by obtaining credit approvals, establishing transaction limits, receiving collateral in some cases, and performing monitoring procedures.

Foreign currency working balances held and foreign exchange contracts executed by the Bank to facilitate international payments and currency transactions made

on behalf of foreign central banks and U.S. official institution customers were not material as of December 31, 2015 and 2014.

c. Central Bank Liquidity Swaps

U.S. Dollar Liquidity Swaps

The total foreign currency held under U.S. dollar liquidity swaps in the SOMA at December 31, 2015 and 2014, was $997 million and $1,528 million, respectively.

The remaining maturity distribution of U.S. dollar liquidity swaps that were allocated to the Reserve Banks at December 31 was as follows (in millions):

	2015	2014
	Within 15 days	Within 15 days
Euro	$925	$ -
Japanese yen	72	1,528
Total	$997	$1,528

Foreign Currency Liquidity Swaps

At December 31, 2015 and 2014, there was no balance outstanding related to foreign currency liquidity swaps.

d. Fair Value of SOMA Assets and Liabilities

The fair value amounts below are presented solely for informational purposes and are not intended to comply with the fair value disclosures required by ASC 820. Although the fair value of SOMA security holdings can be substantially greater than or less than the recorded value at any point in time, these unrealized gains or losses have no effect on the ability of the Reserve Banks, as the central bank, to meet their financial obligations and responsibilities. Because SOMA securities are recorded at amortized cost, cumulative unrealized gains (losses) are not recognized in the Combined Statements of Condition and the changes in cumulative unrealized gains (losses) are not recognized in the Combined Statements of Income and Comprehensive Income.

The fair value of the Treasury securities, GSE debt securities, federal agency and GSE MBS, and foreign government debt instruments held in the SOMA is subject to market risk, arising from movements in market variables such as interest rates and credit risk. The fair value of federal agency and GSE MBS is also affected by the expected rate of prepayments of mortgage loans underlying the securities. The fair value of foreign government debt instruments is also affected by currency risk. Based on evaluations performed as of December 31, 2015 and 2014, there are no credit impairments of SOMA securities holdings.

The following table presents the amortized cost, fair value, and cumulative unrealized gains (losses) on the Treasury securities, GSE debt securities, and federal agency and GSE MBS held in the SOMA at December 31 (in millions):

	2015			2014		
	Amortized cost	Fair value	Cumulative unrealized gains (losses)	Amortized cost	Fair value	Cumulative unrealized gains
Treasury securities:						
Notes	$1,649,228	$1,669,395	$ 20,167	$1,654,901	$1,683,377	$ 28,476
Bonds	931,448	1,006,514	75,066	941,340	1,052,916	111,576
Total Treasury securities	$2,580,676	$2,675,909	$ 95,233	$2,596,241	$2,736,293	$140,052
GSE debt securities	33,748	35,165	1,417	39,990	42,499	2,509
Federal agency and GSE MBS	1,800,449	1,810,256	9,807	1,789,083	1,820,544	31,461
Total domestic SOMA portfolio securities holdings	$4,414,873	$4,521,330	$106,457	$4,425,314	$4,599,336	$174,022
Memorandum–Commitments for:						
Purchases of Treasury securities	$ -	$ -	$ -	$ -	$ -	$ -
Purchases of federal agency and GSE MBS	22,187	22,170	(17)	28,692	28,803	111
Sales of federal agency and GSE MBS	-	-	-	-	-	-

The fair value of Treasury securities and GSE debt securities was determined using pricing services that provide market consensus prices based on indicative quotes from various market participants. The fair value of federal agency and GSE MBS was determined using a pricing service that utilizes a model-based approach that considers observable inputs for similar securities.

The cost bases of securities purchased under agreements to resell, securities sold under agreements to repurchase, central bank liquidity swaps and other investments held in the SOMA domestic portfolio approximate fair value. Due to the short-term nature of these agreements and the defined amount that will be received upon settlement, the cost basis is estimated to approximate fair value.

At December 31, 2015 and 2014, the fair value of foreign currency denominated investments was $19,630 million and $20,996 million, respectively. The fair value of foreign government debt instruments was determined using pricing services that provide market consensus prices based on indicative quotes from various market participants. The fair value of foreign currency deposits and securities purchased under agreements to resell was determined by reference to market interest rates.

The following table provides additional information on the amortized cost and fair values of the federal agency and GSE MBS portfolio at December 31 (in millions):

Distribution of MBS holdings by coupon rate	2015		2014	
	Amortized cost	Fair value	Amortized cost	Fair value
Total SOMA:				
2.0%	$ 11,198	$ 10,993	$ 12,788	$ 12,618
2.5%	116,527	115,018	114,609	113,468
3.0%	554,430	543,270	513,289	506,280
3.5%	579,403	581,940	481,305	489,390
4.0%	361,149	368,576	428,047	441,204
4.5%	115,914	124,043	155,867	167,844
5.0%	48,931	52,523	65,544	70,719
5.5%	11,138	11,989	15,232	16,414
6.0%	1,542	1,666	2,110	2,287
6.5%	217	238	292	320
Total	$1,800,449	$1,810,256	$1,789,083	$1,820,544

The following table presents the realized gains and the change in the cumulative unrealized gains (losses) related to SOMA domestic securities holdings during the years ended December 31, 2015 and 2014 (in millions):

	2015		2014	
	Realized gains[1]	Change in cumulative unrealized gains (losses)[2]	Realized gains[1]	Change in cumulative unrealized gains[2]
Treasury securities	$ -	$(44,819)	$ -	$158,150
GSE debt securities	-	(1,092)	-	(605)
Federal agency and GSE MBS	43	(21,654)	81	69,749
Total	$43	$(67,565)	$81	$227,294

[1] Realized gains are reported in "Non-interest income: System Open Market Account: Federal agency and government-sponsored enterprise mortgage-backed securities gains, net" in the Combined Statements of Income and Comprehensive Income.

[2] Because SOMA securities are recorded at amortized cost, the change in the cumulative unrealized gains (losses) is not reported in the Combined Statements of Income and Comprehensive Income.

The amount of change in cumulative unrealized gains (losses) position, net, related to foreign currency denominated investments was a loss of $33 million and a gain of $18 million for the years ended December 31, 2015 and 2014, respectively.

Treasury securities, GSE debt securities, federal agency and GSE MBS, and foreign government debt instruments are classified as Level 2 within the ASC 820 hierarchy because the fair values are based on indicative quotes and other observable inputs obtained from independent pricing services. The fair value hierarchy level of SOMA financial assets is not necessarily an indication of the risk associated with those assets.

(6) Consolidated Variable Interest Entities

a. Description of Consolidated VIEs

i. Maiden Lane LLC

To facilitate the merger of The Bear Stearns Companies, Inc. (Bear Stearns) and JPMorgan Chase & Co. (JPMC), the FRBNY extended credit to ML in

June 2008. ML is a Delaware LLC formed by the FRBNY to acquire certain assets of Bear Stearns and to manage those assets. The assets acquired by ML were valued at $29.9 billion as of March 14, 2008, the date that the FRBNY committed to the transaction, and largely consisted of federal agency and GSE MBS, non-agency residential mortgage-back securities (RMBS), commercial and residential mortgage loans, and derivatives and associated hedges.

The FRBNY extended a senior loan of approximately $28.8 billion and JPMC extended a subordinated loan of $1.15 billion to finance the acquisition of the assets, both of which were repaid in full plus interest in 2012. The FRBNY has continued and will continue to sell the remaining assets from the ML portfolio as market conditions warrant and if the sales represent good value for the public. In accordance with the ML agreements, proceeds from future asset sales will be distributed to the FRBNY as contingent interest after all derivative instruments in ML have been terminated and paid or sold from the portfolio.

ii. Maiden Lane II LLC

The FRBNY extended credit to ML II, a Delaware LLC formed to purchase non-agency RMBS from the reinvestment pool of the securities lending portfolios of several regulated U.S. insurance subsidiaries of American International Group, Inc. (AIG). ML II purchased from the AIG subsidiaries non-agency RMBS with an approximate fair value of $20.8 billion as of October 31, 2008. ML II financed this purchase by borrowing $19.5 billion from the FRBNY and through the deferral of $1.0 billion of the purchase price payable to the AIG subsidiaries. Both the loan and the fixed deferred purchase price were paid in full plus interest in 2012.

On March 19, 2012, ML II was dissolved and the FRBNY began the process of winding up in accordance with and as required by Delaware law and the agreements governing ML II. As part of that process, during the year ended December 31, 2014, after paying expenses, ML II distributed its remaining assets to the FRBNY and to AIG and its subsidiaries in accordance with the agreement. Distributions were made to the FRBNY in the form of contingent interest totaling $53 million and to AIG and its subsidiaries in the form of variable deferred purchase price totaling $11 million during the year ended December 31, 2014. On November 12, 2014, a certificate of cancellation was filed in the office of the Delaware Secretary of State, thereby terminating the legal existence of ML II.

iii. Maiden Lane III LLC

The FRBNY extended credit to ML III, a Delaware LLC formed to purchase ABS collateralized debt obligations (CDOs) from certain third-party counterparties of AIG Financial Products Corp (AIGFP). ML III borrowed approximately $24.3 billion from the FRBNY, and AIG provided an equity contribution of $5.0 billion to ML III. The proceeds were used to purchase ABS CDOs with a fair value of $29.6 billion as of October 31, 2008. The counterparties received $26.8 billion net of principal and interest received and finance charges paid on the ABS CDOs. The LLC also made a payment to AIGFP of $2.5 billion representing the over collateralization previously posted by AIGFP and retained by counterparties in respect of terminated CDS as compared to the LLC's fair value acquisition prices calculated as of October 31, 2008. The aggregate amount of principal and interest proceeds from CDOs received after the announcement date, but prior to the settlement dates, net of financing costs, amounted to approximately $0.3 billion and therefore reduced the amount of funding required at settlement by $0.3 billion, from $29.6 billion to $29.3 billion. Both the loan and the equity contribution were repaid in full plus interest in 2012.

On September 10, 2012, ML III was dissolved, and the FRBNY began the process of winding up in accordance with and as required by Delaware law and the agreements governing ML III. As part of that process, during the year ended December 31, 2014, after paying expenses, ML III distributed its remaining assets to the FRBNY and to AIG in accordance with the agreement. Distributions were made to the FRBNY in the form of contingent interest totaling $14 million and to AIG in the form of excess amounts totaling $7 million during the year ended December 31, 2014. On November 12, 2014, a certificate of cancellation was filed in the office of the Delaware Secretary of State, thereby terminating the legal existence of ML III.

iv. TALF LLC

As discussed in Note 4, TALF LLC was formed in connection with the implementation of the TALF. TALF LLC was established for the limited purpose of purchasing any ABS that might be surrendered to the FRBNY by borrowers under the TALF or, in certain limited circumstances, TALF loans. Funding for TALF LLC's purchases of these securities was derived first through the fees received by TALF LLC from the FRBNY for this commitment and any interest earned on its investments. If that funding had proved insufficient for the purchases TALF LLC had committed to make under the put agreement, the Treasury and the FRBNY had committed to lend to TALF LLC. On March 25, 2009, the Treasury provided initial funding to TALF LLC of $100 million. On January 15, 2013, the Treasury and the FRBNY agreed to eliminate their funding commitments to TALF LLC. Pursuant to this agreement on February 6, 2013, TALF LLC repaid in full the outstanding principal and accrued interest on the Treasury loan.

On October 31, 2014, TALF LLC was dissolved and the FRBNY began the process of winding up in accordance with and as required by Delaware law and the agreements governing TALF LLC. As part of that process, during the year ended December 31, 2014, after paying expenses, TALF LLC distributed its remaining assets to the Treasury and to the FRBNY in accordance with the agreement. Distributions were made in the form of contingent interest to the Treasury totaling $98 million and to the FRBNY totaling $11 million during the year ended December 31, 2014. On November 26, 2014, a certificate of cancellation was filed in the office of the Delaware Secretary of State, thereby terminating the legal existence of TALF LLC.

b. Summary Information for Consolidated VIEs

The classification of significant assets and liabilities of ML at December 31, 2015 and 2014 is summarized in the following table (in millions):

	ML	
	2015	2014
Assets:		
Short-term investments	$1,496	$1,399
Swap contracts	56	124
Other investments	13	11
Subtotal	1,565	1,534
Cash, cash equivalents, accrued interest receivable, and other receivables	213	277
Total investments held by consolidated VIEs	$1,778	$1,811
Liabilities:		
Swap contracts	$ 21	$ 41
Cash collateral on swap contracts	36	85
Other liabilities	-	1
Total liabilities of consolidated VIEs	$ 57	$ 127

There were no assets and liabilities remaining in the ML II, ML III, and TALF LLC at December 31, 2015 and 2014.

The FRBNY's approximate maximum exposure to loss at December 31, 2015 and 2014, was $1,565 million and $1,534 million, respectively. These estimates incorporate potential losses associated with the investments recorded on the Bank's balance sheet. Additionally, information concerning the notional exposure on swap contracts is contained in the derivatives credit risk section of this Note.

The net income attributable to ML for the year ended December 31, 2015 and 2014, was as follows (in millions):

	ML	
	2015	2014
Interest income: Investments held by consolidated VIEs	$ 4	$ 77
Non-interest income:		
Realized portfolio holdings gains, net	32	1
Unrealized portfolio holdings gains, net	3	36
Non-interest income: Consolidated VIEs gains, net	35	37
Total net interest income and non-interest income	39	114
Less: Professional fees	3	4
Net income attributable to consolidated VIEs	$ 36	$110

i. Debt Securities

ML has investments in short-term instruments with maturities of greater than three months and less than one year when acquired. As of December 31, 2015 and 2014, ML's short-term instruments consisted of U.S. Treasury bills.

Other investments primarily consist of non-agency RMBS and commercial mortgage-backed securities (CMBS).

ii. Derivative Instruments

Derivative contracts are instruments, such as swap contracts, that derive their value from underlying assets, indexes, reference rates, or a combination of these factors. The ML portfolio is composed of derivative financial instruments included in a total return swap (TRS) agreement with JPMC. ML and JPMC entered into the TRS with reference obligations representing CDS primarily on CMBS and RMBS, with various market participants, including JPMC.

On an ongoing basis, ML pledges collateral for credit or liquidity related shortfalls. Separately, ML and JPMC engage in bilateral posting of collateral to cover the net mark-to-market (MTM) variations in the swap portfolio. ML only nets the collateral received from JPMC from the bilateral MTM posting for the reference obligations for which JPMC is the counterparty.

The values of ML's cash and cash equivalents include cash collateral associated with the TRS of $72 million and $128 million as of December 31, 2015 and 2014, respectively. In addition, ML has pledged $52 million and $87 million of U.S. Treasury bills to JPMC as of December 31, 2015 and 2014, respectively.

ML has entered into an International Swaps and Derivatives Association, Inc. master netting agreement with JPMC in connection with the TRS. This agreement provides ML with the right to liquidate securities held as collateral and to offset receivables and payables with JPMC in the event of default. This agreement also establishes the method for determining the net amount of receivables and payables that ML is entitled to receive from or owes to each counterparty to the swaps that underlie the TRS based upon the fair value of the relevant CDS.

For the derivative balances reported in the Combined Statements of Condition, ML offsets its asset and liability positions held with the same counterparty. In addition, ML offsets the cash collateral held with JPMC against any net liabilities of JPMC with ML under the TRS. As of December 31, 2015 and 2014, there were no amounts subject to an enforceable master netting agreement that were not offset in the Combined Statements of Condition.

The maximum potential amount of future payments the seller of credit protection could be required to make to the buyer of credit protection under a CDS is equal to the notional amount of the contract. For ML, the maximum potential payout (notional) associated with credit protection sold was $162 million and $219 million as of December 31, 2015 and 2014, respectively, and the maximum potential recovery (notional) associated with credit protection bought was $195 million and $413 million as of December 31, 2015 and 2014, respectively. The change in notional amounts is representative of the volume of activity for the year ended December 31, 2015.

There were 128 and 210 CDS contracts outstanding in the ML portfolio as of December 31, 2015 and 2014, respectively. The majority of the CDS held by ML had remaining maturities of greater than five years and reference obligations with non-investment grade (BB+ or lower) credit ratings as of December 31, 2015 and 2014.

c. Fair Value Measurement

ML has adopted ASC 820 and ASC 825 and has elected the fair value option for all holdings. The accounting and classification of these investments appropriately

reflect the ML's and the FRBNY's intent with respect to the purpose of the investments and most closely reflect the amount of the assets available to liquidate the entity's obligations.

Determination of Fair Value

ML values its investments and cash equivalents on the basis of last available bid prices or current market quotations provided by dealers or pricing services selected under the supervision of the FRBNY's designated investment manager. To determine the value of a particular investment, pricing services may use certain information with respect to market transactions in such investments or comparable investments, various relationships observed in the market between investments, quotations from dealers, and pricing metrics and calculated yield measures based on valuation methodologies commonly employed in the market for such investments. The fair value of swap contracts is provided by JPMC as calculation agent and is reviewed by the investment manager.

Market quotations may not represent fair value in certain instances in which the investment manager and the VIEs believe that facts and circumstances applicable to an issuer, a seller, a purchaser, or the market for a particular investment cause such market quotations to not reflect the fair value of an investment. In such cases or when market quotations are unavailable, the investment manager applies proprietary valuation models that use collateral performance scenarios and pricing metrics derived from the reported performance of investments with similar characteristics as well as available market data to determine fair value.

Due to the uncertainty inherent in determining the fair value of investments that do not have a readily available fair value, the fair value of these investments may differ from the values that may ultimately be realized and paid.

The following tables present the financial instruments recorded in VIEs at fair value as of December 31, 2015 by ASC 820 hierarchy (in millions):

	Level 1[1]	Level 2[1]	Level 3	Netting[2]	Total fair value
Assets:					
Short-term investments	$1,496	$ -	$ -	$ -	$1,496
Cash equivalents [3]	213	-	-	-	213
Swap contracts	-	-	130	(74)	56
Other investments	-	12	1	-	13
Total assets	$1,709	$12	$131	$(74)	$1,778
Liabilities:					
Swap contracts	$ -	$ -	$ 59	$(38)	$ 21

[1] There were no transfers between Level 1 and Level 2 and no material transfers between Levels 2 and 3 during the year ended December 31, 2015.

[2] Derivative receivables and payables and the related cash collateral received and paid are shown net when a master netting agreement exists.

[3] Cash equivalents consist primarily of money market funds.

The following tables present the financial instruments recorded in VIEs at fair value as of December 31, 2014 by ASC 820 hierarchy (in millions):

	Level 1[1]	Level 2[1]	Level 3	Netting[2]	Total fair value
Assets:					
Short-term investments	$1,399	$ -	$ -	$ -	$1,399
Cash equivalents [3]	274	-	-	-	274
Swap contracts	-	-	240	(116)	124
Other investments	-	6	5	-	11
Total assets	$1,673	$6	$245	$(116)	$1,808
Liabilities:					
Swap contracts	$ -	$ -	$115	$ (74)	$ 41

1 There were no transfers between Level 1 and Level 2 during the year ended December 31, 2014.

2 Derivative receivables and payables and the related cash collateral received and paid are shown net when a master netting agreement exists.

3 Cash equivalents consist primarily of money market funds.

As of December 31, 2015, both the Level 3 assets and liabilities held in the Combined Statements of Condition as "Investments held by consolidated variable interest entities" and "Liabilities of consolidated variable interest entities," respectively, and the associated unrealized gains and losses related to those assets and liabilities are immaterial.

The table below presents a reconciliation of all assets and liabilities measured at fair value on a recurring basis using significant unobservable inputs (Level 3) as of December 31, 2014 (in millions). Unrealized gains and losses related to those assets and liabilities still held at December 31, 2014 are reported as a component of "Investments held by consolidated variable interest entities" and "Liabilities of consolidated variable interest entities," respectively, in the Combined Statements of Condition.

	Fair value December 31, 2013	Purchases, sales, issuances, and settlements, net	Net realized/ unrealized gains (losses)	Gross transfers in[1,2]	Gross transfers out[1,2]	Fair value December 31, 2014	Change in unrealized gains (losses) related to financial instruments held at December 31, 2014
Assets:							
Commercial mortgage loans	$507	$(523)	$16	$-	$ -	$ -	$ -
Other investments	8	4	(4)	-	(3)	5	(4)
Total assets	$515	$(519)	$12	$-	$(3)	$ 5	$ (4)
Swap contracts, net	$152	$ (48)	$21	$-	$ -	$125	$13

1 The amount of transfers is based on the fair values of the transferred assets at the beginning of the reporting period.

2 Other investments, with a December 31, 2013 fair value of $3 million, were transferred from Level 2 to Level 3 because they are valued at December 31, 2014 based on non-observable inputs (Level 3). These investments were valued in the prior year based on quoted prices for identical or similar assets in non-active markets or model-based techniques for which all significant inputs are observable (Level 2).

The following table presents the gross components of purchases, sales, issuances, and settlements, net, shown for the year ended December 31, 2014 (in millions):

	Purchases	Sales	Issuances	Settlements[1]	Purchases, sales, issuances, and settlements, net
Assets:					
Commercial mortgage loans	$ -	$ -	$-	$(523)	$(523)
Other investments	1	-	-	3	4
Total assets	$1	$ -	$-	$(520)	$(519)
Swap contracts, net	$ -	$(24)	$-	$ (24)	$ (48)

[1] Includes paydowns.

As of December 31, 2014, the only material Level 3 assets or liabilities for the VIEs were the swap contracts held by ML. For the swap contracts, there are various valuation methodologies, but in each case, the fair value of the instrument underlying the swap is a significant input used to derive the fair value of the swap. The key unobservable inputs used to value those underlying instruments are credit spreads when the underlying instrument is a market index or performance data (i.e. discount rates, prepayment rates, default rates, and loss severity) when the underlying instrument is a debt security.

(7) Bank Premises, Equipment, and Software

Bank premises and equipment at December 31 were as follows (in millions):

	2015	2014
Bank premises and equipment:		
Land and land improvements	$ 404	$ 397
Buildings	2,811	2,748
Building machinery and equipment	578	564
Construction in progress	39	33
Furniture and equipment	1,048	1,032
Subtotal	4,880	4,774
Accumulated depreciation	(2,277)	(2,144)
Bank premises and equipment, net	2,603	2,630
Depreciation expense, for the years ended December 31	$ 217	$ 206

Bank premises and equipment at December 31 included the following amounts for capitalized leases (in millions):

	2015	2014
Leased premises and equipment under capital leases	$ 25	$ 26
Accumulated depreciation	(21)	(20)
Leased premises and equipment under capital leases, net	$ 4	$ 6
Depreciation expense related to leased premises and equipment under capital leases, for the years ended December 31	$ 4	$ 6

The Reserve Banks lease space to outside tenants with remaining lease terms ranging from 1 to 12 years. Rental income from such leases was $39 million and $37 million for the years ended December 31, 2015 and 2014, respectively, and is reported as a component of "Non-interest income: Other" in the Combined Statements of Income and Comprehensive Income. Future minimum lease payments that the Reserve Banks will receive under non-cancelable lease agreements in existence at December 31, 2015, are as follows (in millions):

2016	$ 34
2017	30
2018	27
2019	25
2020	21
Thereafter	63
Total	$200

The Reserve Banks had capitalized software assets, net of amortization, of $416 million and $376 million at December 31, 2015 and 2014, respectively. Amortization expense was $95 million and $117 million for the years ended December 31, 2015 and 2014, respectively. Capitalized software assets are reported as a component of "Other assets" in the Combined Statements of Condition and the related amortization is reported as a component of "Operating expenses: Other" in the Combined Statements of Income and Comprehensive Income.

The Reserve Banks had no material impairment losses in 2015. In 2014, software assets related to a multiyear ACH technology initiative were impaired and written off due to the suspension of development efforts. The resulting asset impairment loss of $23 million for the year ended December 31, 2014 is reported as a component of "Operating expenses: Other" in the Combined Statement of Income and Comprehensive Income.

(8) Commitments and Contingencies

In conducting its operations, the Reserve Banks enter into contractual commitments, normally with fixed expiration dates or termination provisions, at specific rates and for specific purposes.

At December 31, 2015, the Reserve Banks were obligated under non-cancelable leases for premises and equipment with remaining terms ranging from 1 to approximately 14 years. These leases provide for increased lease payments based upon increases in real estate taxes, operating costs, or selected price indexes.

Rental expense under operating leases for certain operating facilities, warehouses, and data processing and office equipment (including taxes, insurance, and maintenance when included in rent), net of sublease rentals, was $15 million and $13 million for the years ended December 31, 2015 and 2014, respectively.

Future minimum lease payments under non-cancelable operating leases, net of sublease rentals, with remaining terms of one year or more, at December 31, 2015, are as follows (in millions):

	Operating Leases
2016	$ 5
2017	5
2018	5
2019	4
2020	2
Thereafter	11
Future minimum lease payments	$32

At December 31, 2015, the Reserve Banks had unrecorded unconditional purchase commitments and long-term obligations extending through the year 2022 with a remaining fixed commitment of $150 million. Purchases of $31 million and $44 million were made against these commitments during 2015 and 2014, respectively. These commitments are for maintenance of currency processing machines and have variable and/or fixed components. The variable portion of the commitments is for additional services above the fixed contractual service limits. The fixed payments for the next five years under these commitments are as follows (in millions):

2016	$ -
2017	24
2018	24
2019	25
2020	25

The Reserve Banks are involved in certain legal actions and claims arising in the ordinary course of business. Although it is difficult to predict the ultimate outcome of these actions, in management's opinion, based on discussions with counsel, the legal actions and claims will be resolved without material adverse effect on the financial position or results of operations of the Reserve Banks.

(9) Retirement and Thrift Plans

Retirement Plans

The Reserve Banks currently offer three defined benefit retirement plans to its employees, based on length of service and level of compensation. Substantially all of the employees of the Reserve Banks, Board of Governors, and Office of Employee Benefits of the Federal Reserve System (OEB) participate in the Retirement Plan for Employees of the Federal Reserve System (System Plan).[1] Under the Dodd-Frank Act, newly hired Bureau employees are eligible to participate in the System Plan and, during the years ended December 31, 2015 and 2014, certain costs associated with the System Plan were reimbursed by the Bureau. In addition, employees at certain compensation levels participate in the Benefit Equalization Retirement Plan (BEP) and certain Reserve Bank officers participate in the Supplemental Retirement Plan for Select Officers of the Federal Reserve Banks (SERP).

The FRBNY, on behalf of the System, recognizes the net asset or net liability and costs associated with the System Plan in its consolidated financial statements. The net costs related to the System Plan, as well as the costs related to the BEP and

[1] The OEB was established by the System to administer selected System benefit plans.

SERP, are reported as a component of “Operating Expenses: Net periodic pension expense” in the Combined Statements of Income and Comprehensive Income. Accrued pension benefit costs are reported as a component of “Prepaid pension benefit costs” if the funded status is a net asset or “Accrued benefit costs” if the funded status is a net liability in the Combined Statements of Condition.

Following is a reconciliation of the beginning and ending balances of the System Plan benefit obligation (in millions):

	2015	2014
Estimated actuarial present value of projected benefit obligation at January 1	$13,641	$10,476
Service cost-benefits earned during the period	487	355
Interest cost on projected benefit obligation	571	530
Actuarial loss (gain)	(1,044)	2,630
Contributions by plan participants	5	5
Special termination benefits	6	15
Benefits paid	(396)	(370)
Estimated actuarial present value of projected benefit obligation at December 31	$13,270	$13,641

In October 2014, the Society of Actuaries released new mortality tables (RP-2014) and in October 2015 and 2014 new mortality projection scales (MP-2015 and MP 2014, respectively) for use in the valuation of benefits liabilities. The adoption of these new mortality tables and new mortality projection scales, adjusted for the System’s recent mortality experience and the retirement rates of System retirees, resulted in an estimated net decrease of the System Plan projected benefit obligation of approximately $471 million and an increase of $935 million in 2015 and 2014, respectively.

Following is a reconciliation showing the beginning and ending balance of the System Plan assets, the funded status, and the accrued pension benefit costs (in millions):

	2015	2014
Estimated plan assets at January 1 (of which $12,608 and $10,687 is measured at fair value as of January 1, 2015 and 2014, respectively)	$12,669	$10,808
Actual return on plan assets	(258)	1,734
Contributions by the employer	480	492
Contributions by plan participants	5	5
Benefits paid	(396)	(370)
Estimated plan assets at December 31 (of which $12,477 and $12,608 is measured at fair value as of December 31, 2015 and 2014, respectively)	$12,500	$12,669
Funded status and accrued pension benefit costs	$ (770)	$ (972)
Amounts included in accumulated other comprehensive loss are shown below:		
Prior service cost	$ (263)	$ (356)
Net actuarial loss	(3,333)	(3,484)
Total accumulated other comprehensive loss	$ (3,596)	$ (3,840)

The FRBNY, on behalf of the System, funded $480 million for each of the years ended December 31, 2015 and 2014. The Bureau is required by the Dodd-Frank Act to fund the System plan for each Bureau employee based on an established formula. During the year ended December 31, 2015, the FRBNY provided for contributions from the Bureau of $26 million, which was received by FRBNY in February 2016. During the year ended December 31, 2014, the Bank provided for and received contributions of $12 million.

The accumulated benefit obligation for the System Plan, which differs from the estimated actuarial present value of projected benefit obligation because it is based on current rather than future compensation levels, was $11,727 million and $11,985 million at December 31, 2015 and 2014, respectively.

The weighted-average assumptions used in developing the accumulated pension benefit obligation for the System Plan as of December 31 were as follows:

	2015	2014
Discount rate	4.42%	4.05%
Rate of compensation increase	4.00%	4.00%

Net periodic benefit expenses for the years ended December 31, 2015 and 2014, were actuarially determined using a January 1 measurement date. The weighted-average assumptions used in developing net periodic benefit expenses for the System Plan for the years were as follows:

	2015	2014
Discount rate	4.05%	4.92%
Expected asset return	6.75%	7.00%
Rate of compensation increase	4.00%	4.50%

Discount rates reflect yields available on high-quality corporate bonds that would generate the cash flows necessary to pay the System Plan's benefits when due. The expected long-term rate of return on assets is an estimate that is based on a combination of factors, including the System Plan's asset allocation strategy and historical returns; surveys of expected rates of return for other entities' plans and for various asset classes; a projected return for equities and fixed income investments based on real interest rates, inflation expectations, and equity risk premiums; and surveys of expected returns in equity and fixed income markets.

The components of net periodic pension benefit expense (credit) for the System Plan for the years ended December 31 are shown below (in millions):

	2015	2014
Service cost-benefits earned during the period	$ 487	$ 355
Interest cost on projected benefit obligation	571	530
Amortization of prior service cost	93	100
Amortization of net loss	223	101
Expected return on plan assets	(857)	(759)
Net periodic pension benefit expense	517	327
Special termination benefits	6	15
Bureau of Consumer Financial Protection contributions	-	(12)
Total periodic pension benefit expense	$ 523	$ 330

Estimated amounts that will be amortized from accumulated other comprehensive loss into net periodic pension benefit expense in 2016 are shown below (in millions):

Prior service cost	$ 93
Net actuarial loss	200
Total	$293

The recognition of special termination losses is primarily the result of enhanced retirement benefits provided to employees during the restructuring described in Note 12. Following is a summary of expected benefit payments, excluding enhanced retirement benefits (in millions):

2016	$ 444
2017	475
2018	508
2019	540
2020	574
2021–2025	3,395
Total	$5,936

The System's Committee on Plan Administration is responsible for oversight of the operations of the Retirement Plan, which includes the Retirement Plan trust and for determining the amounts necessary to maintain the Retirement Plan on an actuarially sound basis and the amounts that employers must contribute to pay the expenses of OEB and the Retirement Plan.

The System's Committee on Investment Performance (CIP) is responsible for establishing investment policies, selecting investment managers, and monitoring the investment managers' compliance with its policies. At December 31, 2015, the System Plan's assets were held in 14 investment vehicles: 3 actively-managed long-duration fixed income portfolios, a passively-managed long-duration fixed income portfolio, an indexed U.S. equity fund, an indexed non-U.S. developed-markets equity fund, an indexed emerging-markets equity fund, 2 private equity limited partnerships, a private equity separate account, 2 core real estate funds, a real estate limited partnership, and a money market fund.

The diversification of the System Plan's investments is designed to limit concentration of risk and the risk of loss related to an individual asset class. The three actively-managed long-duration fixed income portfolios are separate accounts benchmarked to a custom benchmark of 55 percent Barclays Long Credit Index and 45 percent Citigroup 15+ years U.S. Treasury STRIPS Index. This custom benchmark was selected as a proxy to match the liabilities of the Plan and the guidelines for these portfolios are designed to limit portfolio deviations from the benchmark. The passively-managed long-duration fixed-income portfolio is invested in 2 commingled funds and is benchmarked to 55 percent Barclays Long Credit Index and 45 percent Barclays 20+ STRIPS Index. The indexed U.S. equity fund is intended to track the overall U.S. equity market across market capitalizations and is benchmarked to the Dow Jones U.S. Total Stock Market Index. The indexed non-U.S. developed-markets equity fund is intended to track the Morgan Stanley Capital International (MSCI) World ex-US Investible Markets Index (IMI), which includes stocks from 23 markets deemed by MSCI to be "developed markets." The indexed emerging-markets equity fund is intended to track the MSCI Emerging Markets IMI Index, which includes stocks from 21 markets deemed by MSCI to be "emerging markets." The 3 indexed equity funds include stocks from across the market capitalization spectrum (i.e., large-, mid- and small-cap stocks). The 2 private equity limited partnership invest globally across various private equity strategies and the private equity separate account invests in various private equity investments globally across various strategies. The private equity separate account invests in various private equity funds and coinvestment opportunities globally in private companies and targets returns in excess of public markets over a complete market cycle. The two U.S. core real estate funds invest in high

quality, well leased, low leverage commercial real estate throughout the U.S. The Real estate limited partnership invests in non-core U.S. commercial real estate including development and repositioning of assets. Finally, the money market fund, which invests in short term Treasury and agency debt and repurchase agreements backed by Treasury and agency debt, is the repository for cash balances and adheres to a constant dollar methodology.

Permitted and prohibited investments, including the use of derivatives, are defined in either the trust agreement (for the passively-managed long-duration fixed income portfolio) or the investment guidelines (for the remaining investments). The CIP reviews the trust agreement and approves all investment guidelines as part of the selection of each investment to ensure that they are consistent with the CIP's investment objectives for the System Plan's assets.

The System Plan's policy weight and actual asset allocations at December 31, by asset category, are as follows:

	2015 Policy weight	Actual asset allocations	
		2015	2014
Fixed income	50.0%	48.6%	51.2%
U.S. equities	24.7%	25.4%	25.8%
International equities	17.4%	17.8%	17.6%
Emerging markets equities	4.5%	4.5%	4.9%
Private equity	1.7%	1.3%	0.0%
Real estate	1.7%	1.7%	0.0%
Cash	0.0%	0.7%	0.5%
Total	100.0%	100.0%	100.0%

Employer contributions to the System Plan may be determined using different assumptions than those required for financial reporting. The System Plan's anticipated funding level for 2016 is $480 million. In 2016, the Reserve Banks plan to make monthly contributions of $40 million and will reevaluate the monthly contributions upon completion of the 2016 actuarial valuation. The Reserve Banks' projected benefit obligation, funded status, and net pension expenses for the BEP and the SERP at December 31, 2015 and 2014, and for the years then ended, were not material.

Determination of Fair Value

The System Plan's publicly available investments are valued on the basis of the last available bid prices or current market quotations provided by dealers, or pricing services. To determine the value of a particular investment, pricing services may use information on transactions in such investments, quotations from dealers, pricing metrics, market transactions in comparable investments, relationships observed in the market between investments, and calculated yield measures based on valuation methodologies commonly employed in the market for such investments.

Commingled funds are valued using the net asset value as a practical expedient, as determined by the respective issuer of the fund based on the fair value of the underlying investments. Private equity and real estate investments are valued using the net asset value, as a practical expedient, which is based on the fair value of the underlying investments. The net asset value is adjusted for contributions, distributions, and both realized and unrealized gains and losses incurred during the period. The realized and unrealized gains and losses are based on reported valuation changes.

Because of the uncertainty inherent in determining the fair value of investments that do not have a readily available fair value, the fair value of these investments may differ significantly from the values that would have been reported if a readily available fair value had existed for these investments and may differ materially from the values that may ultimately be realized.

The following tables present the financial instruments recorded at fair value as of December 31 by ASC 820 hierarchy (in millions):

Description	2015			
	Level 1[1]	Level 2[1]	Level 3	Total
Short-term investments[2]	$34	$ 118	$ -	$ 152
Treasury and federal agency securities	64	2,182	-	2,246
Corporate bonds	-	2,130	-	2,130
Other fixed income securities	-	373	-	373
Commingled funds	-	7,205	-	7,205
Private Equity	-	-	157	157
Real Estate	-	-	214	214
Total	$98	$12,008	$371	$12,477

[1] There were no transfers between Level 1 and Level 2 during the year.
[2] Short-term investments include cash equivalents of $88 million.

Description	2014			
	Level 1[1]	Level 2[1]	Level 3	Total
Short-term investments[2]	$ 27	$ 94	$ -	$ 121
Treasury and federal agency securities	111	2,179	-	2,290
Corporate bonds	-	2,109	-	2,109
Other fixed income securities	-	443	-	443
Commingled funds	-	7,598	-	7,598
Private Equity	-	-	47	47
Real Estate	-	-	-	-
Total	$138	$12,423	$47	$12,608

[1] There were no transfers between Level 1 and Level 2 during the year.
[2] Short-term investments include cash equivalents of $63 million.

The System Plan enters into futures contracts, traded on regulated exchanges, to manage certain risks and to maintain appropriate market exposure in meeting the investment objectives of the System Plan. The System Plan bears the market risk that arises from any unfavorable changes in the value of the securities or indexes underlying these futures contracts. The use of futures contracts involves, to varying degrees, elements of market risk in excess of the amount recorded in the Combined Statements of Condition. The guidelines established by the CIP further reduce risk by limiting the net futures positions, for most fund managers, to 15 percent of the market value of the advisor's portfolio.

At December 31, 2015 and 2014, a portion of short-term investments was available for futures trading. There were $3 million and $1 million of Treasury securities pledged as collateral for the years ended December 31, 2015 and 2014, respectively.

Thrift Plan

Employees of the Reserve Banks participate in the defined contribution Thrift Plan for Employees of the Federal Reserve System (Thrift Plan). The Reserve Banks match 100 percent of the first 6 percent of employee contributions from the date of hire and provide an automatic employer contribution of 1 percent of eligible pay. The Reserve Banks' Thrift Plan contributions totaled $121 million and $113 million for the years ended December 31, 2015 and 2014, respectively, and are reported as a component of "Operating expenses: Salaries and benefits" in the Combined Statements of Income and Comprehensive Income.

(10) Postretirement Benefits Other Than Retirement Plans and Postemployment Benefits

Postretirement Benefits Other Than Retirement Plans

In addition to the Reserve Banks' retirement plans, employees who have met certain age and length-of-service requirements are eligible for both medical and life insurance benefits during retirement.

The Reserve Bank and plan participants fund benefits payable under the medical and life insurance plans as due and the plans have no assets.

Following is a reconciliation of the beginning and ending balances of the benefit obligation (in millions):

	2015	2014
Accumulated postretirement benefit obligation at January 1	$1,769	$1,538
Service cost-benefits earned during the period	76	63
Interest cost on accumulated benefit obligation	72	75
Net actuarial loss (gain)	(105)	164
Curtailment loss (gain)	-	(2)
Contributions by plan participants	23	25
Benefits paid	(93)	(92)
Medicare Part D subsidies	5	5
Plan amendments	(3)	(7)
Accumulated postretirement benefit obligation at December 31	$1,744	$1,769

At December 31, 2015 and 2014, the weighted-average discount rate assumptions used in developing the postretirement benefit obligation were 4.31 percent and 3.96 percent, respectively.

Discount rates reflect yields available on high-quality corporate bonds that would generate the cash flows necessary to pay the plan's benefits when due. The System Plan discount rate assumption setting convention uses an unrounded rate.

Following is a reconciliation of the beginning and ending balance of the plan assets, and the unfunded postretirement benefit obligation and accrued postretirement benefit costs (in millions):

	2015	2014
Fair value of plan assets at January 1	$ -	$ -
Contributions by the employer	65	62
Contributions by plan participants	23	25
Benefits paid	(93)	(92)
Medicare Part D subsidies	5	5
Fair value of plan assets at December 31	$ -	$ -
Unfunded obligation and accrued postretirement benefit cost	$1,744	$1,769
Amounts included in accumulated other comprehensive loss are shown below:		
Prior service cost	$ 20	$ 26
Net actuarial loss	(227)	(355)
Deferred curtailment gain	1	1
Total accumulated other comprehensive loss	$ (206)	$ (328)

Accrued postretirement benefit costs are reported as a component of "Accrued benefit costs" in the Combined Statements of Condition.

For measurement purposes, the assumed health-care cost trend rates at December 31 are provided in the table below. The current health-care cost trend rate for next year is expected to decline ratably each year until achieving the ultimate trend rate in 2022:

	2015	2014
Health-care cost trend rate assumed for next year	7.00%	6.60%
Rate to which the cost trend rate is assumed to decline (the ultimate trend rate)	4.75%	4.75%
Year that the rate reaches the ultimate trend rate	2022	2019

Assumed health-care cost trend rates have a significant effect on the amounts reported for health-care plans. A one percentage point change in assumed health-care cost trend rates would have the following effects for the year ended December 31, 2015 (in millions):

	One percentage point increase	One percentage point decrease
Effect on aggregate of service and interest cost components of net periodic postretirement benefit costs	$ 26	$ (21)
Effect on accumulated postretirement benefit obligation	218	(187)

The following is a summary of the components of net periodic postretirement benefit expense for the years ended December 31 (in millions):

	2015	2014
Service cost-benefits earned during the period	$ 76	$ 63
Interest cost on accumulated benefit obligation	72	75
Amortization of prior service cost	(10)	(10)
Amortization of net actuarial loss	24	10
Net periodic postretirement benefit expense	$162	$138

Estimated amounts that will be amortized from accumulated other comprehensive loss into net periodic postretirement benefit expense in 2016 are shown below:

Prior service cost	$(9)
Net actuarial loss	8
Total	$(1)

Net postretirement benefit costs are actuarially determined using a January 1 measurement date. At January 1, 2015 and 2014, the weighted-average discount rate assumptions used to determine net periodic postretirement benefit costs were 3.96 percent and 4.79 percent, respectively.

Net periodic postretirement benefit expense is reported as a component of "Operating expenses: Salaries and benefits" in the Combined Statements of Income and Comprehensive Income.

The Medicare Prescription Drug, Improvement and Modernization Act of 2003 established a prescription drug benefit under Medicare (Medicare Part D) and a federal subsidy to sponsors of retiree health-care benefit plans that provide benefits that are at least actuarially equivalent to Medicare Part D. The benefits provided under the Reserve Banks' plan to certain participants are at least actuarially equivalent to the Medicare Part D prescription drug benefit. The estimated effects of the subsidy are reflected in actuarial (gain)/loss in the accumulated postretirement benefit obligation and net periodic postretirement benefit expense.

Federal Medicare Part D subsidy receipts were $4 million and $5 million in the years ended December 31, 2015 and 2014, respectively. Expected receipts in 2016, related to benefits paid in the years ended December 31, 2015 and 2014, are $3 million.

Following is a summary of expected postretirement benefit payments (in millions):

	Without subsidy	With subsidy
2016	$ 79	$ 74
2017	84	78
2018	89	83
2019	94	87
2020	98	91
2021–2025	574	528
Total	$1,018	$941

Postemployment Benefits

The Reserve Banks offers benefits to former qualifying or inactive employees. Postemployment benefit costs are actuarially determined using a December 31 measurement date and include the cost of providing disability; medical, dental, and vision insurance; and survivor income benefits. The accrued postemployment benefit costs recognized by the Reserve Banks at December 31, 2015 and 2014, were $148 million and $156 million, respectively. This cost is included as a component of "Accrued benefit costs" in the Combined Statements of Condition. Net periodic postemployment benefit expense (credit) included in 2015 and 2014 operating expenses were $12 million and $29 million, respectively, and are recorded as a component of "Operating expenses: Salaries and benefits" in the Combined Statements of Income and Comprehensive Income.

(11) Accumulated Other Comprehensive Income and Other Comprehensive Income

Following is a reconciliation of beginning and ending balances of accumulated other comprehensive income (loss) as of December 31 (in millions):

	2015			2014		
	Amount related to defined benefit retirement plan	Amount related to postretirement benefits other than retirement plans	Total accumulated other comprehensive income (loss)	Amount related to defined benefit retirement plan	Amount related to postretirement benefits other than retirement plans	Total accumulated other comprehensive income (loss)
Balance at January 1	$(3,840)	$(328)	$(4,168)	$(2,384)	$(172)	$(2,556)
Change in funded status of benefit plans:						
Prior service costs arising during the year	-	3	3	-	7	7
Amortization of prior service cost	93[1]	(10)[2]	83	100[1]	(10)[2]	90
Change in prior service costs related to benefit plans	93	(7)	86	100	(3)	97
Net actuarial (loss) gain arising during the year	(72)	105	33	(1,657)	(164)	(1,821)
Deferred curtailment gain	-	-	-	-	1	1
Amortization of net actuarial loss	223[1]	24[2]	247	101[1]	10[2]	111
Change in actuarial (losses) gains related to benefit plans	151	129	280	(1,556)	(153)	(1,709)
Change in funded status of benefit plans—other comprehensive income (loss)	244	122	366	(1,456)	(156)	(1,612)
Balance at December 31	$(3,596)	$(206)	$(3,802)	$(3,840)	$(328)	$(4,168)

[1] Reclassification is reported as a component of “Operating Expenses: Net periodic pension expense” in the Combined Statements of Income and Comprehensive Income.

[2] Reclassification is reported as a component of “Operating Expenses: Salaries and benefits” in the Combined Statements of Income and Comprehensive Income.

Additional detail regarding the classification of accumulated other comprehensive loss is included in Note 9 and 10.

(12) Business Restructuring Charges

In 2014, the Treasury announced a plan to consolidate the number of Reserve Banks providing fiscal agent services to the Treasury from ten to four. The new infrastructure will involve consolidation of substantially all operations to the FRBC, the FRBKC, the FRBNY, and the FRBSL.

Following is a summary of financial information related to the restructuring plans (in millions):

	2015 restructuring plans	2014 restructuring plans	Total
Information related to restructuring plans as of December 31, 2015:			
Total expected costs related to restructuring activity	$ 1	$ 22	$ 23
Estimated future costs related to restructuring activity	-	3	3
Expected completion date	2017	2018	
Reconciliation of liability balances:			
Balance at December 31, 2013	$ -	$ -	$ -
Employee separation costs	-	14	14
Other costs	-	1	1
Adjustments	-	1	1
Payments	-	-	-
Balance at December 31, 2014	$ -	$ 16	$ 16
Employee separation costs	1	3	4
Other costs	-	2	2
Adjustments	-	(3)	(3)
Payments	-	(2)	(2)
Balance at December 31, 2015	$ 1	$ 16	$ 17

Employee separation costs are primarily severance costs for identified staff reductions associated with the announced restructuring plans. Separation costs that are provided under terms of ongoing benefit arrangements are recorded based on the accumulated benefit earned by the employee. Separation costs that are provided under the terms of one-time benefit arrangements are generally measured based on the expected benefit as of the termination date and recorded ratably over the period to termination. Restructuring costs related to employee separations are reported as a component of "Operating expenses: Salaries and benefits" in the Combined Statements of Income and Comprehensive Income.

Other costs include retention pay and are shown as a component of "Operating Expenses: Salaries and benefits" in the Combined Statements of Income and Comprehensive Income.

Adjustments to the accrued liability are primarily due to changes in the estimated restructuring costs and are shown as a component of the appropriate expense category in the Combined Statements of Income and Comprehensive Income.

Restructuring costs associated with the impairment of certain Reserve Bank assets, including software, buildings, leasehold improvements, furniture, and equipment, are discussed in Note 7. Costs associated with enhanced pension benefits for all Reserve Banks are recorded on the books of the FRBNY as discussed in Note 9. Costs associated with enhanced postretirement benefits are disclosed in Note 10.

(13) Distribution of Comprehensive Income

The following table presents the distribution of the Bank's comprehensive income for the years ended December 31 (in millions):

	2015	2014
Dividends on capital stock	$ 1,743	$ 1,686
Transfer to (from) surplus	(18,572)	1,065
Earnings remittances to the Treasury		
Interest on Federal Reserve notes	91,143	96,902
Required by the Federal Reserve Act, as amended by the FAST Act	25,956	-
Total distribution	$100,270	$99,653

Before the enactment of the FAST Act, the amount reported as transfer to (from) surplus represented the amount necessary to equate surplus with capital paid-in, in accordance with the Board of Governor's policy. Subsequent to the enactment of the FAST Act, the amount reported as transfer to (from) surplus represents the amount necessary to maintain surplus at an amount equal to the Reserve Banks' allocated portion of the aggregate surplus limitation.

On December 28, 2015, the Reserve Banks reduced the aggregate surplus to the $10 billion limit in the FAST Act by remitting $19.3 billion to the Treasury, which is reported as a component of "Earnings remittances to the Treasury: Required by the Federal Reserve Act, as amended by the FAST Act" in the Reserve Banks' Combined Statements of Income and Comprehensive Income, and in the table above.

(14) Subsequent Events

The FAST Act includes provisions that, effective on January 1, 2016, will change the rate of dividends paid to member banks by the Reserve Banks. See Note 3m for additional information on these FAST Act provisions.

There were no other subsequent events that require adjustments to or disclosures in the combined financial statements as of December 31, 2015. Subsequent events were evaluated through March 8, 2016, which is the date that the combined financial statements were available to be issued.

Office of Inspector General Activities

The Office of Inspector General (OIG) for the Federal Reserve Board, which is also the OIG for the Consumer Financial Protection Bureau (CFPB), operates in accordance with the Inspector General Act of 1978, as amended. The OIG conducts activities and makes recommendations to promote economy and efficiency; enhance policies and procedures; and prevent and detect waste, fraud, and abuse in Board programs and operations, including functions that the Board has delegated to the Federal Reserve Banks. Accordingly, the OIG plans and conducts audits, inspections, evaluations, investigations, and other reviews relating to Board and Board-delegated programs and operations. It also retains an independent public accounting firm to annually audit the Board's and the Federal Financial Institutions Examination Council's financial statements. In addition, the OIG keeps the Congress and the Board of Governors fully informed about serious abuses and deficiencies.

During 2015, the OIG issued 23 audit, inspection, and evaluation reports (table 1) and conducted a number of follow-up reviews to evaluate action taken on prior recommendations. Due to the sensitive nature of some of the material, certain reports were only issued internally to the Board, as indicated. OIG investigative work resulted in 26 arrests, 30 indictments, and 17 convictions, as well as $1,003,607,154 in criminal fines and restitution. Twenty-seven investigations were opened and 32 investigations were closed during the year. The OIG also issued its listings of major management challenges facing the Board and the CFPB. Further, the OIG issued two *Semiannual Report*s *to Congress* and performed approximately 51 reviews of legislation and regulations related to the operations of the Board, the CFPB, or the OIG.

For more information and to view OIG reports, visit the OIG's website at http://oig.federalreserve.gov. Specific details about the OIG's body of work also may be found in the OIG's *Work Plan* and *Semiannual Report*s *to Congress*.

Table 1. OIG audit, inspection, and evaluation reports issued in 2015

Report title	Month issued
Audit of Planned Physical and Environmental Controls for the Board's Data Center Relocation	January
The CFPB Can Enhance Its Diversity and Inclusion Efforts	March
Board of Governors of the Federal Reserve System Financial Statements as of and for the Years Ended December 31, 2014 and 2013, and Independent Auditors' Reports	March
Federal Financial Institutions Examination Council Financial Statements as of and for the Years Ended December 31, 2014 and 2013, and Independent Auditors' Reports	March
Review of the Failure of Waccamaw Bank	March
Security Control Review of the CFPB's Tableau System (internal report)	March
The Board Can Enhance Its Diversity and Inclusion Efforts	March
The CFPB Is in Compliance With IPIA, as Amended	May
Coordination of Responsibilities Among the Consumer Financial Protection Bureau and the Prudential Regulators—Limited Scope Review	June
The CFPB Can Enhance Its Process for Notifying Prudential Regulators of Potential Material Violations	June
Security Control Review of the CFPB's Data Team Complaint Database (internal report)	July
CFPB Headquarters Construction Costs Appear Reasonable and Controls Are Designed Appropriately	July
The CFPB Can Further Enhance Internal Controls for Certain Hiring Processes	August
The CFPB Can Enhance Its Contract Management Processes and Related Controls	September
Security Control Review of the Board's Consolidated Supervision Comparative Analysis, Planning and Execution System (internal report)	September
Opportunities Exist to Enhance Management Controls Over the CFPB's Consumer Complaint Database	September
The Board Continues to Follow a Structured Approach to Planning and Executing the Relocation of the Data Center	September
Congressional Request Related to the In-Scope Borrower Population of the Independent Foreclosure Review and the Subsequent Payment Agreement	September
The Board Identified Areas of Improvement for Its Supervisory Stress Testing Model Validation Activities, and Opportunities Exist for Further Enhancement	October
2015 Audit of the Board's Information Security Program	November
2015 Audit of the CFPB's Information Security Program	November
Fiscal Year 2015 Risk Assessment of the CFPB's Purchase Card Program	December
Security Control Review of the Board's Statistics and Reserves System (internal report)	December

Government Accountability Office Reviews

The Federal Banking Agency Audit Act (Pub. L. No. 95–320) authorizes the Government Accountability Office (GAO) to audit certain aspects of Federal Reserve System operations. The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank Act) directs the GAO to conduct additional audits with respect to these operations. In 2015, the GAO completed 12 projects that involved the Federal Reserve (table 1). Sixteen projects were ongoing as of December 31, 2015 (table 2).

Table 1. Reports completed during 2015

Report title	Report number	Month issued (2015)
Dodd-Frank Regulations: Impacts on Community Banks, Credit Unions and Systemically Important Institutions	GAO-16-169	December
Financial Audit: Bureau of the Fiscal Service's Fiscal Years 2015 and 2014 Schedules of Federal Debt	GAO-16-160	November
Lender-Placed Insurance: More Robust Data Could Improve Oversight	GAO-15-631	September
International Insurance Capital Standards: Collaboration among U.S. Stakeholders Has Improved but Could Be Enhanced	GAO-15-534	July
Mortgage Reforms: Actions Needed to Help Assess Effects of New Regulations	GAO-15-185	July
Debt Limit: Market Response to Recent Impasses Underscores Need to Consider Alternative Approaches	GAO-15-476	July
Cybersecurity: Bank and Other Depository Regulators Need Better Data Analytics and Depository Institutions Want More Usable Threat Information	GAO-15-509	July
Bank Regulation: Lessons Learned and a Framework for Monitoring Emerging Risks and Regulatory Response	GAO-15-365	June
Community Development Capital Initiative: Status of the Program Investments and Participants	GAO-15-542	May
Securities Regulation: SEC Can Further Enhance Its Oversight Program of FINRA	GAO-15-376	April
Management Report: Areas for Improvement in the Federal Reserve Banks' Information Systems Controls	GAO-15-413R	April
Financial Company Bankruptcies: Information on Legislative Proposals and International Coordination	GAO-15-299	March

Note: In February 2015, the GAO removed the Federal Reserve as an agency participant for an engagement concerning student loan repayment programs.

Table 2. Projects active at year-end 2015

Subject of project	Month initiated	Status
Duplication in the U.S. financial regulatory system	February 2014	Open
Federal Reserve's payments system operations	October 2014	Open
Remittance service providers	October 2014	Closed 2/16/2016
International remittances update	November 2014	Closed 2/16/2016
Resolution plans for large financial institutions	November 2014	Open
Federal Reserve stress tests	December 2014	Open
Office of Financial Research	March 2015	Open
Implementation of Regulation D	April 2015	Open
Mortgage servicing rights	May 2015	Open
Section 302 of the Riegle Community Development and Regulatory Improvement Act of 1994	June 2015	Closed 1/27/2016
National Flood Insurance Program	July 2015	Open
Accounting and disbursement of funds related to payments from financial institutions associated with fines, penalties, and forfeitures for BSA/AML violations, U.S. sanctions programs, and the Foreign Corrupt Practices Act requirements	August 2015	Open
Accounting and disbursement of funds related to payments from financial institutions to the federal government associated with fines, penalties, and forfeitures for various violations	August 2015	Open
Independent leasing authority	September 2015	Open
Community Reinvestment Act	September 2015	Open
Self-directed retirement savings arrangements	November 2015	Open

13 Federal Reserve System Budgets

The Federal Reserve Board of Governors and the Federal Reserve Banks prepare annual budgets as part of their efforts to ensure appropriate stewardship and accountability.[1] This section presents information on the 2015 budget performance of the Board and Reserve Banks, and on their 2016 budgets, budgeting processes, and trends in expenses and employment. This section also presents information on the costs of new currency.

System Budgets Overview

Tables 1 and 2 summarize the Federal Reserve Board of Governors' and Federal Reserve Banks' 2015 budgeted and actual and 2016 budgeted operating expenses and employment.[2]

1 Before 2013, information about the budgeted expenses of the Board and Reserve Banks was presented in a separate report titled *Annual Report: Budget Review*. Copies of that report are available at www.federalreserve.gov/publications/budget-review/default.htm.

Each budget covers one calendar year.

2 Substantially all employees of the Board and Reserve Banks participate in the Retirement Plan for Employees of the Federal Reserve System (System Plan). Reserve Bank employees at certain compensation levels participate in the Benefit Equalization Plan, and certain Reserve Bank officers participate in the Supplemental Retirement Plan for Select Officers of the Reserve Banks. The operating expenses of the Reserve Banks presented in this section do not include expenses related to the retirement plans; additional information about these expenses can be found in section 11, "Statistical Tables" (see "Table 10. Income and expenses of the Federal Reserve Banks, by Bank").

Table 1. Total operating expenses of the Federal Reserve System, net of receipts and claims for reimbursement, 2015–16
Millions of dollars, except as noted

Item	2015 budget	2015 actual	Variance 2015 actual to 2015 budget		2016 budget	Variance 2016 budget to 2015 actual	
			Amount	Percent		Amount	Percent
Board	629.3	643.5	14.2	2.3	709.5	66.0	10.3
OIG	29.0	28.9	-0.1	-0.3	31.8	2.9	9.9
Reserve Banks[1]	3,968.7	3,875.3	-93.4	-2.4	4,116.6	241.3	6.2
Currency	717.9	689.2	-28.7	-4.0	737.4	48.2	7.0
Total System operating expenses	5,344.9	5,236.9	-108.0	-2.0	5,595.3	358.3	6.8
Revenue from priced services	414.4	429.1	14.7	3.5	426.9	-2.2	-0.5
Claims for reimbursement[2]	626.1	650.5	24.4	3.9	652.6	2.1	0.3
Other income[3]	2.9	2.9	*	0.5	2.5	-0.4	-13.8
Revenue and claims for reimbursement[4]	1,043.4	1,082.5	39.1	3.7	1,082.0	-0.5	0.0
Total System operating expenses, net of revenue and claims for reimbursement	**4,301.5**	**4,154.4**	**-147.1**	**-3.4**	**4,513.3**	**358.8**	**8.6**

Note: Here and in subsequent tables, components may not sum to totals and may not yield percentages shown because of rounding.

1 Excludes Reserve Bank capital outlays as well as assessments by the Board of Governors for costs related to currency and the operations of the Board of Governors and the Consumer Financial Protection Bureau (CFPB).

2 Reimbursable claims include the expenses of fiscal agency and depository services provided to the U.S. Treasury, other government agencies, and other fiscal principals.

3 Fees that depository institutions pay for the settlement component of the Fedwire Securities Service transactions for Treasury securities transfers.

4 Excludes annual assessments for the supervision of large financial companies pursuant to Regulation TT, which are not recognized as revenue or used to fund Board expenses. (See section 4, "Supervision and Regulation," for more information.)

* Less than $50,000.

Table 2. Employment in the Federal Reserve System, 2015–16

Item	2015 budget	2015 actual	Variance 2015 actual to 2015 budget		2016 budget	Variance 2016 budget to 2015 actual	
			Amount	Percent		Amount	Percent
Board[1]	2,673	2,700	27	1.0	2,789	89	3.3
OIG[1]	125	125	0	0.0	130	5	4.0
Reserve Banks[2]	19,295	18,986	-310	-1.6	19,424	438	2.3
Total System employment	**22,093**	**21,811**	**-283**	**-1.3**	**22,343**	**532**	**2.4**

Note: Employment numbers presented include authorized position counts for the Board and OIG and average number of personnel (ANP) for the Reserve Banks. ANP is the average number of employees expressed in terms of full-time positions for the period and includes outside agency help.

[1] Budget represents authorized position count at the beginning of the year, and actual represents authorized position count at year-end.

[2] Includes employment of the Federal Reserve Information Technology (FRIT) support function and the Office of Employee Benefits (OEB).

2015 Budget Performance

In carrying out its responsibilities in 2015, the Federal Reserve System incurred $4.2 billion in net expenses. Total System operating expenses of $5,236.9 million were offset by $1,082.5 million in revenue from priced services, claims for reimbursement, and other income. Total 2015 System operating expenses were $108.0 million, or 2.0 percent, less than the amount budgeted for 2015.

2016 Operating Expense Budget

Budgeted 2016 operating expenses, net of revenue and reimbursements, are $358.8 million, or 8.6 percent, higher than 2015 actual expenses. The Reserve Bank budgets comprise almost three-quarters of the System budget (figure 1). Budgeted 2016 revenue from priced services and claims for reimbursements are expected to remain stable in 2016.

Trends in Expenses and Employment

From the actual 2006 level to the budgeted 2016 amount, the total expenses of the Federal Reserve System have increased an average of 4.6 percent per year (figure 2). Over the same period, nondefense discretionary spending by the federal government has increased an average of 1.3 percent per year (figure 3). Federal Reserve System employment declined from 2006 through 2010 because of continued efforts to reduce the size of the System's check service and efficiency improvements in cash and support functions. Staffing has subsequently increased because of requirements of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank Act) and other responses to the financial crisis (figure 4).

Growth in supervision expenses over the past 10 years has been driven by additional supervisory resources needed to respond to the financial crisis, to continue to implement expanded supervisory responsibilities mandated by the Dodd-Frank Act, and to maintain appropriate coverage following growth in the number of supervised state member banks. Expense growth in the monetary policy area during the financial crisis has been followed by a focus on enhancing financial stability monitoring and dedicating additional resources to regional economic research.

Board employees also participate in the Benefit Equalization Plan, and Board officers participate in the Pension Enhancement Plan for Officers of the Board of Governors of the Federal Reserve System (PEP). The operating expenses of the Board presented in this section include expenses related to Board participants in the Benefit Equalization Plan and PEP but do not include expenses related to the System Plan.

Figure 1. Distribution of budgeted expenses of the Federal Reserve System, 2016

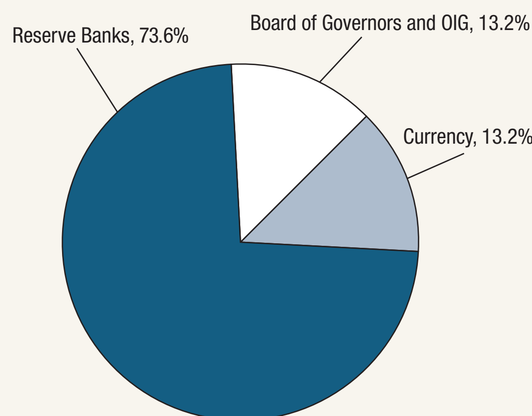
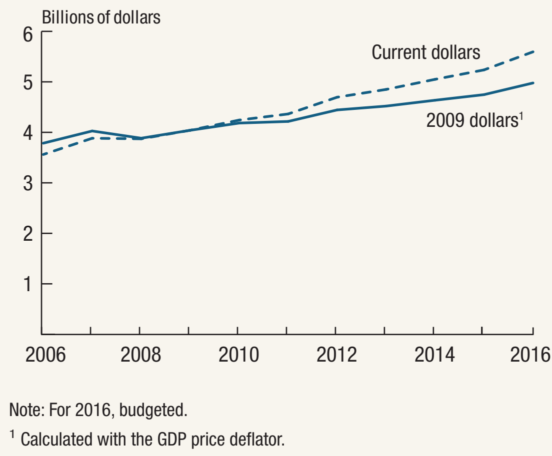


Figure 2. Total expenses of the Federal Reserve System, 2006–16

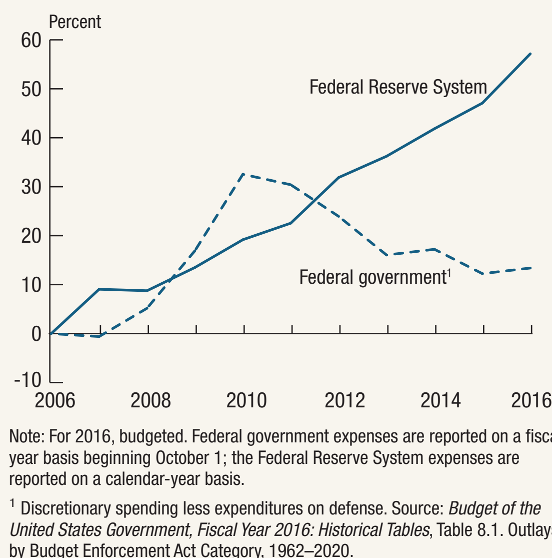


Note: For 2016, budgeted.

[1] Calculated with the GDP price deflator.

Federal Reserve Bank expenses in the cash area have increased as a result of a multiyear effort to modernize the cash-processing and inventory-tracking infrastructure. Expenses for services provided to the Treasury have grown to meet that agency's evolving needs, including the development of enhanced automated tools for the Treasury's collection and payment services, the addition of Treasury applications to the Treasury Web Application Infrastructure (TWAI), and other requested projects. These increases have been partially offset by substantial expense and staffing decreases related to efficiencies

Figure 3. Cumulative change in Federal Reserve System expenses and federal government expenses, 2006–16



Note: For 2016, budgeted. Federal government expenses are reported on a fiscal-year basis beginning October 1; the Federal Reserve System expenses are reported on a calendar-year basis.

[1] Discretionary spending less expenditures on defense. Source: *Budget of the United States Government, Fiscal Year 2016: Historical Tables*, Table 8.1. Outlays by Budget Enforcement Act Category, 1962–2020.

Figure 4. Employment in the Federal Reserve System, 2006–16

Note: For 2016, budgeted. Employment numbers presented include position counts for the Board and OIG and average number of personnel (ANP) for the Reserve Banks.

or to organizational changes in electronic check-processing, fiscal agency, cash, and support functions. They have also been partially offset by expense reductions resulting from the continued decline in paper check volume.

2016 Capital Budgets

The capital budgets for the Board and Reserve Banks total $69.8 million and $403.8 million, respectively.[3] As in previous years, the capital budgets in 2016 include funding for projects that support the strategic direction outlined by the Board and each Reserve Bank. These strategic goals emphasize investments that continue to improve operational efficiencies, enhance services to Bank customers, and ensure a safe and productive work environment.

Board of Governors Budgets

The Board's budget is grounded in the direction set by its *Strategic Framework 2012–15* (www.federalreserve.gov/publications/gpra/files/2012-2015-strategic-framework.pdf) and *Strategic Plan 2016–19* (www.federalreserve.gov/publications/gpra/files/2016-

[3] The capital budget reported for the Board includes single-year outlays and 2016 outlays from multiyear projects of the Board and the Office of Inspector General (OIG). The capital budget reported for the Reserve Banks includes the amounts budgeted for the Federal Reserve Information Technology (FRIT) support function and the Office of Employee Benefits (OEB).

2019-gpra-strategic-plan.pdf).[4] The budget is structured by division, office, or special account.

The Board's budget process is as follows:

- At the start of the budget process, the chief operating officer (COO) and chief financial officer (CFO) meet with the Committee on Board Affairs (CBA) and recommend a specific growth target for the Board's operating budget. The recommendation is based on a growth projection that includes known changes in the Board's base budget (personnel expenses as well as goods and services), funding clearly defined in the strategic plan, and additional initiatives. The growth projection also incorporates the full-year impact of positions added during the prior year as well as proposed changes to the Board's compensation and benefit programs, along with historic spending trends in goods and services.
- Staff reviews initial budget requests submitted by divisions and offices, including proposed initiatives and potential savings, and works collaboratively with all divisions and offices to refine budget submissions and bring the proposed operating budget in line with the growth target.
- The COO and CFO subsequently meet with the Executive Committee, which comprises the directors of each division, and the CBA to further review and refine the budget submissions.
- Staff submits the proposed budget to the CBA for review.
- The administrative governor submits the budget to the full Board for review and final action.
- Expenses are monitored throughout the year. Variances are analyzed and reported.[5]

The Board's Office of Inspector General (OIG), in keeping with its statutory independence, prepares its proposed budget apart from the Board's budget. The OIG presents its budget directly to the Board for approval; thus, information on the OIG's budget is also provided in the discussion that follows.

Tables 3 and 4 summarize the Board's 2015 budgeted and actual expenditures and its 2016 budgeted expenditures by division, office, or special account and by account classification, respectively. Table 5 summarizes the Board's budgeted and actual authorized position count for 2015 and 2016. Each table also includes a line item for the OIG.

2015 Budget Performance

Board of Governors

Total expenses for Board operations were $643.5 million, which was $14.2 million, or 2.3 percent, more than the approved 2015 budget of $629.3 million. The Board's 2015 single-year capital spending was less than budgeted by $3.0 million, or 26.9 percent, and multiyear capital projects remained within their project budgets with actual spending in 2015 less than budgeted by $34.6 million, or 53.8 percent.

The 2015 operational overrun was primarily driven by overruns in personnel services and by significant timing-related adjustments and one-time accounting entries in goods and services. Personnel services were $9.8 million more than the 2015 budget primarily because of the ability of divisions to hire faster than projected, compensation adjustments, and additional benefit costs resulting from updated pension cost assumptions. Goods and services were $4.4 million more than the budget primarily because of a timing-related adjustment for furniture and equipment purchases that were planned in the prior year's budget and a one-time accounting entry associated with the ongoing building renovation project. In September 2015, the Board authorized the overexpenditure of the 2015 operating budget, excluding specific building-related accounting entries, by 1.5 percent.

Office of Inspector General

Total expenses for OIG operations were $28.9 million, which was $0.1 million, or 0.3 percent less than the approved 2015 operating budget. Personnel services were $0.7 million more than budgeted largely because hiring occurred earlier than anticipated.

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[4] The *Strategic Framework 2012–15* identified and framed six overarching themes for the Board to address over the four-year planning horizon, along with recommended resource investments in terms of personnel and facilities. The six themes are: supervision, regulation, and financial stability; data governance; facilities infrastructure; maximizing the value of human capital; management processes; and cost reduction and budgetary growth. The *Strategic Plan 2016–19*, which was approved by the Board in July 2015, continues the work of the *Strategic Framework 2012–15*. In addition to investing in ongoing operations, the Board will prioritize investments and dedicate sufficient resources to six pillars over the 2016–19 period, which will allow the Board to advance its mission and respond to continuing and evolving challenges. The six pillars identified for 2016–19 are: project development and resource allocation, workforce, physical infrastructure, technology, data, and public engagement and accountability.

[5] The Division of Financial Management implemented a multi-year budget development and forecasting automated system, which will help inform budget development, provide forecast information, and allow for greater comparability in reporting to Federal Reserve Bank information.

Table 3. Operating expenses of the Board of Governors, by division, office, or special account, 2015–16
Millions of dollars, except as noted

Division, office, or special account	2015 budget[1]	2015 actual	Variance 2015 actual to 2015 budget		2016 budget	Variance 2016 budget to 2015 actual	
			Amount	Percent		Amount	Percent
Board Members	27.3	26.2	-1.1	-4.1	27.9	1.7	6.6
Secretary	10.0	10.1	0.1	1.0	10.6	0.4	4.3
Research and Statistics	66.2	67.2	1.0	1.5	72.4	5.2	7.7
International Finance	28.6	27.4	-1.2	-4.2	31.3	4.0	14.5
Monetary Affairs	34.0	34.2	0.2	0.5	37.9	3.7	10.8
Financial Stability Policy and Research	7.6	8.0	0.4	4.9	9.5	1.5	18.5
Banking Supervision and Regulation	122.4	128.8	6.4	5.2	139.6	10.8	8.4
Consumer and Community Affairs	27.3	27.5	0.2	0.7	31.8	4.3	15.7
Legal	25.9	25.7	-0.2	-0.8	28.7	3.1	11.9
Chief Operating Officer	14.0	11.9	-2.1	-14.7	15.9	4.0	33.7
Financial Management	11.1	11.4	0.3	2.4	12.2	0.8	6.6
Reserve Bank Operations and Payment Systems	39.6	40.9	1.3	3.4	41.2	0.3	0.7
Information Technology	94.8	95.4	0.6	0.6	102.5	7.1	7.4
IT income[2]	-44.0	-44.2	-0.2	0.4	-45.0	-0.8	1.8
Management	114.0	111.9	-2.0	-1.8	121.6	9.6	8.6
Centrally-managed benefits[3]	9.8	13.4	3.6	37.2	14.1	0.6	4.8
Special projects	14.7	13.4	-1.3	-8.9	17.0	3.6	27.1
Extraordinary items	26.0	34.2	8.2	31.5	40.3	6.1	17.9
Total, Board operations	**629.3**	**643.5**	**14.2**	**2.3**	**709.5**	**66.0**	**10.3**
Office of Inspector General	29.0	28.9	-0.1	-0.3	31.8	2.9	9.9

[1] The 2015 budget figures do not reflect internal transfers among divisions and accounts during the year.
[2] Previously, this special account was reported as "Data processing income."
[3] Previously, this special account was reported as "Residual retirement."

Goods and services were $0.8 million less than budgeted because of less-than-anticipated spending for tuition, contractual professional services, software, and travel. The OIG's single-year capital spending was less than budgeted by $19.0 thousand, or 11.9 percent, and multiyear capital projects remained within their project budgets.

2016 Operating Expense Budget

Board of Governors

The 2016 budget for Board operations is $709.5 million, which is $66.0 million, or 10.3 percent, higher than 2015 actual expenses. The operating budget includes amounts to fund the Board's ongoing operations and the triannual Survey of Consumer Finances and to support the six overarching pillars identified in the Board's 2016–19 strategic plan.

For 2016, authorized positions for Board operations total 2,789, an increase of 89 positions, or 3.3 percent, from 2015 actual levels. The positions are aligned with the strategic plan, and as in past years, positions were added in divisions that are focused on monetary policy, financial stability and supervisory mandates under the Dodd-Frank Act, and new regulatory responsibilities. Positions were also allocated to the support divisions to meet demands, such as legal work related to enforcement and litigation cases, technology projects to support the Board's enterprise data strategy, and other information technology work.

Office of Inspector General

The 2016 budget for the OIG operations is $31.8 million, which is $2.9 million, or 9.9 percent, higher than 2015 actual expenses. For 2016, authorized positions for the OIG total 130, an increase of 5 positions, or 4.0 percent, from 2015 actual levels. The additional funding and positions will assist the OIG in implementing the goals, objectives, and activities identified in the OIG's strategic plan, which includes delivering high-quality products and services that promote agency improvement, increasing employee engagement, cultivating leadership, fostering a skilled and

Table 4. Operating expenses of the Board of Governors, by account classification, 2015–16
Millions of dollars, except as noted

Account classification	2015 budget[1]	2015 actual	Variance 2015 actual to 2015 budget		2016 budget	Variance 2016 budget to 2015 actual	
			Amount	Percent		Amount	Percent
Personnel services							
Salaries	362.5	367.3	4.8	1.3	401.0	33.7	9.2
Retirement/Thrift plans[2]	44.8	49.9	5.2	11.5	52.3	2.3	4.6
Employee insurance	31.3	31.1	-0.2	-0.5	39.4	8.3	26.8
Subtotal, personnel services	438.5	448.4	9.8	2.2	492.7	44.3	9.9
Goods and services							
Postage and shipping	0.8	0.5	-0.3	-39.0	0.4	-0.1	-18.0
Travel	14.7	16.1	1.4	9.6	16.4	0.3	1.8
Telecommunications	6.8	7.1	0.4	5.2	7.2	0.1	0.9
Printing and binding	1.8	1.6	-0.2	-13.3	2.2	0.7	41.7
Publications	0.5	0.6	0.1	11.5	0.6	*	1.3
Stationery and supplies	1.5	1.5	*	-0.4	1.4	-0.1	-3.9
Software	15.3	14.3	-1.0	-6.4	16.6	2.3	15.9
Furniture and equipment (F&E)	7.5	10.1	2.6	35.0	6.6	-3.6	-35.2
Rentals	22.9	23.2	0.3	1.4	27.0	3.8	16.4
News, data, and research[3]	15.0	16.6	1.6	10.6	32.9	16.3	98.4
Utilities	2.9	3.0	0.1	3.9	3.3	0.4	12.1
Repairs and alterations building	2.9	1.7	-1.1	-39.7	2.2	0.5	29.2
Repairs and maintenance F&E	5.2	5.1	-0.1	-1.7	5.6	0.5	9.3
Contingency processing center (CPC)[4]	1.3	1.3	-0.1	-4.7	0.0	-1.3	-100.0
Contractual professional services	51.6	49.3	-2.2	-4.3	53.6	4.2	8.6
Interest	*	*	*	-2.2	*	*	-49.1
Tuition/registration/memberships	4.6	4.4	-0.2	-4.1	3.1	-1.3	-28.7
Subsidies and contributions	0.8	0.8	*	-3.8	0.9	0.1	13.1
All other	7.7	4.5	-3.2	-41.4	3.3	-1.2	-26.5
Depreciation	36.9	40.2	3.3	9.0	40.3	0.1	0.3
IT user charge	40.8	43.7	2.9	7.1	44.7	1.0	2.3
IT income	-41.1	-44.2	-3.1	7.7	-45.0	-0.8	1.8
Income	-9.6	-6.3	3.3	-34.6	-6.5	-0.2	3.9
Subtotal, goods and services	190.8	195.2	4.4	2.3	216.9	21.7	11.1
Total, Board operations	**629.3**	**643.5**	**14.2**	**2.3**	**709.5**	**66.0**	**10.3**
Office of Inspector General							
Personnel services	21.1	21.8	0.7	3.5	23.9	2.1	9.6
Goods and services	7.9	7.1	-0.8	-10.3	7.9	0.8	11.1
Total, OIG operations	**29.0**	**28.9**	**-0.1**	**-0.3**	**31.8**	**2.9**	**9.9**

1 The 2015 budget figures do not reflect internal transfers among divisions and accounts during the year.

2 Includes expenses related to Board participants in the Benefit Equalization Retirement Plan and Pension Enhancement Plan.

3 Account name changed from "books and subscriptions" to "news, data, and research." The 2016 budget for data, news, and research is significantly higher due to the Survey of Consumer Finances, which occurs every three years.

4 For the 2016 budget, this account has been combined with rentals.

* Less than $50,000.

knowledgeable workforce, optimizing external stakeholder engagement, and enhancing the capacity and improving the operational effectiveness of the OIG.

Risks in the 2016 Budget

The 2016 operating budget is built on the initial steps taken in 2014 and 2015 to better align budget requests with historic hiring trends and spending patterns, while ensuring the funding of the Board's highest priority needs. Meeting the approved growth targets required all divisions to make difficult choices and prioritize their greatest needs for 2016. During the budget process, many divisions noted the potential impact that reducing their budget requests would have on meeting workload demands. Staff from the Division of Financial Management will work closely

Table 5. Positions authorized by the Board of Governors, by division, office, or special account, 2015–16

Division, office, or special account	2015 budget	2015 actual	Variance 2015 actual to 2015 budget		2016 budget	Variance 2016 budget to 2015 actual	
			Amount	Percent		Amount	Percent
Board Members	118	120	2	1.7	121	1	0.8
Secretary	53	53	0	0.0	53	0	0.0
Research and Statistics	343	344	1	0.3	346	2	0.6
International Finance	150	150	0	0.0	152	2	1.3
Monetary Affairs	157	156	-1	-0.6	167	11	7.1
Financial Stability Policy and Research	42	42	0	0.0	50	8	19.0
Banking Supervision and Regulation	441	456	15	3.4	486	30	6.6
Consumer and Community Affairs	107	110	3	2.8	123	13	11.8
Legal	115	115	0	0.0	123	8	7.0
Chief Operating Officer	59	59	0	0.0	65	6	10.2
Financial Management	69	66	-3	-4.3	66	0	0.0
Reserve Bank Operations and Payment Systems	170	171	1	0.6	176	5	2.9
Information Technology	409	409	0	0.0	412	3	0.7
Management	440	449	9	2.0	449	0	0.0
Total, Board operations[1]	**2,673**	**2,700**	**27**	**1.0**	**2,789**	**89**	**3.3**
Office of Inspector General	125	125	0	0.0	130	5	4.0

[1] Budget represents authorized position count at the beginning of the year, and actual represents authorized position count at year-end.

with all divisions throughout the year to mitigate potential budget overruns by closely monitoring spending.

Several divisions have indicated they will need additional staff in the coming years beyond the positions approved in the 2016 budget. Continued increases in staffing will affect support functions and place additional demands on available office space. Developing a facilities master plan, as outlined in the new strategic plan, will be critical to meeting future space requirements. The Martin Building renovation will continue to be an area of focus, from both a budget and project management perspective, given the size, complexity, and strategic importance of the project. Other budget risks stem from uncertainty about the rising expenses associated with the Board's data needs and the infrastructure necessary to support effective data management.

2016 Capital Budgets

Table 6 summarizes the Board's and the OIG's budgeted and actual capital outlays for 2015 and 2016.

Board of Governors

The Board's 2016 single-year capital budget totals $9.0 million, which represents a decrease of $2.2 million over the 2015 single-cycle capital budget. The budget provides funding for routine equipment purchases and life-cycle replacements, as well as new initiatives for technology and automation projects, such as network infrastructure upgrades.

The Board's multiyear capital budget totals $468.5 million, which includes 2016 expected cash outlays of $60.5 million. The proposed budget is largely a continuation of projects already in progress, including the Martin Building renovation and upgrades to the Eccles Building (the amounts for which are unchanged). New initiatives approved for the 2016 budget cycle include information technology projects supporting the statistics function, enhancing data analytical capabilities for banking regulation and supervision, automation projects supporting the Board's data strategy, and the build-out of additional leased space to accommodate position growth. One of the key projects during the 2012–15 strategic planning period was the relocation of the existing Data Center, which was completed at the end of 2015. In addition, the New York Avenue Building reconfiguration project will be completed in early 2016 and is expected to be within budget.

Office of Inspector General

The OIG's 2016 capital budget totals $0.3 million for multiyear capital outlays, which includes the continued build out of its San Francisco regional office.

Table 6. Capital outlays of the Board of Governors, by capital type, 2015–16
Millions of dollars, except as noted

Item	2015 budget	2015 actual	Variance 2015 actual to 2015 budget		2016 budget	Variance 2016 budget to 2015 actual	
			Amount	Percent		Amount	Percent
Board							
Single-year capital outlays	11.1	8.1	-3.0	-26.9	9.0	0.8	10.2
Multiyear capital outlays	64.3	29.7	-34.6	-53.8	60.5	30.8	103.6
Total capital outlays	**75.4**	**37.9**	**-37.6**	**-49.8**	**69.5**	**31.6**	**83.5**
OIG							
Single-year capital outlays	0.2	0.1	*	-11.9	0	-0.1	-100.0
Multiyear capital outlays	1.0	*	-1.0	-101.3	0.3	0.3	n/a
Total capital outlays	**1.2**	**0.1**	**-1.1**	**-89.3**	**0.3**	**0.2**	**128.1**
Combined total capital outlays	**76.6**	**38.0**	**-38.7**	**-50.4**	**69.8**	**31.8**	**83.7**

Note: The amount reported for the multiyear capital budget represents the expected expenditure for the budget year.
* Less than $50,000.
n/a Not applicable.

Federal Reserve Banks Budgets

Each Reserve Bank establishes major operating goals for the coming year, devises strategies for attaining those goals, estimates required resources, and monitors results. The Reserve Banks' budgets are structured by functional area, with attributable support and overhead charged to each area. In addition to the budget approval process, the Reserve Banks must submit proposals for certain capital expenditures to the Board for further review and approval.

The Reserve Bank budget process is as follows:

- Reserve Bank and Board governance bodies provide budget guidance for major functional areas for the upcoming budget year.
- The Reserve Banks develop budgets that incorporate this guidance, which are reviewed by senior leadership in the Reserve Banks for alignment with Reserve Bank and System priorities.
- The Reserve Banks submit preliminary budget information to the Board for review, including documentation to support the budget request.
- Board staff analyzes the Banks' budgets, both individually and in the context of System initiatives.
- The Board's Committee on Federal Reserve Bank Affairs (BAC) reviews the Bank budgets.
- The Reserve Banks make any requested or needed changes, and the BAC chair submits the revised budgets to Board members for review and final action.
- Throughout the year, Reserve Bank and Board staffs monitor actual performance and compare it with approved budgets and forecasts.

Tables 7, 8, and 9 summarize the Reserve Banks' 2015 budgeted and actual expenses and 2016 budgeted expenses by Reserve Bank, functional area, and account classification.[6] In addition, table 10 shows the Reserve Banks' budgeted and actual employment for 2015 and budgeted employment for 2016.

2015 Budget Performance

Total 2015 operating expenses for the Reserve Banks were $3,875.3 million, which is $93.4 million, or 2.4 percent, less than the approved 2015 budget of $3,968.7 million. The actual average number of personnel (ANP) was less than the 2015 budget, largely because of changes in project plans, turnover, and hiring delays. The Reserve Banks' 2015 capital spending was less than budgeted by $127.1 million, or 28.0 percent, because of changes in timing and scope for numerous initiatives.

The 2015 budget underrun was primarily driven by program changes for several multiyear initiatives,

[6] Additional information about the operating expenses of each of the Reserve Banks can be found in section 11, "Statistical Tables" (see "Table 10. Income and expenses of the Federal Reserve Banks, by Bank").

Table 7. Operating expenses of the Federal Reserve Banks, by District, 2015–16
Millions of dollars, except as noted

District	2015 budget	2015 actual	Variance 2015 actual to 2015 budget		2016 budget	Variance 2016 budget to 2015 actual	
			Amount	Percent		Amount	Percent
Boston	231.6	227.1	-4.5	-1.9	236.5	9.4	4.1
New York	938.3	918.5	-19.8	-2.1	969.2	50.7	5.5
Philadelphia	200.8	196.1	-4.7	-2.3	194.0	-2.1	-1.1
Cleveland	173.5	170.2	-3.3	-1.9	183.9	13.7	8.0
Richmond	359.7	360.2	0.6	0.2	352.3	-7.9	-2.2
Atlanta	323.0	314.0	-9.0	-2.8	335.8	21.8	7.0
Chicago	356.6	354.0	-2.6	-0.7	369.5	15.5	4.4
St. Louis	335.4	321.4	-14.0	-4.2	374.2	52.8	16.4
Minneapolis	214.5	199.4	-15.2	-7.1	214.1	14.7	7.4
Kansas City	255.3	245.0	-10.3	-4.0	277.3	32.4	13.2
Dallas	223.3	219.4	-3.9	-1.7	231.1	11.7	5.3
San Francisco	356.7	350.0	-6.7	-1.9	378.6	28.6	8.2
Total Reserve Bank operating expenses	**3,968.7**	**3,875.3**	**-93.4**	**-2.4**	**4,116.6**	**241.3**	**6.2**

Note: Includes expenses of the FRIT support function and the OEB and reflects all redistributions for support and allocation for overhead. Excludes Reserve Bank capital outlays as well as assessments by the Board of Governors for costs related to currency and the operations of the Board of Governors and the CFPB.

including those related to the TWAI, the fiscal agent consolidation, Fedwire modernization, and the CashForward project.[7] Reserve Bank expenses were also lower as a result of continued efficiencies gained from the check server platform migration, the FedLine application conversion, and the implementation of the cash operations efficiency initiative. In addition, check services experienced greater volume declines than anticipated. Higher-than-expected recoveries for currency cross-shipping also contributed to the underrun.

Total 2015 actual employment for the Reserve Banks, FRIT, and OEB was 18,986 ANP, an underrun of 310 ANP, or 1.6 percent, from 2015 budgeted staffing

[7] In April 2014, the Treasury announced the consolidation of the fiscal agent services provided by the Federal Reserve Banks as part of its effort to increase operational efficiency and effectiveness. The Treasury anticipates long-term savings, once services are transitioned from 10 sites to 4 consolidated sites. Select business lines began transitioning in 2014.

The Fedwire modernization initiative involves the transition of the Fedwire Funds and Fedwire Securities applications from the legacy mainframe environment to a distributed platform.

The CashForward initiative will replace legacy software applications, automate some additional business processes, and employ technologies to meet current and future needs for the cash function. Phase 1 was completed in 2010, and Phase 2 was completed in July 2012. The project's planned completion date is in 2017.

Table 8. Operating expenses of the Federal Reserve Banks, by operating area, 2015–16
Millions of dollars, except as noted

Operating area	2015 budget	2015 actual	Variance 2015 actual to 2015 budget		2016 budget	Variance 2016 budget to 2015 actual	
			Amount	Percent		Amount	Percent
Monetary and economic policy	636.8	631.9	-4.9	-0.8	663.8	31.9	5.0
Services to the U.S. Treasury and other government agencies	579.9	550.5	-29.4	-5.1	605.6	55.1	10.0
Services to financial institutions and the public	1,073.6	1,050.9	-22.7	-2.1	1,112.3	61.4	5.8
Supervision and regulation	1,260.2	1,252.1	-8.0	-0.6	1,311.6	59.5	4.8
Fee-based services to financial institutions	418.2	389.9	-28.4	-6.8	423.3	33.4	8.6
Total Reserve Bank operating expenses[1]	**3,968.7**	**3,875.3**	**-93.4**	**-2.4**	**4,116.6**	**241.3**	**6.2**

[1] Operating expenses exclude pension costs, reimbursements, and operating expenses of the Board of Governors (see table 4).

Table 9. Operating expenses of the Federal Reserve Banks, by account classification, 2015–16
Millions of dollars, except as noted

Account classification	2015 budget	2015 actual	Variance 2015 actual to 2015 budget		2016 budget	Variance 2016 budget to 2015 actual	
			Amount	Percent		Amount	Percent
Personnel[1]	2,938.8	2,912.0	-26.8	-0.9	3,085.8	173.8	6.0
Building	326.6	327.5	0.8	0.3	329.2	1.8	0.5
Software costs	224.8	205.7	-19.1	-8.5	239.6	33.9	16.5
Equipment	195.8	181.8	-14.0	-7.1	187.6	5.7	3.2
Recoveries[2]	-167.8	-182.7	-14.9	8.9	-172.0	10.7	-5.8
Expenses capitalized	-104.6	-97.0	7.6	-7.3	-106.2	-9.2	9.5
All other[3]	555.1	528.0	27.1	-4.9	552.6	24.6	4.7
Total Reserve Bank operating expenses	**3,968.7**	**3,875.3**	**-93.4**	**-2.4**	**4,116.6**	**241.3**	**6.2**

[1] Includes salaries, other personnel expense, and retirement and other employment benefit expenses. It does not include pension expenses related to all the participants in the Retirement Plan for Employees of the Federal Reserve System and the Reserve Bank participants in the Benefit Equalization Plan and the Supplemental Retirement Plan for Select Officers of the Federal Reserve Banks. These expenses are recorded as a separate line item in the financial statements; see "Table 10. Income and expenses of the Federal Reserve Banks, by Bank" in section 11, "Statistical Tables."

[2] Includes tenant rent recoveries.

[3] Includes fees, materials and supplies, travel, communications, and shipping.

levels. The underruns were primarily in Treasury, cash, and support services. In the Treasury function, resource reductions were in response to revised program plans and to accelerated attrition related to the fiscal agent consolidation. The cash resource reductions reflect the implementation of the evolving operations efficiency initiative. Support services and all other areas reflect turnover and hiring delays.

2016 Operating Expense Budget

The 2016 operating budgets of the Reserve Banks total $4,116.6 million, which is $241.3 million, or 6.2 percent, higher than 2015 actual expenses. The increase is primarily to fill staffing needs for supervision, Treasury, and monetary policy and for large development projects that support the cash and the

Table 10. Employment at the Federal Reserve Banks, by District, and at FRIT and OEB, 2015–16

District	2015 budget	2015 actual	Variance 2015 actual to 2015 budget		2016 budget	Variance 2016 budget to 2015 actual	
			Amount	Percent		Amount	Percent
Boston	1,109	1,083	-26	-2.3	1,130	47	4.4
New York	3,294	3,235	-59	-1.8	3,311	76	2.4
Philadelphia	921	895	-26	-2.8	892	-3	-0.3
Cleveland	990	964	-26	-2.6	1,010	46	4.8
Richmond	1,546	1,546	0	0.0	1,475	-71	-4.6
Atlanta	1,594	1,569	-25	-1.6	1,573	4	0.2
Chicago	1,529	1,508	-21	-1.4	1,551	43	2.9
St. Louis	1,246	1,242	-4	-0.3	1,356	115	9.2
Minneapolis	1,114	1,068	-46	-4.2	1,105	37	3.5
Kansas City	1,688	1,603	-85	-5.0	1,722	119	7.4
Dallas	1,267	1,245	-23	-1.8	1,280	35	2.8
San Francisco	1,700	1,695	-5	-0.3	1,695	0	0.0
Total, all Districts	**17,998**	**17,652**	**-346**	**-1.9**	**18,101**	**449**	**2.5**
Federal Reserve Information Technology (FRIT)	1,244	1,281	37	3.0	1,268	-14	-1.1
Office of Employee Benefits (OEB)	53	52	-1	-1.3	55	3	5.5
Total	**19,295**	**18,986**	**-310**	**-1.6**	**19,424**	**438**	**2.3**

priced services functions. The growth in supervision continues to be driven by expanded supervisory responsibilities, primarily for large financial institutions, and national supervision initiatives.

Budgeted expenses for services to the Treasury, which are fully reimbursable, are increasing primarily to support the full implementation of NavyCash ($10.6 million), the TWAI ($7.7 million), the myRA and Retail Securities Program Review initiatives ($6.0 million), the assumption of the Collections Information Repository ($5.3 million), and the expansion of the Financial Information Repository to accommodate the requirements of the Digital Accountability and Transparency Act (DATA) ($3.2 million). Additional growth budgeted in 2016 related to application development and technology modernization for several Treasury initiatives is partially offset by anticipated operational efficiencies.

In the monetary policy and public programs areas, several Reserve Banks are increasing their research, policy, and outreach staff positions. Expenses for open market operations are also projected to increase, largely for automation efforts and the projected increase in allocated costs for law enforcement. Increases in cash expenses are related to the implementation of the CashForward project, as well as the allocated law enforcement and facilities support. Priced services expenses are expected to increase for the ACH platform modernization project and investments in development efforts for Fedwire. Other increases include the System's continued investment in the Strategies for Improving the U.S. Payment System (SIPS) program.[8]

Total 2016 budgeted employment for the Reserve Banks, FRIT, and OEB is 19,424 ANP, an increase of 438 ANP, or 2.3 percent, from 2015 actual employment levels. The increase is primarily driven by the Treasury, supervision, and the support and overhead functions. The Treasury authorized ANP increases related to the Reserve Banks' assumption of services formerly provided by commercial banks and updated requirements for ongoing projects. Supervision ANP is increasing as resources are added for expanded responsibilities and associated new supervisory programs for the largest supervisory portfolios and for national supervision initiatives. The support and overhead functions include additional ANP for information technology, facilities, internal audit, corporate planning, and the SIPS program.

Reserve Bank officer and staff personnel expenses for 2016 total $3,085.8 million, an increase of $173.8 million, or 6.0 percent, from 2015 actual expenses. The increase reflects expenses associated with additional staff and budgeted salary adjustments, including merit increases, equity adjustments, promotions, and funding for variable pay.

The 2016 Reserve Bank budgets include a 3.0 percent merit program for eligible officers, senior professionals, and staff totaling $56.7 million and a variable pay program totaling $184.4 million. Budgeted equity adjustments and promotions total $6.4 million for officers and senior professionals and $22.9 million for staff.

Risks in the 2016 Budget

The most-significant risks in the 2016 budget are related to personnel costs. Changes in benefit assumptions related to the discount rate and updated demographic information would affect the personnel expenses that are reflected in Reserve Bank budgets. Additionally, Banks are concerned about their ability to retain, hire, and replace staff, and some Banks may experience difficulty meeting schedules for hiring staff with specialized skills and experience, particularly in supervision and IT. The primary operating risks in supervision relate to the implementation of key supervisory responsibilities under the Dodd-Frank Act that still require final rulemaking and changing supervisory programs. Increased focus on cybersecurity and application modernization may affect IT spending decisions. The Treasury's fiscal agent consolidation effort will continue to affect projects in 2016 and over a longer-term planning horizon, as project decision requirements are refined.

2016 Capital Budgets

Table 11 shows the Reserve Banks' budgeted and actual capital outlays for 2015 and budgeted capital for 2016.

The 2016 capital budgets for the Reserve Banks, FRIT, and OEB total $403.8 million. The increase in the 2016 capital budget is $76.9 million, or 23.5 percent, more than the 2015 actual levels of $326.9 million, largely reflecting ongoing multiyear building and information technology projects. Initiatives in

[8] The System's payment strategies call for a new U.S. payment infrastructure to support a safer, faster payment capability that promotes efficient commerce, facilitates innovation, reduces fraud, and improves public confidence as well as accelerated development and adoption of enhanced payment security standards.

Table 11. Capital outlays of the Federal Reserve Banks, by District, and of FRIT and OEB, 2015–16
Millions of dollars, except as noted

District	2015 budget	2015 actual	Variance 2015 actual to 2015 budget		2016 budget	Variance 2016 budget to 2015 actual	
			Amount	Percent		Amount	Percent
Boston	28.5	23.7	-4.8	-16.8	21.6	-2.1	-9.0
New York	115.9	72.5	-43.4	-37.5	81.1	8.7	12.0
Philadelphia	20.5	13.3	-7.2	-35.0	22.2	8.9	66.8
Cleveland	17.0	9.2	-7.8	-45.6	18.1	8.9	96.3
Richmond	15.2	10.1	-5.1	-33.3	15.6	5.5	54.1
Atlanta	16.1	8.3	-7.9	-48.8	33.8	25.6	309.0
Chicago	26.5	27.0	0.5	1.7	26.1	-0.9	-3.4
St. Louis	14.3	15.0	0.7	4.9	10.2	-4.8	-32.0
Minneapolis	4.7	2.2	-2.4	-52.1	4.4	2.1	95.5
Kansas City	25.8	21.4	-4.4	-17.0	29.7	8.3	38.7
Dallas	17.3	11.2	-6.1	-35.4	18.1	6.8	61.1
San Francisco	60.5	51.5	-9.0	-14.8	57.5	6.0	11.6
Total, all Districts	**362.4**	**265.5**	**-96.8**	**-26.7**	**338.4**	**72.9**	**27.5**
Federal Reserve Information Technology (FRIT)	91.1	60.5	-30.6	-33.6	65.4	4.9	8.0
Office of Employee Benefits (OEB)	0.6	0.9	0.3	55.7	*	-0.9	-99.4
Total	**454.0**	**326.9**	**-127.1**	**-28.0**	**403.8**	**76.9**	**23.5**

* Less than $50,000.

the 2016 capital budget support the ACH modernization efforts, security enhancements, and application upgrades and releases primarily for cash, supervision, Treasury and monetary policy. The BAC chair designated projects with an aggregate cost of $125.3 million in 2016 as strategic or sensitive, requiring additional review and approval by the Board's director of the Division of Reserve Bank Operations and Payments Systems.[9]

Capital Expenditures Designated as Strategic or Sensitive

The expenditures designated as strategic or sensitive by the chair of the BAC include projects to migrate major applications off the mainframe, with budgeted 2016 expenditures of $18.4 million and total multiyear budgeted expenditures of $32.5 million for 2016 and future years.[10] Additionally, cash automation initiatives include $23.6 million for the CashForward project. Other expenditures include large-scale building projects to optimize office space, renovate conference center and cafeteria space, and upgrade mechanical and electrical infrastructure.

Other Capital Expenditures

Significant capital expenditures (expenditures exceeding $1 million) that are not designated strategic or sensitive include total multiyear budgeted expenditures of $305.0 million for 2016 and future years. The single-year component for budgeted 2016 expenditures is $166.8 million. Expenditures in this category include investments in analytical, technological, and operational tools for monetary policy, support for supervisory responsibilities, and IT support for Treasury initiatives. Building expenditures include office space renovations, security enhancements, and elevator upgrades.

Capital initiatives that are individually of lesser amounts (less than $1 million) are budgeted at

[9] Board policy states that Reserve Bank management may commit funding for capital commitments included in the Reserve Banks' capital budgets approved by the Board, unless the acquisition is designated as strategic or sensitive by the BAC chair. Generally, strategic capital initiatives include District expenditures that substantially affect or influence future System direction, significant research and development efforts or building projects, and certain large-dollar initiatives. Sensitive acquisitions may include commitments that may be inconsistent with System direction or vary from previously negotiated purchasing agreements, or local initiatives that may duplicate national efforts.

[10] The Reserve Bank migration strategy involves moving a majority of applications from the mainframe to alternate processing environments. Budgeted projects for 2016 include the migration of the statistics and reserves applications and the ACH processing platform.

$111.8 million for 2016 and include building expenditures, equipment and furniture replacements, and scheduled software and equipment upgrades.

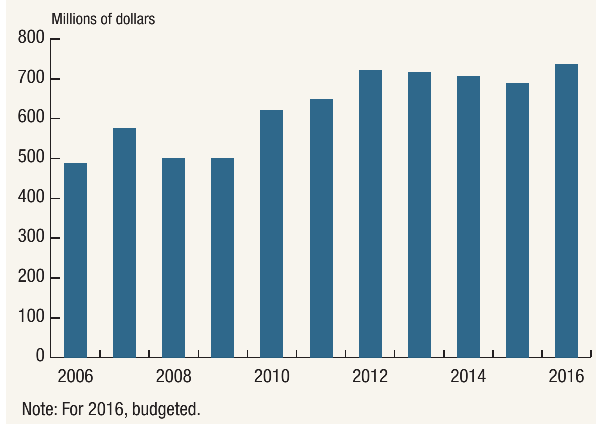
Currency Budget

Board staff monitors payments of currency to and receipts of currency from circulation and the number of unfit notes destroyed at the Reserve Banks. Staff estimates the number of notes the Board will order from the Bureau of Engraving and Printing (BEP) to meet demand based on monthly monitoring, forecasts of growth rates for payments of currency to circulation and receipts of currency from circulation, operational factors, and other policy considerations. The Board reimburses the BEP for all costs related to the production of currency.[11] Historically, more than 90 percent of the notes that the Board orders each year replace unfit currency that Reserve Banks receive from circulation.

The annual currency budget process is as follows:

- Each August, based on Board staff's assessment of currency demand, the director of the Board's Division of Reserve Bank Operations and Payments Systems submits a fiscal year (FY) print order for currency to the director of the BEP.
- Each December, Board staff estimates expenses for the calendar-year currency budget, including printing expenses (based on estimated production costs provided by the BEP); certain other BEP costs; and expenses for the currency education program, currency transportation, and counterfeit-deterrence research.[12]
- The BAC reviews the proposed currency budget.
- The BAC chair submits the proposed currency budget to the Board for final action.

Figure 5. Federal Reserve costs for currency, 2006–16



Note: For 2016, budgeted.

2015 Budget Performance

The Board's total 2015 actual expenses for new currency were $689.2 million, which represents an underrun of $28.7 million, or 4.0 percent, from the 2015 budget. About half of the budget underrun is attributable to the BEP purchasing fewer currency readers for use by blind and visually-impaired individuals than budgeted.[13] The remainder of the budget underrun is primarily attributable to lower-than-projected costs for transporting new and fit notes, as well as lower printing costs resulting from lower-than-projected deliveries from the BEP of Federal Reserve notes.[14]

2016 Budget

The 2016 new currency budget of $737.4 million is $48.2 million, or 7.0 percent, higher than 2015 actual expenditures (figure 5). Printing costs for Federal Reserve notes constitute about 90 percent of the currency budget. Expenses for currency transportation, the currency quality assurance (CQA) and counterfeit-deterrence programs, the new BEP facility, the currency reader program, other costs to reim-

[11] The BEP does not receive federal appropriations; all operations of the BEP are financed by a revolving fund that is reimbursed through product sales, virtually all of which are sales of Federal Reserve notes to the Board to fulfill its annual print order. Customer billings are the BEP's only means of recovering costs of operations and generating funds necessary for capital investment. Section 16 of the Federal Reserve Act requires all costs incurred for the issuing of notes to be paid for by the Board and included in its assessments to Reserve Banks.

[12] Other BEP expenses include costs to reimburse the BEP for expenses incurred by its Destruction Standards and Compliance Division of the Office of Compliance and Mutilated Currency Division of the Office of Financial Management and for work expected in 2016 toward a new production facility.

[13] The BEP implemented the currency reader program in 2014 to comply with a court order that required the Treasury Department to provide meaningful access to individuals who are blind or visually impaired in denominating U.S. currency. The 2015 budget reflected the BEP's estimate that it would procure and distribute 250,000 readers in 2015; however, the BEP only procured and distributed about 27,000 readers. The difference is partly because the BEP conducted less outreach than it planned to promote the availability of the reader. Also, some potential users are using the BEP's smartphone currency reader application instead of ordering a currency reader.

[14] The Board provides the BEP with a fiscal year print order, which it fulfilled; however, it delivered fewer notes in calendar-year 2015 than Board staff estimated.

Table 12. Federal Reserve currency budget, 2015 and 2016
Thousands of dollars, except as noted

Item	2015 budget	2015 actual	Variance 2015 actual to 2015 budget		2016 budget	Variance 2016 budget to 2015 actual	
			Amount	Percent		Amount	Percent
BEP-related expenses							
Printing Federal Reserve notes	642,527	637,346	-5,180	-0.8	670,422	33,075	5.2
Currency reader	17,120	2,680	-14,440	-84.3	8,478	5,798	216.4
Other	3,674	3,922	248	6.8	4,232	310	7.9
New BEP facility	n/a	n/a	n/a	n/a	5,000	5,000	0.0
Board expenses							
Currency transportation	29,235	23,357	-5,878	-20.1	26,400	3,043	13.0
Currency quality assurance and counterfeit deterrence	20,993	19,564	-1,429	-6.8	19,445	-119	-0.6
Currency education program	4,390	2,329	-2,061	-47.0	3,400	1,071	46.0
Total cost of new currency	**717,939**	**689,199**	**-28,740**	**-4.0**	**737,377**	**48,179**	**7.0**

BEP Bureau of Engraving and Printing.
n/a Not applicable.

burse the BEP, and the currency education program (CEP) make up the remaining 10.0 percent (table 12).

Printing of Federal Reserve Notes

The currency budget includes $670.4 million in printing costs for 2016, which represents an increase of 4.3 percent from the 2015 budget and 5.2 percent from 2015 actual expenditures. The increase is primarily attributable to the BEP's inclusion of additional funding for 2016 research and development efforts associated with security and tactile feature development for the next-design family of notes.

Currency Reader Program

The 2016 currency reader budget is $8.5 million, which is approximately $5.8 million higher than 2015 actual expenditures and $8.6 million lower than the 2015 budget. The budget includes $6.5 million to purchase and distribute more than 130,000 currency readers to qualified blind or visually-impaired individuals at no cost to the user. The BEP expects to distribute more readers in 2016 than in 2015 because it plans to promote the reader program more. In addition, the budget includes $1.5 million to reimburse the Library of Congress for administering the program through the existing infrastructure of its book reader program, which is managed by the National Library Service.

Other Reimbursements to the Bureau of Engraving and Printing

The 2016 budget includes $4.2 million to reimburse the BEP for expenses incurred by its Destruction Standards and Compliance Division of the Office of Compliance (OC) and Mutilated Currency Division (MCD) of the Office of Financial Management. The OC develops standards for cancellation and destruction of unfit currency and for note accountability at the Reserve Banks, and reviews Reserve Banks' cash operations for compliance with its standards. As a public service, the MCD also processes claims for the redemption of damaged or mutilated currency.

The BEP's New Facility

The 2016 budget includes $5.0 million for estimated contractual expenses related to initial work for the BEP's new facility. In 2015, the BEP received approval from the Treasury to pursue a new building in the metropolitan Washington, D.C. area. The General Services Administration has considered and evaluated several sites, and in 2016 the BEP expects to select a site and begin design work.

Currency Transportation

The 2016 currency transportation budget is $26.4 million, which is nearly $3.0 million, or 13.0 percent, higher than 2015 expenditures. The budget includes the cost of shipping new currency from the BEP to Reserve Banks, of intra-System shipments of fit and unprocessed currency, and of returning currency pallets from the Reserve Banks to the BEP. More notes are projected to be shipped in 2016 than in 2015 because the 2016 budget includes nearly 11.0 percent more notes than the BEP delivered during 2015.

Currency Quality Assurance

The 2016 budget for the CQA program is $9.2 million. The budget will allow the CQA consultants to continue facilitating the implementation of the new quality system at the BEP; support the research, technology, and product development required for the next-design family of Federal Reserve notes; and continue providing temporary resources to the BEP to sustain critical programs that have been implemented for the quality system.

Counterfeit Deterrence

The 2016 budget for counterfeit-deterrence research is $10.2 million. The budget includes about $5.1 million for membership in the Central Bank Counterfeit Deterrence Group (CBCDG). The CBCDG operates under the auspices of the G-10 central bank governors to combat digital counterfeiting and includes 34 central banks. Additionally, the budget includes about $5.0 million to conduct security feature development activities, contract with national laboratories to perform adversarial analysis on security features under development at the BEP, conduct additional research on potential security features for the next-design family of notes, and conduct a perception study to assess how consumers use security features, with the study results used to inform the effective placement and design of security features in the next-design family of notes.

Currency Education Program

The 2016 CEP budget is $3.4 million. The CEP program is designed to protect and maintain confidence in U.S. currency worldwide by providing information on all circulating designs of Federal Reserve notes to the global public and key stakeholder groups. The major expense drivers for the 2016 budget are outreach to domestic and international businesses and retailers and developing and maintaining the uscurrency.gov educational website.

14 Federal Reserve System Organization

Congress designed the Federal Reserve System to give it a broad perspective on the economy and on economic activity in all parts of the nation. As such, the System is composed of a central, governmental agency—the Board of Governors—in Washington, D.C., and 12 regional Federal Reserve Banks. This section lists key officials across the System, including the Board of Governors, its officers, Federal Open Market Committee members, several System councils, and Federal Reserve Bank and Branch directors and officers.

BOARD OF GOVERNORS

Members

The Board of Governors of the Federal Reserve System is composed of seven members, who are nominated by the President and confirmed by the Senate. The Chair and the Vice Chairman of the Board are also named by the President from among the members and are confirmed by the Senate. This section lists Board members who served in 2015. For a full listing of Board members from 1914 through the present, visit www.federalreserve.gov/aboutthefed/bios/board/boardmembership.htm.

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Chair

Stanley Fischer
Vice Chairman

Daniel K. Tarullo

Jerome H. Powell

Lael Brainard

Divisions and Officers

Fifteen divisions support and carry out the mission of the Board of Governors, which is based in Washington, D.C.

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Director

Linda L. Robertson
Assistant to the Board

Lucretia M. Boyer
Assistant to the Board

David W. Skidmore
Assistant to the Board

Jennifer Gallagher
Special Assistant to the Board for Congressional Liaison

William B. English
Senior Special Adviser to the Board

Trevor A. Reeve
Special Adviser to the Chair

Legal Division

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General Counsel

Richard M. Ashton
Deputy General Counsel

Kathleen M. O'Day
Deputy General Counsel

Stephanie Martin
Associate General Counsel

Laurie S. Schaffer
Associate General Counsel

Katherine H. Wheatley
Associate General Counsel

Jean C. Anderson
Assistant General Counsel

Patrick M. Bryan
Assistant General Counsel

Alison M. Thro
Assistant General Counsel

Cary K. Williams
Assistant General Counsel

Office of the Secretary

Robert deV. Frierson
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Margaret M. Shanks
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Beth Anne Wilson
Senior Associate Director

David H. Bowman
Associate Director

Mark S. Carey
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Charles P. Thomas
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Shaghil Ahmed
Deputy Assistant Director

Joseph W. Gruber
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Carol C. Bertaut
Assistant Director

James A. Dahl
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Paul R. Wood
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Constantijn A. Claessens
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Sally M. Davies
Senior Adviser

Brian M. Doyle
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Jane Haltmaier
Senior Adviser

John H. Rogers
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Office of Financial Stability Policy and Research

J. Nellie Liang
Director

Andreas W. Lehnert
Deputy Director

Michael T. Kiley
Senior Associate Director

Rochelle M. Edge
Deputy Associate Director

Luca Guerrieri
Assistant Director

Jennifer E. Roush
Assistant Director

John W. Schindler
Assistant Director

Skander J. Van Den Heuvel
Assistant Director

Division of Monetary Affairs

Heinrich T. Laubach
Director

James A. Clouse
Deputy Director

Brian F. Madigan
Deputy Director

Stephen A. Meyer
Deputy Director

William R. Nelson
Deputy Director

Fabio M. Natalucci
Associate Director

Gretchen C. Weinbach
Associate Director

Egon Zakrajsek
Associate Director

William F. Bassett
Deputy Associate Director

Margaret G. DeBoer
Deputy Associate Director

Jane E. Ihrig
Deputy Associate Director

J. David Lopez-Salido
Deputy Associate Director

Min Wei
Deputy Associate Director

Francisco B. Covas
Assistant Director

Christopher J. Gust
Assistant Director

Don H. Kim
Assistant Director

Elizabeth C. Klee
Assistant Director

Matthew M. Luecke
Assistant Director

Ellen E. Meade
Senior Adviser

Joyce K. Zickler
Senior Adviser

Burcu Duygan-Bump
Adviser

Mary T. Hoffman
Adviser

Robert J. Tetlow
Adviser

Division of Research and Statistics

David W. Wilcox
Director

Daniel M. Covitz
Deputy Director

William L. Wascher III
Deputy Director

Eric M. Engen
Senior Associate Director

Diana Hancock
Senior Associate Director

David E. Lebow
Senior Associate Director

Michael G. Palumbo
Senior Associate Director

Jeffrey C. Campione
Senior Associate Director

Joshua H. Gallin
Associate Director

Elizabeth K. Kiser
Deputy Associate Director

John J. Stevens
Deputy Associate Director

Stacey Tevlin
Deputy Associate Director

Stephanie R. Aaronson
Assistant Director

Glenn R. Follette
Assistant Director

Erik A. Heitfield
Assistant Director

Timothy A. Mullen
Assistant Director

John M. Roberts
Assistant Director

John E. Sabelhaus
Assistant Director

Steven A. Sharpe
Assistant Director

Shane M. Sherlund
Assistant Director

Paul A. Smith
Assistant Director

Kristin M. Vajs
Assistant Director

Wayne Passmore
Senior Adviser

Robin A. Prager
Senior Adviser

Jeremy Rudd
Senior Adviser

Eric C. Engstrom
Adviser

John A. Figura
Adviser

Arthur B. Kennickell
Adviser

Patrick C. McCabe
Adviser

Karen M. Pence
Adviser

Division of Banking Supervision and Regulation

Michael S. Gibson
Director

Maryann F. Hunter
Deputy Director

Mark E. Van Der Weide
Deputy Director

Barbara J. Bouchard
Senior Associate Director

Timothy P. Clark
Senior Associate Director

Jack P. Jennings II
Senior Associate Director

Arthur W. Lindo
Senior Associate Director

Peter J. Purcell
Senior Associate Director

Todd A. Vermilyea
Senior Associate Director

Kevin M. Bertsch
Associate Director

Sean D. Campbell
Associate Director

Nida Davis
Associate Director

Christopher Finger
Associate Director

Steven P. Merriett
Associate Director

Ann Misback
Associate Director

Richard A. Naylor II
Associate Director

Lisa H. Ryu
Associate Director

Michael J. Sexton
Associate Director

Michael D. Solomon
Associate Director

Thomas R. Sullivan
Associate Director

Mary L. Aiken
Deputy Associate Director

Jeffery W. Gunther
Deputy Associate Director

Anna L. Hewko
Deputy Associate Director

Michael J. Hsu
Deputy Associate Director

Nancy J. Perkins
Deputy Associate Director

Richard C. Watkins
Deputy Associate Director

Robert T. Ashman
Assistant Director

Gwendolyn A. Collins
Assistant Director

Constance Horsley
Assistant Director

Ryan P. Lordos
Assistant Director

David K. Lynch
Assistant Director

Thomas K. Odegard
Assistant Director

Catherine A. Piche
Assistant Director

Laurie F. Priest
Assistant Director

Suzanne L. Williams
Assistant Director

Norah M. Barger
Senior Adviser

David S. Jones
Senior Adviser

John Beebe
Adviser

Du Fang
Adviser

Keith A. Ligon
Adviser

Molly E. Mahar
Adviser

William F. Treacy
Adviser

Sarkis D. Yoghourtdjian
Adviser

Division of Consumer and Community Affairs

Eric S. Belsky
Director

Anna Alvarez Boyd
Senior Associate Director

Suzanne G. Killian
Senior Associate Director

Allen J. Fishbein
Associate Director

James A. Michaels
Associate Director

Joseph A. Firschein
Deputy Associate Director

David E. Buchholz
Assistant Director

Carol A. Evans
Assistant Director

Phyllis L. Harwell
Assistant Director

Marisa A. Reid
Assistant Director

Division of Reserve Bank Operations and Payment Systems

Louise L. Roseman
Director

Matthew J. Eichner
Deputy Director

Jeffrey C. Marquardt
Deputy Director

David Sidari
Deputy Director

Susan V. Foley
Senior Associate Director

Gregory L. Evans
Senior Associate Director

Paul W. Bettge
Associate Director

Bajinder N. Paul
Associate Director

Michael J. Lambert
Associate Director

Jennifer A. Lucier
Deputy Associate Director

Lawrence E. Mize
Deputy Associate Director

Stuart E. Sperry
Deputy Associate Director

Jennifer K. Chang
Assistant Director

Shaun E. Ferrari
Assistant Director

Timothy W. Maas
Assistant Director

David C. Mills
Assistant Director

Lorelei W. Pagano
Assistant Director

Jeffrey D. Walker
Assistant Director

Lisa K. Hoskins
Senior Adviser

Marta E. Chaffee
Adviser

Office of the Chief Operating Officer

Donald V. Hammond
Chief Operating Officer

Michael Kraemer
Deputy Chief Data Officer

Sheila Clark
Diversity and Inclusion Programs Director

Jeff Monica
Assistant Director

Todd A. Glissman
Senior Adviser

Division of Financial Management

William L. Mitchell
Director and Chief Financial Officer

Stephen J. Bernard
Deputy Director

Patrick J. McClanahan
Deputy Director and Controller

Christine M. Fields
Associate Director

Jeffrey R. Peirce
Deputy Associate Director

Karen L. Vassallo
Deputy Associate Director

Christopher J. Suma
Assistant Director

Management Division

Michell C. Clark
Director

David J. Capp
Deputy Director

Marie S. Savoy
Senior Associate Director

Tara Tinsley-Pelitere
Associate Director

Tameika L. Pope
Associate Director

Keith F. Bates
Assistant Director

Patricia Ann Buckingham
Assistant Director

Curtis B. Eldridge
Assistant Director and Chief

Jeffrey A. Martin
Assistant Director

Reginald V. Roach
Assistant Director

Carol A. Sanders
Assistant Director

Theresa A. Trimble
Assistant Director

Division of Information Technology

Sharon L. Mowry
Director

Wayne A. Edmondson
Deputy Director

Lisa M. Bell
Senior Associate Director

Raymond Romero
Senior Associate Director

Kofi A. Sapong
Senior Associate Director

Glenn S. Eskow
Associate Director

Kassandra Arana Quimby
Associate Director

Sheryl Lynn Warren
Associate Director

Rajasekhar R. Yelisetty
Associate Director

William Dennison
Deputy Associate Director

Marietta Murphy
Deputy Associate Director

Theresa C. Palya
Deputy Associate Director

Charles B. Young II
Deputy Associate Director

Can Xuan Nguyen
Assistant Director

Deborah Prespare
Assistant Director

Jonathan F. Shrier
Assistant Director

Eric C. Turner
Assistant Director

Virginia M. Wall
Assistant Director

Edgar Wang
Assistant Director

Ivan K. Wun
Assistant Director

Tillena G. Clark
Adviser

Office of Inspector General

Mark Bialek
Inspector General

James A. Ogden
Deputy Inspector General

Jacqueline M. Becker
Associate Inspector General

Alberto Rivera-Fournier
Associate Inspector General

Melissa M. Heist
Associate Inspector General

Lawrence K. Valett
Associate Inspector General

Peter J. Sheridan
Assistant Inspector General

Federal Open Market Committee

The Federal Open Market Committee is made up of the seven members of the Board of Governors; the president of the Federal Reserve Bank of New York; and four of the remaining eleven Federal Reserve Bank presidents, who serve one-year terms on a rotating basis. During 2015, the Federal Open Market Committee held eight regularly scheduled meetings and one unscheduled meeting (see section 9, "Minutes of Federal Open Market Committee Meetings").

Members

Janet L. Yellen
Chair, Board of Governors

William C. Dudley
Vice Chairman, President, Federal Reserve Bank of New York

Lael Brainard
Member, Board of Governors

Charles L. Evans
President, Federal Reserve Bank of Chicago

Stanley Fischer
Member, Board of Governors

Jeffrey M. Lacker
President, Federal Reserve Bank of Richmond

Dennis P. Lockhart
President, Federal Reserve Bank of Atlanta

Jerome H. Powell
Member, Board of Governors

Daniel K. Tarullo
Member, Board of Governors

John C. Williams
President, Federal Reserve Bank of Boston

Alternate Members

James Bullard
President, Federal Reserve Bank of St. Louis

Christine M. Cumming
First Vice President, Federal Reserve Bank of New York (*resigned April 29, 2015*)

Esther L. George
President, Federal Reserve Bank of Kansas City

Loretta J. Mester
President, Federal Reserve Bank of Cleveland

Eric Rosengren
President, Federal Reserve Bank of Boston

Michael Strine
First Vice President, Federal Reserve Bank of New York (*as of July 28, 2015*)

Officers

Brian F. Madigan
Secretary

Matthew M. Luecke
Deputy Secretary

David W. Skidmore
Assistant Secretary
(*as of February 2, 2015*)

Michelle A. Smith
Assistant Secretary

Scott G. Alvarez
General Counsel

Thomas C. Baxter
Deputy General Counsel

Richard M. Ashton
Assistant General Counsel

Steven B. Kamin
Economist

Heinrich T. Laubach
Economist

David W. Wilcox
Economist

David Altig
Associate Economist

Thomas A. Connors
Associate Economist

Eric M. Engen
Associate Economist

Michael P. Leahy
Associate Economist

Jonathan P. McCarthy
Associate Economist

William R. Nelson
Associate Economist

Glenn D. Rudebusch
Associate Economist

Daniel G. Sullivan
Associate Economist

John A. Weinberg
Associate Economist

William Wascher
Associate Economist

Simon Potter
Manager, System Open Market Account

Lorie K. Logan
Deputy Manager, System Open Market Account

Board of Governors Advisory Councils

The Federal Reserve Board uses advisory committees in carrying out its varied responsibilities. To learn more, visit www.federalreserve.gov/aboutthefed/advisorydefault.htm.

Federal Advisory Council

The Federal Advisory Council—a statutory body established under the Federal Reserve Act—consults with and advises the Board of Governors on all matters within the Board's jurisdiction. It is composed of one representative from each Federal Reserve District, chosen by the Reserve Bank in that District. Two members of the council serve as its president and vice president. The Federal Reserve Act requires the council to meet in Washington, D.C., at least four times a year. In 2015, the council met on February 5–6, May 7–8, September 3–4, and December 3–4. The council met with the Board on February 6, May 8, September 4, and December 4, 2015.

Members

District 1

Richard E. Holbrook
Chairman and Chief Executive Officer, Eastern Bank Corporation, Boston, MA

District 2

James P. Gorman
Chairman and Chief Executive Officer, Morgan Stanley, New York, NY

District 3

Scott V. Fainor
President and Chief Executive Officer, National Penn Bancshares, Inc., Allentown, PA

District 4

Paul G. Greig
Chairman, President, and Chief Executive Officer, FirstMerit Corporation, Akron, OH

District 5

Kelly S. King
Chairman and Chief Executive Officer, BB&T Corporation,Winston-Salem, NC

District 6

O.B. Grayson Hall Jr.
Chairman, President, and Chief Executive Officer, Regions Financial Corporation, Birmingham, AL

District 7

Frederick H. Waddell
Chairman and Chief Executive Officer, Northern Trust Corporation and The Northern Trust Company, Chicago, IL

District 8

Ronald J. Kruszewski
Chairman, President, and Chief Executive Officer, Stifel Financial Corp., St. Louis, MO

District 9

Patrick J. Donovan
President and Chief Executive Officer, Bremer Financial Corporation, St. Paul, MN

District 10

Jonathan M. Kemper
Chairman and Chief Executive Officer, Commerce Bank, N.A. (Kansas City), Kansas City, MO

District 11

Ralph W. Babb Jr.
Chairman and Chief Executive Officer, Comerica Inc. and Comerica Bank, Dallas, TX

District 12

John G. Stumpf
Chairman, President, and CEO, Wells Fargo & Company, San Francisco, CA

Officers

James P. Gorman
President

Kelly S. King
Vice President

Herb Taylor
Secretary

Community Depository Institutions Advisory Council

The Community Depository Institutions Advisory Council advises the Board of Governors on the economy, lending conditions, and other issues of interest to community depository institutions. Members are selected from among representatives of banks, thrift institutions, and credit unions who are serving on local advisory councils at the 12 Federal Reserve Banks. One member of each of the Reserve Bank councils serves on the Community Depository Institutions Advisory Council. Two members of the council serve as its president and vice president. The council usually meets with the Board twice a year in Washington, D.C. In 2015, the council met on April 10 and November 6.

Members

District 1
Chandler J. Howard
President and Chief Executive Officer, Liberty Bank, Middletown, CT

District 2
Michael J. Castellana
President and Chief Executive Officer, SEFCU, Albany, NY

District 3
Thomas M. Petro
President and Chief Executive Officer, Fox Chase Bank, Hatboro, PA

District 4
Eddie L. Steiner
President and Chief Executive Officer, The Commercial and Savings Bank of Millersburg, Ohio, Millersburg, OH

District 5
Jan Roche
President and Chief Executive Officer, State Department FCU, Alexandria, VA

District 6
Douglas L. Williams
President and Chief Executive Officer, Atlantic Capital Bank, Atlanta, GA

District 7
Jeffrey Plagge
President and Chief Executive Officer, Northwest Financial Corp., Arnolds Park, IA

District 8
Glenn D. Barks
President and Chief Executive Officer, First Community Credit Union, Chesterfield, MO

District 9
Brian L. Johnson
Chief Executive Officer, Choice Financial Group, Grand Forks, ND

District 10
John B. Dicus
Chairman, President, and Chief Executive Officer, Capitol Federal Savings Bank, Topeka, KS

District 11
S. Boyce Brown
Chairman, President and Chief Executive Officer, Extraco Corporation, Waco, TX

District 12
Janet Garufis
President and Chief Executive Officer, Montecito Bank & Trust, Santa Barbara, CA

Officers

John B. Dicus
President

Michael J. Castellana
Vice President

Community Advisory Council

The Community Advisory Council was formed in 2015 to advise the Board of Governors on the economic circumstances and financial services needs of consumers and communities, with a particular focus on the concerns of low- and moderate-income populations. The 15 members of the council are selected from submissions received through a public process, and comprise a diverse group of experts and representatives of consumer and community development organizations and interests, including affordable housing, community and economic development, small business, and asset and wealth building. One member of the council serves as its chair. The council met with the Board on November 2015, and is expected to meet with the Board twice each year in future years.

Members

Roberto Barragan
President and Chief Executive Officer, VEDC, Van Nuys, CA

Angela Glover Blackwell
Founder and Chief Executive Officer, PolicyLink, Oakland, CA

Patrick Dujakovich
President, Greater Kansas City AFL-CIO, Kansas City, MO

Benjamin Dulchin
Executive Director, Association for Neighborhood & Housing Development, New York, NY

Brian Fogle
President and Chief Executive Officer, Community Foundation of the Ozarks, Springfield, MO

Ben Mangan
Executive Director and Lecturer, Haas School of Business, U.C. Berkeley, Center for Social Sector Leadership, Berkeley, CA

Rodrick Miller
President and Chief Executive Officer, Detroit Economic Growth Corporation, Detroit, MI

Noel Poyo
Executive Director, National Association for Latino Community Asset Builders, San Antonio, TX

Michael Rubinger
President and Chief Executive Officer, Local Initiatives Support Corporation (LISC), New York, NY

Arden Shank
President and Chief Executive Officer, Neighborhood Housing Services of South Florida, Miami, FL

Adrienne Smith
President and Chief Executive Officer, New Mexico Direct Caregivers Coalition, Placitas, NM

Sue Taoka
Executive Vice President, Craft3, Seattle, WA

Mary Tingerthal
Commissioner, Minnesota Housing Finance Agency, St. Paul, MN

Raul Vazquez
Chief Executive Officer, Oportun, Redwood City, CA

Catherine Wilson
Professor, University of Nebraska–Lincoln College of Law, Lincoln, NE

Officer

Michael Rubinger
Chair

Model Validation Council

The Model Validation Council was established in 2012 by the Board of Governors to provide expert and independent advice on its process to rigorously assess the models used in stress tests of banking institutions. The Dodd-Frank Wall Street Reform and Consumer Protection Act required the Federal Reserve to conduct annual stress tests of large bank holding companies and systemically important, nonbank financial institutions supervised by the Board. The Model Validation Council provides input on the Board's efforts to assess the effectiveness of the models used in the stress tests. The council is intended to improve the quality of the Federal Reserve's model assessment program and to strengthen the confidence in the integrity and independence of the program.

Members

Allan Timmermann, *Chair*
Professor, University of California at San Diego

Peter Christoffersen
Professor, University of Toronto

Manju Puri
Professor, Duke University

Philip Strahan
Professor, Boston College

Nancy Wallace
Professor, University of California at Berkeley

Federal Reserve Banks and Branches

To carry out the day-to-day operations of the Federal Reserve System, the nation has been divided into 12 Federal Reserve Districts, each with a Reserve Bank. The majority of Reserve Banks also have at least one Branch.

Reserve Bank and Branch Directors

As required by the Federal Reserve Act, each Federal Reserve Bank is supervised by a nine-member board with three different classes of three directors each: Class A directors, who are nominated and elected by the member banks in that District to represent the stockholding banks; Class B directors, who are nominated and elected by the member banks to represent the public; and Class C directors, who are appointed by the Board of Governors to represent the public. Class B and Class C directors are selected with due, but not exclusive, consideration to the interests of agriculture, commerce, industry, services, labor, and consumers. Each Federal Reserve Bank Branch also has a board with either five or seven directors. A majority of the directors on each Branch board are appointed by the Federal Reserve Bank, with the remaining directors appointed by the Board of Governors.

For more information on Reserve Bank and Branch directors, see www.federalreserve.gov/aboutthefed/directors/about.htm.

Reserve Bank and Branch directors are listed below. For each director, the class of directorship, the director's principal place of business, and the expiration date of the director's current term are shown.

District 1–Boston

Class A

Peter L. Judkins, 2015
President and Chief Executive Officer, Franklin Savings Bank, Farmington, ME

Joseph L. Hooley, 2016
Chairman and Chief Executive Officer, State Street Corporation, Boston, MA

Michael E. Tucker, 2017
President and Chief Executive Officer, Greenfield Co-operative Bank, Greenfield, MA

Class B

Roger S. Berkowitz, 2015
President and Chief Executive Officer, Legal Sea Foods, LLC, Boston, MA

Laura J. Sen, 2016
President and Chief Executive Officer, BJ's Wholesale Club, Inc., Westborough, MA

Gary L. Gottlieb, MD, 2017
President and Chief Executive Officer, Partners In Health, Boston, MA

Class C

Catherine D'Amato, 2015
President and Chief Executive Officer, The Greater Boston Food Bank, Boston, MA

John F. Fish, 2016
Chairman and Chief Executive Officer, Suffolk Construction Company, Inc., Boston, MA

William D. Nordhaus, 2017
Sterling Professor of Economics, Yale University, New Haven, CT

District 2–New York

Class A

Richard L. Carrión, 2015
Chairman and Chief Executive Officer, Popular, Inc., San Juan, PR

Gerald H. Lipkin, 2016
Chairman, President, and Chief Executive Officer, Valley National Bank, Wayne, NJ

Paul P. Mello, 2017
President and Chief Executive Officer, Solvay Bank, Solvay, NY

Class B

Glenn H. Hutchins, 2015
Co-Founder, Silver Lake, New York, NY

David M. Cote, 2016
Chairman and Chief Executive Officer, Honeywell International Inc., Morristown, NJ

Terry J. Lundgren, 2017
Chairman and Chief Executive Officer, Macy's, Inc., New York, NY

Class C

Sara Horowitz, 2015
Executive Director, Freelancers Union, Brooklyn, NY

Marc Tessier-Lavigne, 2016
President, The Rockefeller University, New York, NY

Emily K. Rafferty, 2017
President Emerita, The Metropolitan Museum of Art, New York, NY

District 3–Philadelphia

Class A

David R. Hunsicker, 2015
Chairman, President, and Chief Executive Officer, New Tripoli Bank, New Tripoli, PA

William S. Aichele, 2016
Chairman, Univest Corporation of Pennsylvania, Souderton, PA

Jon Evans, 2017
President and Chief Executive Officer, Atlantic Community Bankers Bank, Camp Hill, PA

Class B

Carol J. Johnson, 2015
President and Chief Operating Officer, AlliedBarton Security Services, Conshohocken, PA

Edward J. Graham, 2016
Retired Chairman and Chief Executive Officer, South Jersey Industries, Folsom, NJ

Vacancy, 2017

Class C

James E. Nevels, 2015
Founder and Chairman, The Swarthmore Group, Philadelphia, PA

Brian McNeill, 2016
President and Chief Executive Officer, TouchPoint, Inc., Concordville, PA

Michael J. Angelakis, 2017
Senior Advisor to the Executive Management Committee, Comcast Corporation, Philadelphia, PA

District 4–Cleveland

Class A

Claude E. Davis, 2015
Chief Executive Officer, First Financial Bancorp, Cincinnati, OH

Kevin T. Kabat, 2016
Vice Chairman, Fifth Third Bancorp, Cincinnati, OH

Todd A. Mason, 2017
President and Chief Executive Officer, First National Bank of Pandora, Pandora, OH

Class B

Susan Tomasky, 2015
Energy Consultant and Former President, AEP Transmission, Columbus, OH

Hal Keller, 2016
President, Ohio Capital Corporation for Housing, Columbus, OH

Charles H. Brown, 2017
Vice President and Secretary, Toyota Motor Engineering & Manufacturing N.A., Erlanger, KY

Class C

Richard K. Smucker, 2015
Chief Executive Officer, The J.M. Smucker Company, Orrville, OH

Christopher M. Connor, 2016
Chairman and Chief Executive Officer, The Sherwin-Williams Company, Cleveland, OH

John P. Surma, 2017
Retired Chairman and Chief Executive Officer, United States Steel Corporation, Pittsburgh, PA

Cincinnati Branch

Appointed by the Federal Reserve Bank

Donald E. Bloomer, 2015
President and Chief Executive Officer, Citizens National Bank, Somerset, KY

Austin W. Keyser, 2016
Midwest Regional Director, AFL-CIO, Columbus, OH

Amos L. Otis, 2017
Founder, President, and Chief Executive Officer, SoBran, Inc., Dayton, OH

Dwight E. Smith, 2017
President and Chief Executive Officer, Sophisticated Systems, Inc., Columbus, OH

Appointed by the Board of Governors

Christopher C. Cole, 2015
Chief Executive Officer, Intelligrated, Inc., Mason, OH

Valarie L. Sheppard, 2016
Senior Vice President, Comptroller, and Treasurer, The Procter & Gamble Company, Cincinnati, OH

Deborah A. Feldman, 2017
President and Chief Executive Officer, Dayton Children's Hospital, Dayton, OH

Pittsburgh Branch

Appointed by the Federal Reserve Bank

Grant Oliphant, 2015
President, The Heinz Endowments, Pittsburgh, PA

Robert P. Oeler, 2016
President and Chief Executive Officer, Dollar Bank, Pittsburgh, PA

Audrey Dunning, 2017
Chief Executive Officer, Summa Technologies, Inc., Pittsburgh, PA

Robert I. Glimcher, 2017
President, Glimcher Group, Inc. Pittsburgh, PA

Appointed by the Board of Governors

Dawne S. Hickton, 2015
Former President and Chief Executive Officer, RTI International Metals, Inc., Pittsburgh, PA

Doris Carson Williams, 2016
President and Chief Executive Officer, African American Chamber of Commerce, Western Pennsylvania, Pittsburgh, PA

Charles L. Hammel III, 2017
President, PITT OHIO, Pittsburgh, PA

District 5–Richmond

Class A

Brad E. Schwartz, 2015
Chief Executive Officer, Monarch Bank and Monarch Financial Holdings, Inc., Chesapeake, VA

C. Richard Miller Jr., 2016
President and Chief Executive Officer, Woodsboro Bank, Woodsboro, MD

Robert R. Hill, Jr., 2017
Chief Executive Officer, South State Corporation and South State Bank, Columbia, SC

Class B

Wilbur E. Johnson, 2015
Managing Partner, Young Clement Rivers, LLP, Charleston, SC

Charles R. Patton, 2016
President and Chief Operating Officer, Appalachian Power Company, Charleston, WV

Thomas C. Nelson, 2017
Chairman, President and Chief Executive Officer, National Gypsum Company, Charlotte, NC

Class C

Russell C. Lindner, 2015
Executive Chairman and Chief Executive Officer, The Forge Company, Washington, DC

Mark L. Williamson, 2015
President and Chief Executive Officer, High Point Bank and Trust, High Point, NC

Margaret G. Lewis, 2016
Retired President, HCA Capital Division, Richmond, VA

Kathy J. Warden, 2017
Corporate Vice President and President, Information Systems Northrop Grumman Corporation, McLean, VA

Baltimore Branch

Appointed by the Federal Reserve Bank

Anita G. Newcomb, 2015
President, A.G. Newcomb & Co., Columbia, MD

Christopher J. Estes, 2015
President and Chief Executive Officer, National Housing Conference, Washington, DC

Mary Ann Scully, 2016
Chairman, President, and Chief Executive Officer, Howard Bancorp, Ellicott City, MD

Austin J. Slater, Jr., 2017
President and Chief Executive Officer, Southern Maryland Electric Cooperative, Inc., Hughesville, MD

Appointed by the Board of Governors

Vacancy, 2015

Samuel L. Ross, 2016
Chief Executive Officer, Bon Secours Baltimore Health System, Baltimore, MD

Susan J. Ganz, 2017
Chief Executive Officer, Lion Brothers Company, Inc., Owings Mills, MD

Charlotte Branch

Appointed by the Federal Reserve Bank

Lucia Z. Griffith, 2015
Chief Executive Officer and Principal, METRO Landmarks, Charlotte, NC

Mark L. Williamson, 2015
President and Chief Executive Officer, High Point Bank and Trust, High Point, NC

Michael C. Crapps, 2016
President, First Community Bank, Lexington, SC

Paul E. Szurek, 2017
Chief Financial Officer, Biltmore Farms, LLC, Asheville, NC

Appointed by the Board of Governors

Laura Y. Clark, 2015
Executive Director, Renaissance West Community Initiative, Charlotte, NC

Elizabeth A. Fleming, 2016
President, Converse College, Spartanburg, SC

Claude Z. Demby, 2017
Vice President of Business Development, Cree, Inc., Durham, NC

District 6–Atlanta

Class A

Gerard R. Host, 2015
President and Chief Executive Officer, Trustmark Corporation, Jackson, MS

T. Anthony Humphries, 2016
President and Chief Executive Officer, NobleBank & Trust, Anniston, AL

William H. Rogers, Jr., 2017
Chairman and Chief Executive Officer, SunTrust Banks, Atlanta, GA

Class B

Clarence Otis Jr., 2015
Former Chairman and Chief Executive Officer, Darden Restaurants, Inc., Orlando, FL

José S. Suquet, 2016
Chairman, President, and Chief Executive Officer, Pan-American Life Insurance Group, New Orleans, LA

Jonathan T.M. Reckford, 2017
Chief Executive Officer, Habitat for Humanity International, Atlanta, GA

Class C

Thomas A. Fanning, 2015
Chairman, President, and Chief Executive Officer, Southern Company, Atlanta, GA

Michael J. Jackson, 2016
Chairman, Chief Executive Officer, and President, AutoNation, Inc., Ft. Lauderdale, FL

Myron A. Gray, 2017
President, U.S. Operations, United Parcel Service, Atlanta, GA

Birmingham Branch

Appointed by the Federal Reserve Bank

John A. Langloh, 2015
President and Chief Executive Officer, United Way of Central Alabama, Birmingham, AL

James K. Lyons, 2015
Director and Chief Executive Officer, Alabama State Port Authority, Mobile, AL

Robert W. Dumas, 2016
President and Chief Executive Officer, AuburnBank, Auburn, AL

Herschell L. Hamilton, 2017
Managing Partner, BLOC Global Group, Birmingham, AL

Appointed by the Board of Governors

Pamela B. Hudson, MD, 2015
Chief Executive Officer, Crestwood Medical Center, Huntsville, AL

Brandon W. Bishop, 2016
International Representative, Southern Region, International Union of Operating Engineers, Birmingham, AL

Nancy C. Goedecke, 2017
Chairman and Chief Executive Officer, Mayer Electric Supply Company, Inc., Birmingham, AL

Jacksonville Branch

Appointed by the Federal Reserve Bank

Oscar J. Horton, 2015
President and Chief Executive Officer, Sun State International Trucks, LLC, Tampa, FL

D. Kevin Jones, 2015
President and Chief Executive Officer, MIDFLORIDA Credit Union, Lakeland, FL

Michael J. Grebe, 2016
Chief Executive Officer, Interline Brands Division, *Senior Vice President*, The Home Depot, Jacksonville, FL

Dana S. Kilborne, 2017
President and Chief Executive Officer, Florida Bank of Commerce, Orlando, FL

Appointed by the Board of Governors

Harold Mills, 2015
Chief Executive Officer, ZeroChaos, Orlando, FL

Carolyn M. Fennell, 2016
Chairman and Director of Public Affairs and Community Relations, Greater Orlando Aviation Authority, Orlando International Airport, Orlando, FL

David L. Brown, 2017
President, Chairman, and Chief Executive Officer, Web.com, Jacksonville, FL

Miami Branch

Appointed by the Federal Reserve Bank

Millar Wilson, 2015
Vice Chairman and Chief Executive Officer, Mercantil Commercebank, Coral Gables, FL

Gary L. Tice, 2016
Chairman and Chief Executive Officer, First Florida Integrity Bank, Naples, FL

Victoria E. Villalba, 2017
President and Chief Executive Officer, Victoria & Associates Career Services, Inc., Miami, FL

Carol C. Lang, 2017
President, HealthLink Enterprises, Inc., Miami, FL

Appointed by the Board of Governors

Alberto Dosal, 2015
Chairman and Chief Executive Officer, Dosal Capital, LLC, Doral, FL

Rolando Montoya, 2016
Provost, Miami Dade College, Miami, FL

Thomas W. Hurley, 2017
Chairman and Chief Executive Officer, Becker Holding Corporation, Vero Beach, FL

Nashville Branch

Appointed by the Federal Reserve Bank

Kent M. Adams, 2015
President and Chief Executive Officer, Caterpillar Financial Services Corporation, *Vice President*, Caterpillar Inc., Nashville, TN

Jennifer S. Banner, 2015
Chief Executive Officer, Schaad Companies, LLC, Knoxville, TN

William Y. Carroll Jr., 2016
President and Chief Executive Officer, SmartBank, Pigeon Forge, TN

R. Craig Holley, 2017
Chattanooga Chairman, CapitalMark Bank & Trust, Chattanooga, TN

Appointed by the Board of Governors

William J. Krueger, 2015
Executive Vice President, JATCO USA, Inc., Franklin, TN

Kathleen Calligan, 2016
Chief Executive Officer, Better Business Bureau Middle Tennessee, Nashville, TN

Scott McWilliams, 2017
Executive Chairman and Chief Customer Officer, OHL, Brentwood, TN

New Orleans Branch

Appointed by the Federal Reserve Bank

Suzanne T. Mestayer, 2015
Managing Principal, ThirtyNorth Investments, LLC, New Orleans, LA

Phillip R. May, 2015
President and Chief Executive Officer, Entergy Louisiana, LLC and Entergy Gulf States Louisiana, LLC, Jefferson, LA

Elizabeth A. Ardoin, 2016
Senior Executive Vice President – Director of Communications, IBERIABANK, Lafayette, LA

Lampkin Butts, 2017
President and Chief Operating Officer, Sanderson Farms, Inc., Laurel, MS

Appointed by the Board of Governors

Art E. Favre, 2015
President and Chief Executive Officer, Performance Contractors, Inc., Baton Rouge, LA

Terrie P. Sterling, 2016
Executive Vice President and Chief Operating Officer, Our Lady of the Lake Regional Medical Center, Baton Rouge, LA

Fred T. Stimpson III, 2017
President, U.S. South Operations, Canfor Scotch Gulf, Mobile, AL

District 7–Chicago

Class A

William M. Farrow III, 2015
President and Chief Executive Officer, Urban Partnership Bank, Chicago, IL

Abram A. Tubbs, 2016
Chairman and Chief Executive Officer, Ohnward Bank & Trust, Cascade, IA

David W. Nelms, 2017
Chairman and Chief Executive Officer, Discover Financial Services, Riverwoods, IL

Class B

Terry Mazany, 2015
President and Chief Executive Officer, The Chicago Community Trust, Chicago, IL

Jorge Ramirez, 2016
President, Chicago Federation of Labor, Chicago, IL

Nelda J. Connors, 2017
Chief Executive Officer, Pine Grove Holdings, LLC, Chicago, IL

Class C

Greg Brown, 2015
Chairman and Chief Executive Officer, Motorola Solutions, Inc., Schaumburg, IL

Jeffrey A. Joerres, 2015
Executive Chairman, ManpowerGroup, Milwaukee, WI

Anne R. Pramaggiore, 2016
President and Chief Executive Officer, ComEd, Chicago, IL

Detroit Branch

Appointed by the Federal Reserve Bank

Sheilah P. Clay, 2015
President and Chief Executive Officer, Neighborhood Service Organization, Detroit, MI

Nancy M. Schlichting, 2016
Chief Executive Officer, Henry Ford Health System, Detroit, MI

Susan M. Collins, 2017
Joan and Sanford Weill Dean of Public Policy, University of Michigan, Ann Arbor, MI

Fernando Ruiz, 2017
Corporate Vice President and Treasurer, The Dow Chemical Company, Midland, MI

Appointed by the Board of Governors

Lou Anna K. Simon, 2015
President, Michigan State University, East Lansing, MI

Douglas W. Stotlar, 2016
President and Chief Executive Officer, Con-way Inc., Ann Arbor, MI

Michael L. Seneski, 2017
Director, Corporate Strategy, Ford Motor Company, Dearborn, MI

District 8–St. Louis

Class A

William E. Chappel, 2015
Vice Chairman, The First National Bank, Vandalia, IL

D. Bryan Jordan, 2016
Chairman, President, and Chief Executive Officer, First Horizon National Corporation, Memphis, TN

Susan S. Stephenson, 2017
Co-Chairman and President, Independent Bank, Memphis, TN

Class B

Sonja Yates Hubbard, 2015
Chief Executive Officer, E-Z Mart Stores, Inc., Texarkana, TX

Cal McCastlain, 2016
Partner, Dover Dixon Horne PLLC, Little Rock, AR

John N. Roberts III, 2017
President and Chief Executive Officer, J.B. Hunt Transport Services, Inc., Lowell, AR

Class C

George Paz, 2015
Chairman and Chief Executive Officer, Express Scripts, St. Louis, MO

Kathleen M. Mazzarella, 2016
Chairman, President and Chief Executive Officer, Graybar Electric Company, Inc., St. Louis, MO

Rakesh Sachdev, 2017
President and Chief Executive Officer, Sigma-Aldrich Corp., St. Louis, MO

Little Rock Branch

Appointed by the Federal Reserve Bank

Ronald B. Jackson, 2015
Community Chairman, Simmons First National Bank of Pine Bluff, Russellville, AR

Michael A. Cook, 2016
Senior Vice President and Assistant Treasurer, Wal-Mart Stores, Inc., Bentonville, AR

Karama Neal, 2017
Chief Operating Officer, Southern Bancorp Community Partners, Little Rock, AR

Keith Glover, 2017
President and Chief Executive Officer, Producers Rice Mill, Inc., Stuttgart, AR

Appointed by the Board of Governors

Robert Martinez, 2015
Owner, Rancho La Esperanza, DeQueen, AR

P. Mark White, 2016
President and Chief Executive Officer, Arkansas Blue Cross and Blue Shield, Little Rock, AR

Ray C. Dillon, 2017
President and Chief Executive Officer, Deltic Timber Corporation, El Dorado, AR

Louisville Branch

Appointed by the Federal Reserve Bank

Jon A. Lawson, 2015
President, Chief Executive Officer, and Chairman, Bank of Ohio County, Beaver Dam, KY

David P. Heintzman, 2016
Chairman and Chief Executive Officer, Stock Yards Bank & Trust Company, Louisville, KY

Mary K. Moseley, 2017
Presidentand Chief Executive Officer, Al J. Schneider Co., Louisville, KY

Malcolm Bryant, 2017
President, The Malcolm Bryant Corporation, Owensboro, KY

Appointed by the Board of Governors

Susan E. Parsons, 2015
Chief Financial Officer, Secretary, and Treasurer, Koch Enterprises, Inc., Evansville, IN

Randy W. Schumaker, 2016
President and Chief Management Officer, Logan Aluminum, Inc., Russellville, KY

Alice K. Houston, 2017
President, Houston-Johnson, Inc., Louisville, KY

Memphis Branch

Appointed by the Federal Reserve Bank

Lisa McDaniel Hawkins, 2015
President, Room to Room Inc., Tupelo, MS

J. Brice Fletcher, 2016
Chairman and Chief Executive Officer, First National Bank of Eastern Arkansas, Forrest City, AR

Michael E. Cary, 2017
President and Chief Executive Officer, Carroll Bank and Trust, Huntingdon, TN

R. Molitor Ford Jr., 2017
Vice Chairman and Chief Executive Officer, Commercial Bank and Trust Company, Memphis, TN

Appointed by the Board of Governors

Charlie E. Thomas III, 2015
Regional Director of External & Legislative Affairs, AT&T Tennessee, Memphis, TN

Carolyn Chism Hardy, 2016
President and Chief Executive Officer, Chism Hardy Investments, LLC, Collierville, TN

David T. Cochran, Jr., 2017
Partner, CoCo Planting Co., Avon, MS

District 9–Minneapolis

Class A

Randy L. Newman, 2015
Chairman and Chief Executive Officer, Alerus Financial, NA and Alerus Financial Corp., Grand Forks, ND

Catherine T. Kelly, 2016
President and Chief Executive Officer, Minnesota Bank & Trust, Edina, MN

Thomas W. Armstrong, 2017
President, The First National Bank of Park Falls, Park Falls, WI

Class B

Christine Hamilton, 2015
Managing Partner, Christiansen Land and Cattle, Ltd, Kimball, SD

Lawrence R. Simkins, 2016
President and Chief Executive Officer, The Washington Companies, Missoula, MT

Kathleen Neset, 2017
President, Neset Consulting Service, Tioga, ND

Class C

Randall J. Hogan, 2015
Chairman and Chief Executive Officer, Pentair, Minneapolis, MN

Kendall J. Powell, 2016
Chairman and Chief Executive Officer, General Mills, Minneapolis, MN

MayKao Y. Hang, 2017
President and Chief Executive Officer, Amherst H. Wilder Foundation, St. Paul, MN

Helena Branch

Appointed by the Federal Reserve Bank

Barbara Stiffarm, 2015
Executive Director, Opportunity Link, Inc., Havre, MT

Thomas R. Swenson, 2016
President and Chief Executive Officer, Bank of Montana and Bancorp of Montana Holding Company, Missoula, MT

Duane Kurokawa, 2017
President, Western Bank of Wolf Point, Wolf Point, MT

Appointed by the Board of Governors

Marsha Goetting, 2015
Professor and Extension Family Economics Specialist, Montana State University, Bozeman, MT

Sarah Walsh, 2017
Chief Operating Officer, PayneWest Insurance, Helena, MT

District 10–Kansas City

Class A

David W. Brownback, 2015
President and Chief Executive Officer, Citizens State Bank & Trust Co., Ellsworth, KS

Max T. Wake, 2016
President, Jones National Bank & Trust Co., Seward, NE

Paul J. Thompson, 2017
President and Chief Executive Officer, Country Club Bank, Kansas City, MO

Class B

John T. Stout Jr., 2015
Chief Executive Officer, Plaza Belmont Management Group LLC, Shawnee Mission, KS

Len C. Rodman, 2016
Former Chairman, President, and Chief Executive Officer, Black & Veatch, Olathe, KS

Lilly Marks, 2017
Vice President for Health Affairs, University of Colorado and Anschutz Medical Campus, Aurora, CO

Class C

Steve Maestas, 2015
Chief Executive Officer, Maestas Development Group, Albuquerque, NM

Rose Washington, 2016
Executive Director, Tulsa Economic Development Corporation, Tulsa, OK

James C. Farrell, 2017
President and Chief Executive Officer, Farmers National Company, Omaha, NE

Denver Branch

Appointed by the Federal Reserve Bank

Edmond Johnson, 2015
President and Owner, Permier Manufacturing Inc., Frederick, CO

Anne Haines Yatskowitz, 2015
President and Chief Executive Officer, ACCION New Mexico–Arizona–Colorado–Nevada, Albuquerque, NM

Mark A. Zaback, 2016
President and Chief Executive Officer, Jonah Bank of Wyoming, Casper, WY

Ashley J. Burt, 2017
President, The Gunnison Bank and Trust Company, Gunnison, CO

Appointed by the Board of Governors

Richard L. Lewis, 2015
President and Chief Executive Officer, RTL Networks Inc., Denver, CO

Margaret M. Kelly, 2016
Former Chief Executive Officer, RE/MAX, LLC, Denver, CO

Gary DeFrange, 2017
President and Chief Operating Officer, Winter Park Resort, Winter Park, CO

Oklahoma City Branch

Appointed by the Federal Reserve Bank

Michael C. Coffman, 2015
President and Chief Executive Officer, Panhandle Oil and Gas, Inc., Oklahoma City, OK

Jane Haskin, 2016
President and Chief Executive Officer, First Bethany Bank & Trust, Bethany, OK

Charles R. Hall, 2016
Chairman and Chief Executive Officer, Exchange Bank and Trust Company, Perry, OK

Tina Patel, 2017
Chief Financial Officer, Promise Hotels, Inc., Tulsa, OK

Appointed by the Board of Governors

Peter B. Delaney, 2015
Former Chairman and Chief Executive Officer, OGE Energy Corp., Oklahoma City, OK

Clint D. Abernathy, 2016
President, Abernathy Farms, Inc., Altus, OK

Douglas J. Stussi, 2017
Executive Vice President and Chief Financial Officer, Love's Travel Stops & Country Store, Oklahoma City, OK

Omaha Branch

Appointed by the Federal Reserve Bank

Brian D. Esch, 2015
President and Chief Executive Officer, McCook National Bank, McCook, NE

James L. Thom, 2015
Vice President, T-L Irrigation Co., Hastings, NE

Anne Hindery, 2016
Chief Executive Officer, Nonprofit Association of the Midlands, Omaha, NE

Jeff W. Krejci, 2017
President and Director, Cornerstone Bank, York, NE

Appointed by the Board of Governors

G. Richard Russell, 2015
President and Chief Executive Officer, Millard Lumber Inc., Omaha, NE

John F. Bourne, 2016
International Representative, International Brotherhood of Electrical Workers, Omaha, NE

Eric L. Butler, 2017
Executive Vice President, Union Pacific Railroad, Omaha, NE

District 11–Dallas

Class A

Allan James "Jimmy" Rasmussen, 2015
President and Chief Executive Officer, HomeTown Bank, N.A., Galveston, TX

J. Russell Shannon, 2016
Chief Executive Officer, National Bank of Andrews, Andrews, TX

Christopher C. Doyle, 2017
President and Chief Executive Officer, Texas First Bank, Texas City, TX

Class B

Ann B. Stern, 2015
President and Chief Executive Officer, Houston Endowment, Inc., Houston, TX

Curtis V. Anastasio, 2016
Executive Chairman, GasLog Partners LP, New York, NY

Jorge A. Bermudez, 2017
President and Chief Executive Officer, Byebrook Group, College Station, TX

Class C

Greg L. Armstrong, 2015
Chairman and Chief Executive Officer, Plains All American Pipeline, Houston, TX

Matthew K. Rose, 2016
Executive Chairman, BNSF Railway Company, Fort Worth, TX

Renu Khator, 2017
Chancellor and President, University of Houston, Houston, TX

El Paso Branch

Appointed by the Federal Reserve Bank

Robert Nachtmann, 2015
Dean and Professor of Finance, College of Business Administration, The University of Texas at El Paso, El Paso, TX

Paul L. Foster, 2016
Executive Chairman, Western Refining, Inc., El Paso, TX

Jerry Pacheco, 2017
President, Global Perspectives Integrated, Inc., Santa Teresa, NM

Teresa O. Molina, 2017
President, First Next Mexico Bank, Deming, NM

Appointed by the Board of Governors

Renard U. Johnson, 2015
President and Chief Executive Officer, Management & Engineering Technologies International Inc. (METI), El Paso, TX

J. Eric Evans, 2016
Chief Executive Officer, Providence Memorial Hospital and Sierra Medical Center, El Paso, TX

Richard D. Folger, 2017
Managing General Partner, Colbridge Partners Ltd., Midland, TX

Houston Branch

Appointed by the Federal Reserve Bank

Paul B. Murphy Jr., 2015
President and Chief Executive Officer, Cadence Bank, Houston, TX

Gerald B. Smith, 2016
Chairman and Chief Executive Officer, Smith, Graham & Company Investment Advisors, L.P., Houston, TX

Albert Chao, 2017
President and Chief Executive Officer, Westlake Chemical Corp, Houston, TX

R.A. "Al" Walker, 2017
Chairman, President, and Chief Executive Officer, Anadarko Petroleum Corporation, Houston, TX

Appointed by the Board of Governors

Ellen Ochoa, 2015
Government Executive and Director, NASA Johnson Space Center, Houston, TX

Marcus A. Watts, 2016
President, The Friedkin Group, Houston, TX

Robert C. Robbins, MD, 2017
President and Chief Executive Officer, Texas Medical Center, Houston, TX

San Antonio Branch

Appointed by the Federal Reserve Bank

Alfred B. Jones, 2015
President and Director, American Bank Holding Co., Corpus Christi, TX

Vacancy, 2016

Janie Barrera, 2017
President and Chief Executive Officer, LiftFund Texas, Inc., San Antonio, TX

Robert L. Lozano, 2017
Franchise Owner and Operator, Dairy Queen, Pharr, TX

Appointed by the Board of Governors

Catherine M. Burzik, 2015
President and Chief Executive Officer, CFB Interests, LLC, San Antonio, TX

James "Rad" Conrad Weaver, 2016
Chief Executive Officer, McCombs Partners, San Antonio, TX

Manoj Saxena, 2017
Managing Director, The Entrepreneurs' Fund, San Antonio, TX

District 12–San Francisco

Class A

Peter S. Ho, 2015
Chairman, President, and Chief Executive Officer, Bank of Hawaii and Bank of Hawaii Corporation, Honolulu, HI

Steven R. Gardner, 2016
President and Chief Executive Officer, Pacific Premier Bank, Irvine, CA

Megan F. Clubb, 2017
Chief Executive Officer and Chairman of the Board, Baker Boyer National Bank, Walla Walla, WA

Class B

Steven E. Bochner, 2015
Partner, Wilson, Sonsini, Goodrich, & Rosati, P.C., Palo Alto, CA

Nicole C. Taylor, 2016
Associate Vice Provost for Student Affairs and Dean of Community Engagement and Diversity, Stanford University, Stanford, CA

Richard A. Galanti, 2017
Executive Vice President and Chief Financial Officer, Costco Wholesale Corporation, Issaquah, WA

Class C

Alexander R. Mehran, 2015
Chairman and Chief Executive Officer, Sunset Development Company, San Ramon, CA

Barry M. Meyer, 2016
Chairman and Founder, North Ten Mile Associates, Burbank, CA

Roy A. Vallee, 2017
Retired Executive Chairman and Chief Executive Officer, Avnet, Inc., Phoenix, AZ

Los Angeles Branch

Appointed by the Federal Reserve Bank

Ilyanne Morden Kichaven, 2015
Executive Director Los Angeles, SAG-AFTRA, Los Angeles, CA

John C. Molina, 2015
Chief Financial Officer, Molina Healthcare, Inc., Long Beach, CA

David I. Rainer, 2016
Chairman and Chief Executive Officer, California United Bank, Encino, CA

Peggy Tsiang Cherng, 2017
Co-Chair of the Board and Co-Chief Executive Officer, Panda Restaurant Group, Inc., Rosemead, CA

Appointed by the Board of Governors

Gina Marie Lindsey, 2015
Retired Executive Director, Los Angeles World Airports, Los Angeles, CA

James A. Hughes, 2016
Chief Executive Officer, First Solar, Inc., Tempe, AZ

Robert H. Gleason, 2017
President and Chief Executive Officer, Evan Hotels, San Diego, CA

Portland Branch

Appointed by the Federal Reserve Bank

S. Randolph Compton, 2015
President, Chief Executive Officer, and Co-Chairperson of the Board, Pioneer Trust Bank, N.A., Salem, OR

Steven J. Zika, 2016
Chief Executive Officer, Hampton Affiliates, Portland, OR

Robert C. Hale, 2017
Chief Executive Officer, Hale Companies, Hermiston, OR

Charles A. Wilhoite, 2017
Managing Director, Willamette Management Associates, Portland, OR

Appointed by the Board of Governors

Román D. Hernández, 2015
Partner, Schwabe, K&L Gates LLP, Portland, OR

Joseph E. Robertson Jr., MD, 2016
President, Oregon Health & Science University, Portland, OR

Tamara L. Lundgren, 2017
President and Chief Executive Officer, Schnitzer Steel Industries, Inc., Portland, OR

Salt Lake City Branch

Appointed by the Federal Reserve Bank

Susan D. Mooney Johnson, 2015
President, Futura Industries, Clearfield, UT

Albert T. Wada, 2016
Chairman, Wada Farms, Inc., Pingree, ID

Josh England, 2017
President, C.R. England, Inc. Salt Lake City, UT

Park Price, 2017
Chief Executive Officer Emeritus and Chairman, Bank of Idaho, Idaho Falls, ID

Appointed by the Board of Governors

Bradley J. Wiskirchen, 2015
Chief Executive Officer, Keynetics, Inc., Boise, ID

Peter R. Metcalf, 2016
Lead Founder and Chief Executive Officer, Black Diamond, Inc., Salt Lake City, UT

Patricia R. Richards, 2017
President and Chief Executive Officer, SelectHealth, Inc., Murray, UT

Seattle Branch

Appointed by the Federal Reserve Bank

Greg C. Leeds, 2015
President and Chief Executive Officer, Wizards of the Coast, Hasbro, Inc., Renton, WA

Nicole W. Piasecki, 2016
Vice President and General Manager, Propulsion Systems Division, Boeing Commercial Airplanes, Seattle, WA

Craig Dawson, 2017
President and Chief Executive Officer, Retail Lockbox, Inc., Seattle, WA

Carol K. Nelson, 2017
Pacific Region Sales Executive and Seattle Market President, KeyBank, Seattle, WA

Appointed by the Board of Governors

Mary O. McWilliams, 2015
Retired Executive Director, Washington Health Alliance, Seattle, WA

Sophie Minich, 2016
President and Chief Executive Officer, Cook Inlet Region, Inc., Anchorage, AK

Scott L. Morris, 2017
Chairman, President and Chief Executive Officer, Avista Corporation, Spokane, WA

Reserve Bank and Branch Leadership

Each year, the Board of Governors designates one Class C director to serve as chair, and one Class C director to serve as deputy chair, of each Reserve Bank board. Reserve Banks also have a president and first vice president who are appointed by the Bank's Class C, and certain Class B, directors, subject to approval by the Board of Governors. Each Reserve Bank selects a chair for every Branch in its District from among the directors on the Branch board who were appointed by the Board of Governors. For each Branch, an officer from its Reserve Bank is also charged with the oversight of Branch operations.

Boston

William D. Nordhaus, *Chair*

John F. Fish, *Deputy Chair*

Eric S. Rosengren, *President and Chief Executive Officer*

Kenneth C. Montgomery, *First Vice President and Chief Operating Officer*

New York

Emily K. Rafferty, *Chair*

Sara Horowitz, *Deputy Chair*

William C. Dudley, *President*

Michael Strine, *First Vice President*

Additional office at East Rutherford, NJ

Philadelphia

James E. Nevels, *Chair*

Michael J. Angelakis, *Deputy Chair*

Patrick T. Harker, *President*

D. Blake Prichard, *First Vice President*

Cleveland

Christopher M. Connor, *Deputy Chair*

John P. Surma, *Deputy Chair*

Loretta J. Mester, *President*

Gregory Stefani, *First Vice President*

Cincinnati

Valerie L. Sheppard, *Chair*

LaVaughn M. Henry, *Senior Regional Officer*

Pittsburgh

Dawne S. Hickton, *Chair*

Guhan Venkatu, *Senior Regional Officer*

Richmond

Russell C. Lindner, *Deputy Chair*

Margaret G. Lewis, *Deputy Chair*

Jeffrey M. Lacker, *President*

Mark L. Mullinix, *First Vice President*

Baltimore

Samuel L. Ross, *Chair*

David E. Beck, *Senior Vice President and Baltimore Regional Executive*

Charlotte

Elizabeth A. Fleming, *Chair*

Matthew A. Martin, *Senior Vice President and Charlotte Regional Executive*

Atlanta

Thomas A. Fanning, *Chair*

Michael J. Jackson, *Deputy Chair*

Dennis P. Lockhart, *President*

Marie C. Gooding, *First Vice President*

Birmingham

Pamela B. Hudson, MD, *Chair*

Lesley McClure, *Vice President and Regional Executive*

Jacksonville

Harold Mills, *Chair*

Christopher L. Oakley, *Vice President and Regional Executive*

Miami

Alberto Dosal, *Chair*

Karen Gilmore, *Vice President and Regional Executive*

Nashville

William J. Krueger, *Chair*

Lee C. Jones, *Vice President and Regional Executive*

New Orleans

Terrie P. Sterling, *Chair*

Adrienne C. Slack, *Vice President and Regional Executive*

Chicago

Greg Brown, *Chair*

Anne R. Pramaggiore, *Deputy Chair*

Charles L. Evans, *President*

Ellen J. Bromagen, *First Vice President*

Additional office at Des Moines, IA

Detroit

Lou Anna K. Simon, *Chair*

Robert Wiley, *Officer in Charge*

St. Louis

George Paz, *Chair*

Rakesh Sachdev, *Deputy Chair*

James Bullard, *President*

David A. Sapenaro, *First Vice President*

Little Rock

Ray C. Dillon, *Chair*

Robert A. Hopkins, *Regional Executive*

Louisville

Susan E. Parsons, *Chair*

Maria Gerwing Hampton, *Regional Executive*

Memphis

Carolyn Chism Hardy, *Chair*

Martha Perine Beard, *Regional Executive*

Minneapolis

Randall J. Hogan, *Chair*

MayKao Y. Hang, *Deputy Chair*

Narayana R. Kocherlakota, *President*

James M. Lyon, *First Vice President*

Helena

Marsha Goetting, *Chair*

Susan Woodrow, *Assistant Vice President and Branch Executive*

Kansas City

Steve Maestas, *Chair*

Rose Washington, *Deputy Chair*

Esther L. George, *President*

Kelly J. Dubbert, *First Vice President*

Denver

Margaret M. Kelly, *Chair*

Alison Felix, *Officer in Charge*

Oklahoma City

Peter B. Delaney, *Chair*

Chad R. Wilkerson, *Officer in Charge*

Omaha

John F. Bourne, *Chair*

Nathan Kauffman, *Officer in Charge*

Dallas

Renu Khator, *Chair*

Matthew K. Rose, *Deputy Chair*

Robert S. Kaplan, *President*

Helen E. Holcomb, *First Vice President*

El Paso

Renard U. Johnson, *Chair*

Roberto A. Coronado, *Officer in Charge*

Houston

Ellen Ochoa, *Chair*

Daron D. Peschel, *Officer in Charge*

San Antonio

Catherine M. Burzik, *Chair*

Blake Hastings, *Officer in Charge*

San Francisco

Roy A. Vallee, *Chair*

Alexander R. Mehran, *Deputy Chair*

John C. Williams, *President*

Mark A. Gould, *First Vice President*

Additional office at Phoenix, AZ

Los Angeles

James A. Hughes, *Chair*

Roger W. Replogle, *Officer in Charge*

Portland

Joseph E. Robertson, Jr., *Chair*

Steven H. Walker, *Officer in Charge*

Salt Lake City

Bradley J. Wiskirchen, *Chair*

Robin A. Rockwood, *Officer in Charge*

Seattle

Scott L. Morris, *Chair*

Susan A. Sutherland, *Officer in Charge*

Leadership Conferences

Conference of Chairs

The chairs of the Federal Reserve Banks are organized into the Conference of Chairs, which meets to consider matters of common interest and to consult with and advise the Board of Governors. Such meetings, also attended by the deputy chairs, were held in Washington, D.C., on May 19–20 and November 3–4, 2015. The conference's executive committee members for 2015 are listed below.[1]

Conference of Chairs Executive Committee—2015

Emily K. Rafferty, *Chair*,
Federal Reserve Bank
of New York

Roy A. Vallee, *Vice Chair*,
Federal Reserve Bank
of San Francisco

Thomas A. Fanning, *Member*,
Federal Reserve Bank of Atlanta

Conference of Presidents

The presidents of the Federal Reserve Banks are organized into the Conference of Presidents, which meets periodically to identify, define, and deliberate issues of strategic significance to the Federal Reserve System; to consider matters of common interest; and to consult with and advise the Board of Governors. The chief executive officer of each Reserve Bank was originally labeled governor and did not receive the title of president until the passage of the Banking Act of 1935. Consequently, when the Conference was first established in 1914 it was known as the Conference of Governors. Conference officers for 2015 are listed below.

Conference of Presidents—2015

Dennis P. Lockhart, *Chair*,
Federal Reserve Bank of Atlanta

Eric S. Rosengren, *Vice Chair*,
Federal Reserve Bank of Boston

Maria R. Smith, *Secretary*,
Federal Reserve Bank of Atlanta

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[1] On November 4, 2015, the Conference of Chairs elected Roy A. Vallee, chair of the Federal Reserve Bank of San Francisco, as chair of the conference's executive committee for 2016. The conference also elected Thomas A. Fanning, chair of the Federal Reserve Bank of Atlanta for 2016 as vice chair, and Steve Maestas, chair of the Federal Reserve Bank of Kansas City for 2016, as the executive committee's third member.

Conference of First Vice Presidents

The Conference of First Vice Presidents of the Federal Reserve Banks was organized in 1969 to meet periodically for the consideration of operations and other matters. Conference officers for 2015 are listed below.[2]

Conference of First Vice Presidents—2015

Kenneth C. Montgomery, *Chair*, Federal Reserve Bank of Boston

Gregory Stefani, *Vice Chair*, Federal Reserve Bank of Cleveland

Jeanne MacNevin, *Secretary*, Federal Reserve Bank of Boston

Terri Bialowas, *Assistant Secretary*, Federal Reserve Bank of Cleveland

[2] On November 4, 2015, the conference elected Gregory Stefani as chair for 2016–17 and Kelly Dubbert, Federal Reserve Bank of Kansas City, as vice chair. The conference also elected Terri Bialowas as secretary and Erika Ramirez, Federal Reserve Bank of Kansas City, as assistant secretary.

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