



Chapter 3

Financial services and private sector: The future of export diversification in Africa

As observed in previous chapters, firms, in particular new entrants and small-scale exporting companies, need to secure external financing to cover the large costs of entering export markets. The fixed costs to be paid up front by an exporting firm when entering a new market, also known as sunk entry costs, mainly include information costs, compliance costs and other costs related to trade barriers. Information costs are necessary to gain a better understanding of the required regulations and standards of a potential foreign market. Compliance costs stem from the need to redesign products for export that meet demand standards for a specific market and establish new processes or procedures to comply with foreign market regulations and standards. Other costs related to trade barriers include customs procedures, logistics, lead time and tariffs. The substantial information and compliance costs can affect a firm's decision to enter a new market, decreasing the probability of export by 9 to 16 percentage points and 16 to 18 percentage points, respectively (Wei et al., 2019). For manufacturing firms, additional costs related to investments in plants, machinery or equipment required to export can also be challenging to secure. As for firms in service activities, adapting to foreign demand characteristics or tailoring exports to the tastes and standards of local consumers in new markets may require additional investments in skills and technologies. This chapter examines the potential of SMEs to facilitate export diversification in Africa, especially through the services sector, when supported by sound financial services or provided with access to affordable financing.

In many African countries, the existing financial structure may not offer greater flexibility and resources to support firms' export determinants, hence resulting in reduced capacity to export and diversify their export baskets. The financial system in Africa mainly revolves around the banking sector, which accounts for more than 90 per cent of financial sector assets (Economic Commission for Africa, 2020). The current structure of bank sector financing may not be suitable for small firms' growth and export performance, which requires tailored financing mechanisms, such as venture capital and business angels, and financial technologies that can improve traditional credit channels and offer other promising channels to bridge the financing gaps of micro, small and medium-sized enterprises. "FinTech", a portmanteau word for financial technology, refers to the use of technology to supply financial services, also known as alternative finance (Makina, 2019). Alternative finance, according to Nesta (2014), refers to a variety of innovative funding models that are emerging outside the traditional banking system and that use Internet platforms or websites to connect fundraisers with funders and investors. Digital payment systems, crowdfunding, peer-to-peer consumer financing, peer-to-peer business lending and invoice trading are examples of such models.

3.1 Interrelationships between financial services, private sector development and export diversification in Africa

As established in the previous chapters, businesses can play an essential role in efforts to achieve export diversification. The view that economic growth is not driven by comparative advantage as suggested by classical economists, but by a country's ability to diversify its investments into new and productive economic activities, has gained traction since the work of Hausmann and Rodrik (2003). Entrepreneurial activities, especially those undertaken by small and medium-sized enterprises, can help diversify economies in Africa, including by facilitating the intensive and extensive margins of exports. The review of the literature thus far seems to suggest that the relationship between export diversification and structural transformation is bidirectional.

This section explores the interrelationships between financial services, private sector development and export diversification, with a particular focus on the financing factors that affect firm-level export diversification. Box 10 presents the methodology applied

to examine the independent and joint roles of financial services and private sector development in spurring export diversification in Africa, with the caveat that emphasis is made on access to mobile money as a measure of financial technology. The financial development index of a country is not the only measure of digital financial development. Access to mobile money can also be used to measure levels of financial technology and enable digital financial development.

Box 10

Examining the roles of financial services and private sector development in furthering export diversification in Africa: Methodology

To assess the interrelationships between financial services, private sector development and export diversification in African countries, econometric dynamic panel data regression models are applied to determine whether significant differences in the macrostructure of the export sector across African countries are related to cross-country variation in multidimensional financial development between 2000 and 2020. The model also highlights the role played by access to finance in extensive and intensive margins of exports of firms in Africa. Data are derived from the Financial Sector Development database and Export Diversification and Quality database of the International Monetary Fund, and the World Development Indicators, Exporter Dynamics database and Enterprise Surveys of the World Bank. The data cover 54 African countries between 2000 and 2020.

The proposed empirical methodology is stated as follows:

$$ExportMeasure_{it} = \alpha + \varphi FD_{it} + \delta PSD_{it} + \omega (FD * PSD)_{it} + \eta X_{it} + \epsilon_{it}$$

Where the dependent variable *ExportMeasure* is the Theil overall index of export, which measures macro-level export concentration, and *FD* measures financial sector development. The financial development index, the share of bank credit to bank deposit and the share of insurance premium volume to GDP are used as proxies of financial sector development. *PSD* captures private sector development indicated by the degree of protection of private property rights and rule-based governance, domestic credit to private sector by banks and cost of business start-up procedures. *X* is a vector of control variables that include GDP annual growth rate, exchange rate, human capital, government health expenditure as a share of GDP and measures of infrastructure development such as gross fixed capital formation and electricity access; and ϵ is the error term. α , φ , δ , ω , and η are the coefficients to be estimated in the model.

$\delta + \omega * \overline{PSD}$ measures the variation of export concentration due to the improvement of the financial sector with \overline{PSD} being the average value of the indicator of private sector development.

If $\delta + \omega * \overline{PSD} > 0$, and α, φ are statistically significant, then the improvement of the financial sector leads to the concentration of exports.

If $\delta + \omega * \overline{PSD} < 0$, and α, φ are statistically significant, then the improvement of the financial sector leads to the diversification of exports.

If α, φ are not statistically significant, then the improvement of the financial sector does not affect macro-level export concentration.

The model estimates, at the firm level, the role played by access to finance in extensive and intensive margins of exports of firms in Africa using the following instrumental variables model:

$$Exportmargins_i^* = \delta_0 + \delta_1 FinAccess_i^* + \delta_2 X_i + \varepsilon_i$$

where *Exportmargins* represents a firm's export volume. X_i is a matrix of control variables for firm i . *FinAccess*^{*} represents access of lines of credit or bank loan; and Z_i is the chosen instrument. δ_0, δ_1 and δ_2 represent the coefficients to be estimated in the model. ε_i is the error term.

If $\delta_1 > 0$, and statistically significant, then the firm's likelihood to export increases with the improvement of access of lines of credit or a bank loan.

If $\delta_1 < 0$, and statistically significant, then the firm's likelihood to export decreases with the improvement of access of lines of credit or a bank loan.

If δ_1 is not statistically significant, then the firm's likelihood to export does not depend on the improvement of access of lines of credit or a bank loan.

Box table 10.I presents the results of the cross-country panel regressions. The results suggest that multidimensional financial development has a direct relationship with macro-level export diversification, albeit statistically insignificant. As the overall financial sector develops, firms' access to credit also improves, strengthening their ability to increase their share of manufacturing relative to primary export, leading to greater export diversification. Box table 10.II delves into the micro characteristics of financial development, exporting firm behaviour and export diversification. Therefore, financial technology (proxied by mobile money registered accounts per 1,000 people) as an alternative measure of financial development is used to empirically assess firms' growth and diversification-induced potential of financial technology and alternative financing. The results show that when private sector development and financial technology grow independently, it pushes countries to specialize more, leading to more export concentration rather than export diversification. However, their interaction effect drives countries toward greater export diversification. This is supported by Bollaert et al. (2021), who finds that the positive externalities of rapid financial technology growth

potentially democratize the provision of financial services, which helps bridge the financing gap for SMEs to support export diversification. To enable these positive and impactful interactions to happen in most African countries, the development of financial technology will need to reach the maturity level required to influence a paradigm shift in export expansion and diversification.

Table 10.1

Determinants of macro-level export concentration in Africa

Variable	Notation	Pooled ordinary least squares	Dynamic panel
Theil index of concentration	<i>TIE</i>		0.2652 ^a
L1			-0.159
Financial development	<i>FD</i>	-7.5879 (7.374)	-23.0178 (32.339)
Private property rights and rule-based governance	<i>PPRB</i>	-1.3302 ^b (0.308)	-0.0019 (1.255)
Financial development _t x private property rights and rule-based governance	<i>FD_FB</i>	5.1458 ^a (2.593)	2.04738 (10.327)
Ln (GDP annual growth rate)	<i>GDP growth</i>	-0.0111 (0.111)	-0.0261 (.0561)
Electricity access	<i>ELEC</i>	-0.0010 ^b (0.005)	-0.0218 (0.015)
Health expenditures (as a percentage of GDP)	<i>HExpofGDP</i>	0.0024 (0.009)	-0.0065 (0.007)
School enrollment, secondary (percentage gross)	<i>Schooling</i>	-0.0168 ^c (0.009)	-0.0066 (0.007)
Official exchange rate	<i>XR</i>	-0.0001 (0.0001)	0.00003 (0.002)
Gross fixed capital formation	<i>GFCF</i>	-0.0036 (0.001)	-0.0041 ^c (0.002)
Intercept	<i>Cons_</i>	8.1985 ^b (0.994)	6.4449 (4.910)
Number of observations		74	47
Number of instruments			46
R-square		0.4180	
Sargan test ^d chi(2)30			47.64
Prob > chi(2)			0.075
Autocorrelation test (p-value)			0.0810

^a $p < 0.1$.

^b $p < 0.01$.

^c $p < 0.05$.

^d Test for over-identifying restrictions in dynamic panel-data estimations.

Note: Standard errors (clustered by country) are shown in parentheses.

Abbreviations: L1, first lag; Ln, natural logarithm; prob, probability.

Table 10.II

Financial technology, private sector development and export concentration

Variable	Notation	Pooled ordinary least squares	Dynamic panel
Theil index of concentration	<i>TIE</i>		0.222
L1			(0.142)
M-money accounts per 1,000	<i>Mmoney</i>	0.004	0.007 ^c
		(0.003)	(0.003)
Private property rights and rule-based governance	<i>PPR</i>	-0.584 ^c	0.849 ^b
		(0.242)	(0.318)
Private property rights and rule-based governance x mobile money	<i>PPR_PS</i>	0.002	-0.002 ^c
		(0.001)	(0.001)
Electricity access	<i>ELEC</i>	0.005	-0.026
		(0.006)	(0.017)
Government health expenditures (as a percentage of GDP)	<i>HexopfGDP</i>	0.011	-0.004
		(0.01)	(0.009)
School enrollment, secondary (percentage gross)	<i>Schooling</i>	-0.007	-0.038 ^a
		(0.007)	(0.021)
Official exchange rate	<i>XR</i>	0.0001 ^a	0.001
		(0.001)	(0.002)
GDP growth rate	<i>GDP</i>	-0.023	-0.049
		(0.107)	(0.047)
Gross fixed capital formation	<i>GFCF</i>	-0.01 ^b	-0.00
		(0.003)	(0.003)
Intercept	<i>Cons_</i>	6.457 ^b	3.019
		(0.515)	(2.057)
Number of observations		73	47
Number of instruments			46
R-square		0.36	
Sargan test ^d chi(2)31			41.7
Prob > chi(2)			0.201
Autocorrelation test (p-value)			0.007

^a p < 0.1.

^b p < 0.01.

^c p < 0.05.

^d Test for over-identifying restrictions in dynamic panel-data estimations.

Note: Standard errors (clustered by country) are shown in parentheses.

Abbreviations: L1, first lag; M-money, mobile money; prob, probability.

Source: UNCTAD calculations, based on UNCTAD, forthcoming-b.

The empirical study summarized in box 10 suggests that as the overall financial sector develops, firms' access to credit also improves, strengthening their ability to increase their share of manufacturing relative to primary export, leading to greater export diversification. These findings are in line with Acemoglu and Zilibotti (1997) and DeRosa (1992).

Alternative financing can help to bridge the investment gap for start-ups and micro, small and medium-sized enterprises



*Source: International Finance Corporation (IFC)

The private sector, in particular micro, small and medium-sized firms, forms the foundation of growth and economic development.²⁶ The role of the private sector in diversifying and upgrading export patterns, in attracting investment in growth sectors or in stimulating innovation in domestic industries, productivity and exports has helped develop and strengthen the economic fibre of many advanced countries and emerging markets. In many developing countries, particularly in Africa, the potential role of the private sector is often limited due to financial constraints and other challenges hindering business growth and survival likelihood, as well as its contribution to trade and productivity in domestic markets. According to International Finance Corporation (2017, and updated data for 2018–2019), there are about 50 million formal micro, small, and medium-sized enterprises in Africa with an unmet financing need of \$416 billion every year.²⁷ Nigeria represents about 38 per cent of the financing needs of micro, small and medium-sized enterprises in Africa. In Niger, formal micro, small and medium-sized enterprises, of which there are relatively few (about 8,000 firms), are highly credit constrained, with a financing gap equivalent to 44 per cent of the country's GDP. The credit constraints faced by many micro, small and medium-sized enterprises can affect their sales, profit growth and exports.

While banking services strongly encourage countries to specialize in the production and export of commodities for which they enjoy a comparative advantage, insurance

²⁶ An enterprise is characterized as micro, small or medium sized when it maintains assets, revenues and the number of employees below a certain threshold. A microenterprise will have up to 10 employees, while small and medium-sized enterprises will have fewer than 50 and 250 employees, respectively. The amount of assets or revenues generated by micro, small and medium-sized enterprises varies from country to country. For the purpose of this report, micro, small and medium-sized enterprises are defined in terms of the number of persons employed (European Commission, 2022; United Nations Development Programme, 1999).

²⁷ Calculations based on International Finance Corporation, 2017 and updated data 2018–2019 (www.ifc.org).

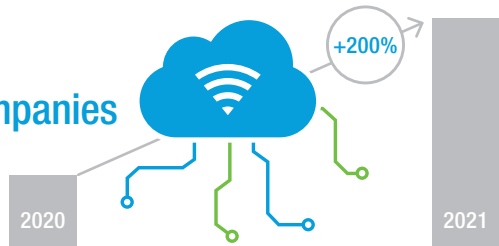
services provide countries with a cushion to diversify their export portfolio. Even during periods of banking sector development, banks in most African countries may not always extend banking services to every firm that could make use of them due to the interrelated problems of information asymmetries and high transaction costs. It is for similar reasons that the provision of bank credit in most African countries is structured in such a way that precludes most recipient firms, especially smaller ones, from taking extra risks by venturing into other new product lines. Insurance, on the other hand, plays an important part in spreading risk, thus encouraging countries to venture into new product lines and markets. The protection of private property rights and banking services play a complementary role in export diversification, since developing the banking sector alone without a good degree of private property rights protection is insufficient to induce export diversification.

Given the specific financing needs of African firms and the difficulties of accessing funds from traditional financial sources such as banks, innovative financial instruments, practices and technology (for instance, financial technology) can be optimized to secure access to credit and external financing (debt or equity). Financial technology has the potential to help African countries achieve financial and social inclusion by decreasing inefficiencies in resource allocation within the traditional banking sector and offering economic opportunities that promote financial access and social development (Ding et al., 2018; Salampasis and Mention, 2018). Part of financial technology's growing popularity stems from its ability to overcome long-standing hurdles, resulting in underrepresented SMEs in financial markets. Empirical evidence suggests that the use of financial technology can help lower the incidence of trade finance rejections, especially among smaller firms (Lee et al., 2021). Financial service providers can use big data analytics and artificial intelligence to lower the cost of analysing SMEs' financial data and making credit decisions without requiring otherwise strenuous formal documentation. Such documentation can be particularly costly for smaller firms, especially as the amounts involved are relatively small and transactions infrequent. This potential role and benefits of financial technology for SME financing is more prominent in other developing regions. For instance, in Asia, there are examples showing the effective reach of financial technology in the SME sector. These include an artificial intelligence-enabled credit score system funded by the Asian Development Bank that provided \$50,000 in financing to over 8,000 SMEs in the Greater Mekong subregion. Similarly, using artificial intelligence, Ant Group's 310 online lending platform has already served 29 million SMEs in China, while maintaining a non-performing loan ratio of less than 2 per cent, even during the peak of the COVID-19 pandemic (Lee et al., 2021).

Investment in African financial technology companies

soared to a record of over **\$2 billion*** in 2021

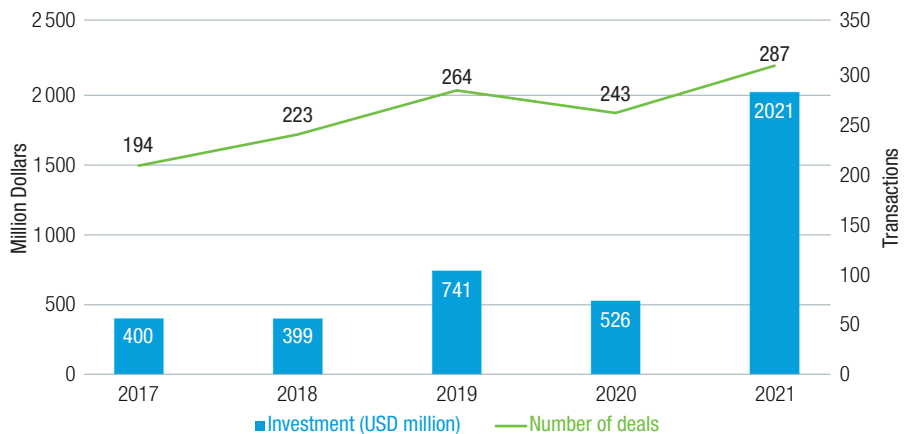
*Source: FinTech Global (2022)



Although financial technology has been spreading in Africa, reaching over \$2 billion in investments in 2021 (Figure 24), it has yet to reach the development stage, in which economies can leverage it to support the financing of valued added productive activities. For example, mobile money, the most commonly used financial technology in Africa, is only being utilized to advance short-term microloans to users. Sectors that dominate the African financial technology industry are payments and remittances, marketplace lending and wealth technology, accounting respectively for 26 per cent, 19 per cent and 14 per cent of all transactions in 2021 (Figure 25). A company worthy of mention in the payments and remittances sector is OPay, a Nigerian-based point of sale platform and mobile payment service that raised \$400 million in 2021. It boasts 160 million active users, expanding access to the large unbanked population in Nigeria (Fintech Global, 2022).

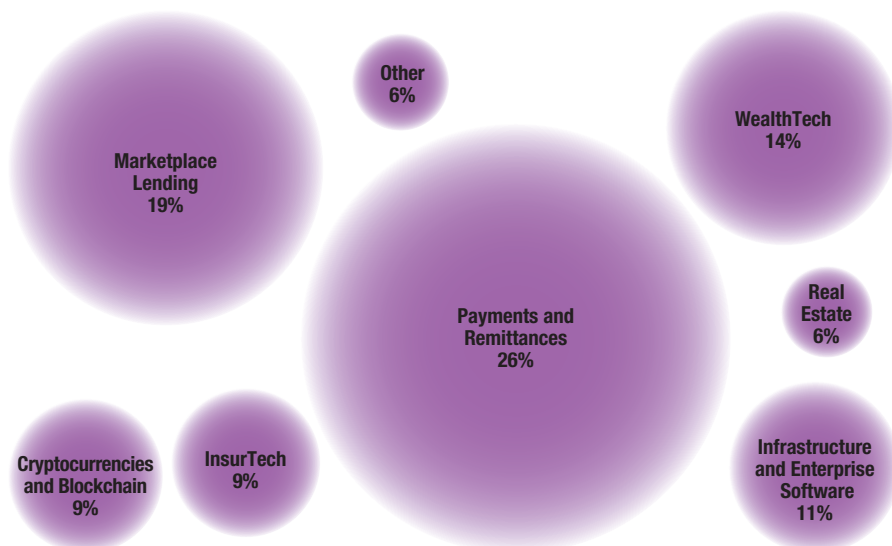
Figure 24

Financial technology investment in Africa, 2017–2021



Source: UNCTAD, based on data from Fintech Global, 2022.

Figure 25

Financial technology investment in Africa by sector: Share of transactions, 2021

Source: UNCTAD, based on data from Fintech Global, 2022.

In the marketplace lending sector, MNT-Halan, an Egyptian-based non-bank lender and payments platform, raised \$120 million in 2021 on the back of new regulation (such as granting licences for micro and consumer finance and electronic wallets) and support measures (for instance, setting up a financial technology and innovation fund) introduced by the Central Bank of Egypt to strengthen the financial technology market (Fintech Global, 2022). The importance of recognizing the potential for export diversification in Africa and the synergies between financial technology and the protection of property rights could not have been overemphasized.

Nonetheless, financial technology does not come without risks. Due to the innovativeness, opacity and complexities associated with financial technology business models, with which users may be unfamiliar, there is often a heightened risk of loss from fraudulent activities or misconduct by operators and/or other third parties. Financial Stability Board (2017) identified several risks to financial stability and customer protection related to the adoption of financial technology, especially in markets where appropriate regulatory frameworks and supervision mechanisms

are not well established. Some of the identified risks are as follows: poor governance or process control, which can disrupt provision of financial services or critical infrastructure; cyberattacks on financial activity and risk contagion effects on other interconnected financial institutions; uncertainty concerning liability for losses, especially in the absence of sound legal and regulatory arbitration systems, which can negatively affect the confidence of investors and businesses in the system; and excessive volatility of some financial technology services or business models, which can easily alter the overall functioning of asset and credit markets (Financial Stability Board, 2017). Policies and regulations relating to financial technology have not yet been established in most African countries, which limits the ability of jurisdictions to efficiently tackle these risks, thus reducing the prospects to realize the diversification-inducing potential of financial technology and alternative finance (UNCTAD, forthcoming-b).

As firms gain greater and more affordable access to lines of credit or loans from financial institutions, there will be a greater likelihood of an increasing number of exporting firms entering new markets (extensive margin) and a higher volume of products exported by firms (intensive margin), although the intensive margin effect is relatively more significant (Box 10). Consequently, addressing some of the hurdles to seed and start-up financing for SMEs or putting in place legal frameworks and regulatory infrastructure that can foster tailored innovative financing structures and instruments for SMEs will be important enabling factors for export diversification. Regulation is essential in protecting both the financial industry and customers. However, regulation is often compounded by financial innovation. An innovation, though positive, introduces new vulnerabilities into the financial system, which if not checked, can disrupt the system. In developing countries, regulation has become stricter because of resource scarcity and limited capacity. The economic impact of the pandemic and the surge of financial technology tools and transactions to adapt to the changing global environment or build new foundations for recovery has also raised the risks of unregulated financial technology, with potential threats to business and consumer protection. Some innovations in regulation in response to increasing financial innovation are discussed in chapter 3.2. When accompanied by appropriate regulatory frameworks, financial technology can increase SMEs' access to long-term financing by helping address the asymmetric information problem inherent in financing decisions for SMEs, so that funds can also flow more readily into this traditionally neglected but promising sector. Stronger protection of property rights and rule-based governance, in addition to guaranteeing a level playing field for enterprises – especially SMEs – to compete, are prerequisites for promoting export diversification.

3.2 Unlocking financial services potential for export diversification

The growing demand for swift, simplified commercial lending processes has resulted in many banks and financial institutions adopting digitalization to modernize their commercial lending business (The Business Research Company, 2021). Digitalization enables banks to target new customer categories and offer customer-centric solutions, which brings about improved efficiencies in the commercial lending business. It also leads to improved access to finance and credit, which can otherwise be a complex and slow process, especially for SMEs. The debilitating effects of the pandemic have given new impetus to the digitalization of businesses through the adoption and increased use of emergent digital technologies, such as artificial intelligence, the Internet of things, big data, blockchain, C-band fifth generation –commonly known as 5G – three-dimensional printing, robotics, drones, gene editing, nanotechnology and solar photovoltaics. These technologies do not exist in many African markets, but have the potential to boost firm productivity, promote job creation, expand trade and competitiveness, and foster economic diversification (Economic Commission for Africa, 2020).

Although progress towards digitalization has been slow and uneven across economies in different development stages and across sectors, digital trade and financial services markets are emerging in Africa. Globally, trade is increasingly being digitalized, with business-to-business e-commerce transactions that are valued at over \$15 trillion annually, and business-to-customer transactions, a further \$1 trillion (Statista, 2022). African e-commerce is also growing rapidly, estimated at an annual growth rate of 18.07 per cent (compound annual growth rate 2022–2025), resulting in a projected market volume of \$72 billion by 2025 (Statista, 2022). The overall digital economy in Africa is expected to grow to over \$300 billion by 2025, as a result of massive mobile penetration (McKinsey and Company, 2013).

To meet cross-border e-commerce needs, regional economic communities in Africa have been providing solutions through regional payments systems such as the Common Market for Eastern and Southern Africa Regional Payment and Settlement System, the East African Payments System, and the Southern African Development Community Integrated Regional Electronic Settlement System. At the continental level, under the framework of the African Continental Free Trade Area, Afreximbank has been developing a pan-African payments and settlement platform, which is expected to support cross-border payments in which sender and receiver transact in their local currency. Going forward, African countries will need to implement policy measures to

ensure that they reap the benefits of digitalization. This could include, among others, formulating digitalization plans across sectors that reflect a country's level of economic development; building capabilities and establishing enablers for sectoral digitalization; and promoting collaboration between industry, consumers and government to create an environment that is conducive to the uptake and usage of digital applications.

Facilitating digital trade and finance through supportive infrastructure and platforms is vital to the private sector. Through digital transformation, supported by initiatives that aim to ease doing business, deepen domestic capital markets and crowd-in private capital, major strides will be made in unlocking the potential of financial services and intensifying the role of SMEs as a driver of export diversification.

3.2.1 De-risking financing for small and medium-sized enterprises

In many African countries, SMEs' access to finance, through traditional financial institutions such as commercial banks, is inhibited by high capital requirements, liquidity frameworks and leverage ratio frameworks, thus reducing opportunities for long-term and high-yield credit lines. The rise of alternative lending markets, which provide funds to businesses without having to go to a traditional bank, creates opportunities to bridge the SME financing gap. However, this booming market is not risk free. As previously noted, the lack of regulation and universal standards in some of these non-bank lending markets, such as financial technology, can pose potential risks and challenge the expected outcomes of facilitating and diversifying finance, especially for SMEs. The mechanisms and other considerations that could help mitigate the risks of SMEs' access to both traditional and alternative finance are outlined below.

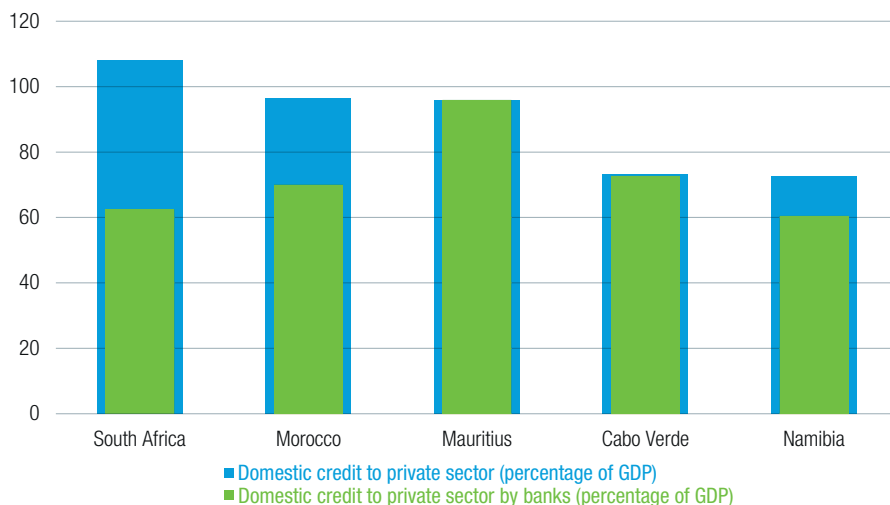
Lending to SMEs through traditional financial sources, such as the banking sector, is often characterized by high interest rates and transaction costs, which affects the affordability of a bank loan or line of credit. In many instances, the lack of credit history, poor financial backing, limited business experience and low levels of business diversification make SMEs riskier to lend to or invest in than larger corporations. Inadequate access to bank credit can stifle the SME sector's potential contributions to overall economic growth and employment creation. Although the size of loans to SMEs (measured here by domestic credit to the private sector as a share of GDP) has been growing in Africa, reaching 28 per cent of GDP in 2020, it remains small, especially when compared with other regions and economic groupings. The East Asia and Pacific region leads, with an SME loan-to-GDP ratio averaging 171.6 per cent in 2020, followed by members of the Organisation for Economic Co-operation and Development (160.5 per cent),

Europe and Central Asia (96.1 per cent), and Latin America and the Caribbean (59.8 per cent) (World Bank, 2022). Within Africa, there are considerable disparities among countries, with South Africa leading the region with an SME loan-to-GDP ratio of 107.8 per cent in 2020, followed by Morocco (96.3 per cent), Mauritius (95.9 per cent), Cabo Verde (73.2 per cent) and Namibia (72.5 per cent). The same countries rank the highest in terms of access and affordability of financial resources provided to the private sector by banks (Figure 26). In countries such as the Democratic Republic of the Congo, the Gambia, Sierra Leone, South Sudan and Zimbabwe, the volumes of SME loans are low, accounting for less than 10 per cent of their contribution to GDP.

In the African countries with the largest volumes of SME credit, the affordability of access to bank lending by the private sector is mainly attributed to policy measures aimed at supporting the growth and competitiveness of SMEs and innovative financing mechanisms aimed at mitigating the risks that banks and other financial institutions assess and thus factor into their decision to provide credit to firms. In those countries, the financial sector ecosystem (financial institutions, non-financial institutions, regulators and central banks) provided SMEs with specialized financial and non-financial products and services and facilitated a conducive business environment for lowering business costs

Figure 26

Lending to small and medium-sized enterprises in selected African countries, 2020



Source: UNCTAD, based on data from the World Development Indicators database (World Bank).

and improving overall productivity. Some Governments have established loan-guarantee programmes for small firms to address a perceived market failure in SME financing by targeting viable business propositions that lack an established track record or collateral.

Development banks, including national and regional development banks, can also play a key role in facilitating SMEs access to finance by providing loans or equity, as well as financing and risk guarantees for business development purposes or to support export-oriented firms in the agriculture and manufacturing sectors. In addition, development banks have the particular advantage of having a diversified portfolio and being relatively well capitalized, which enables them to secure loan and revenue guarantees and provide local currency credit to SMEs (especially in the case of national development banks). This reduces the risk of currency mismatches and other risks inherent to the profiles of SMEs in Africa or the environment in which they operate (Economic Commission for Africa, 2020).

Another de-risking mechanism for SME financing is risk pooling, for example a two-tier structure of credit supplementation for SMEs. Under such a scheme, financial institutions are provided with credit guarantees on the repayment of SME loans; in return, SMEs pay guarantee fees to the entity providing credit guarantee to secure credit guarantees and access financing. Such mechanisms became even more relevant during the COVID-19 pandemic and the economic setbacks and financial distress it has brought to countries and businesses. In South Africa, for instance, the Government (National Treasury, South African Reserve Bank and Bank Association South Africa) in May 2020 launched a R200 billion (about \$13.7 billion)²⁸ COVID-19 loan guarantee project for SMEs as part of its COVID-19 response and economic stimulus package (Government of South Africa, 2020a). In March 2022, the Government of South Africa introduced a new R20 billion (about \$1.34 billion)²⁹ business bounce-back project aimed at supporting SMEs that suffered distress caused by the pandemic (Government of South Africa, 2020b). The project will include a business equity-linked loan guarantee and small business loan guarantees that will facilitate access for qualifying non-bank small and medium loan providers.

Some countries have also adopted export credit insurance policies or established export-import facilities to help exporting firms cover the commercial and political risks of default-on-credit sales by a buyer, or help exporters, particularly SMEs, to access trade credit insurance services and therefore better access trade finance. Some of the added advantages of the export credit insurance scheme include facilitating advance cash

²⁸ Exchange rate (at time of writing): 1 South African rand is equivalent to \$0.068.

²⁹ Ibid.

payment, letters of credit and other required documentation for securing export revenues. Box 11 presents the example of Mauritius. In Ghana, for instance, the Government in 1994 established the Exim Guaranty Company to provide credit guarantees and general financial risk management solutions for SMEs. In 2016, the company was merged with the Export Finance Company and the Export Trade, Agricultural and Industrial Development Fund to establish the Ghana Export-Import Bank (Ghana Exim Bank, 2022). In Ghana, the SME sector accounts for close to 92 per cent of enterprises, contributes to about 70 per cent of GDP and provides close to 85 per cent of jobs in the country (Li et al., 2021). Given the importance of SMEs in the Ghanaian economy and their potential to drive diversification and structural transformation, some of the measures implemented by the Government of Ghana will significantly contribute to addressing SMEs' credit constraints, improving access to finance and enhancing their competitiveness and market access.

Box 11

Mauritius: The role of government in facilitating lending for small and medium-sized enterprises

In Mauritius, SMEs make up about 99 per cent of all establishments operating in different sectors of the economy. They represent about 40 per cent of GDP and 56 per cent of employment. According to the latest census of economic activity conducted by Statistics Mauritius, the top three sectors in which SMEs operate on the island are wholesale and retail trade (31.5 per cent), traditional agriculture (16 per cent) and transport and storage (14 per cent). The wholesale and retail trade (low-end value chain services) alone contribute to more than 30 per cent of total employment. Factors that have contributed to the growth of SMEs in this country include the availability of attractive financing, favourable economic conditions, competition, government policies and regulations, and technology. The Government of Mauritius has put in place various policy measures to support the growth of SMEs, facilitate access to finance and enhance their competitiveness. Some of these initiatives include the Small and Medium Enterprise Development Authority, aimed at supporting and facilitating the development of local SMEs; the State Investment Corporation, an investment arm of the Government set up to provide funds for the realization of high-growth entrepreneurial ventures and to assist businesses in attaining industry leadership positions; Enterprise Mauritius, which helps local businesses expand into regional and international markets and meet the challenges of international competition, including advice on technical barriers to trade and sanitary and phytosanitary requirements; and Maubank, a State-owned company that operates retail, SME and corporate banking businesses locally and internationally, and provides dedicated and specialized SME banking solutions. The vision of the Government of Mauritius for the SME sector is clear, that

of developing “a vibrant export-oriented SME sector to be the economic backbone of Mauritius’ sustainable export growth”.

The financial ecosystem in Mauritius has also contributed to the growth and role of SMEs in the economy. The banking sector provides a wide array of specialized and affordable financial services for the private sector, including fund administration, custodian services, trusteeship, structured lending, structured trade finance, international portfolio management, investment banking, private client activities, treasury and specialized finance. By positioning itself as a viable financial technology platform with a stable business climate and well-established corporate governance culture, Mauritius is able to attract foreign and domestic investments and provide access to finance for SMEs (both local and in other jurisdictions). The depth of the financial sector in Mauritius also provides promising opportunities for spillover into other segments of the economy, and sustainable growth businesses and services.

Source: UNCTAD, based on Government of Mauritius and International Trade Centre, no date; Roopchund, 2020; Statistics Mauritius, 2020.

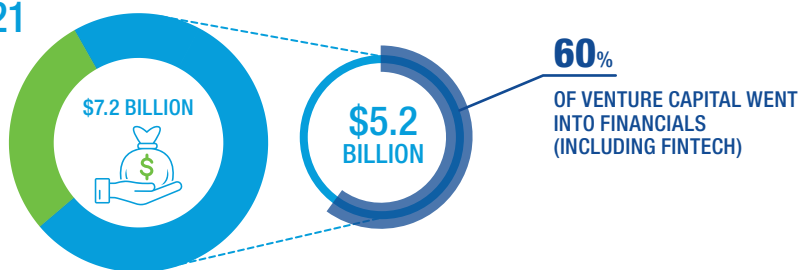
3.2.2 Facilitating innovations in private sector finance

The low-risk appetite of banks to finance SMEs and the high borrowing costs that SMEs must bear due to insufficient collateral or poor visibility of their transactions reduces their access to affordable traditional financial services. However, there are a wide range of innovative funding mechanisms available to SMEs that can better meet their financial needs and support their business development and export targets. In addition to guarantee schemes and other risk-sharing mechanisms, there are other innovative financing structures and instruments that can support firms raising money for start-up, growth, productivity and export purposes. These include private equity, venture capital, business angels and financial technology. Mobile telephony and mobile money services have taken root in many African countries, spreading into previously unbanked areas and markets. As of 2017, over 50 per cent of the 282 mobile money service providers in the world were located in Africa (McKinsey and Company, 2017). Significant advances in mobile banking and marketplace lending are fuelling the growth of SMEs in Ghana, Kenya, Rwanda, South Africa and the United Republic of Tanzania. In Kenya for instance, digital transactions account for about 60–70 per cent of bank equity transactions, and M-Shwari, a mobile banking service, provides 80,000 consumer loans on a monthly basis (Economic Commission for Africa, 2020).

Equity and debt-financing platforms for micro, small and medium-sized enterprises such as crowdfunding and peer-to-peer lending are also emerging. By facilitating the raising of

funds through the Internet, crowdfunding platforms enable firms to raise equity or debt finance. Peer-to-peer lending or crowdlending is also an online platform that matches lenders to borrowers in the online space and thus facilitates SMEs' access to finance. In Africa, there are few crowdfunding and crowdlending activities, due to low Internet penetration, high Internet service costs and weak regulatory structures and standards. Some promising peer-to-peer lending platforms in Africa include Kiakia,³⁰ a Nigerian-based peer to peer lending platform that provides small-scale private and business loans with low interest rates (0.80 per cent) and short duration (seven to 30 days); and RainFin,³¹ a South African-based peer-to-peer lending platform that enables borrowers to access affordable debt capital (at an annual percentage rate starting from 10.25 per cent for a period of six to 24 months) and investors (institutional and retail) to access a new asset class, that is, alternative credit, thereby earning attractive, fixed income returns. With the recent uptake of peer-to-peer lending and crowdfunding platforms, total lending volumes increased by about 300 per cent, and the market is estimated to reach \$2.5 billion by 2025.³² Pezesha,³³ a Kenyan-based financial technology platform, which also connects underserved small and medium-sized businesses with working capital from banks, microfinance institutions and other financial institutions, has been growing by 50 per cent annually with \$1 million disbursed between 2016 and 2020 (Platform Africa, 2021). Peer-to-peer lending platforms have the potential to unlock SMEs' access to finance, thus helping close the funding gap and supporting the growth of SMEs.

Venture capital, critical for SMEs, accounted for **\$5.2 billion** of the **\$7.2 billion*** private capital investment in 2021



*Source: African Private Equity and Venture Capital Association (2022b).

³⁰ See <https://kiakia.co/> (accessed 13 May 2022).

³¹ See www.rainfin.com/ (accessed 13 May 2022).

³² See www.platformafrica.com/ (accessed 13 May 2022).

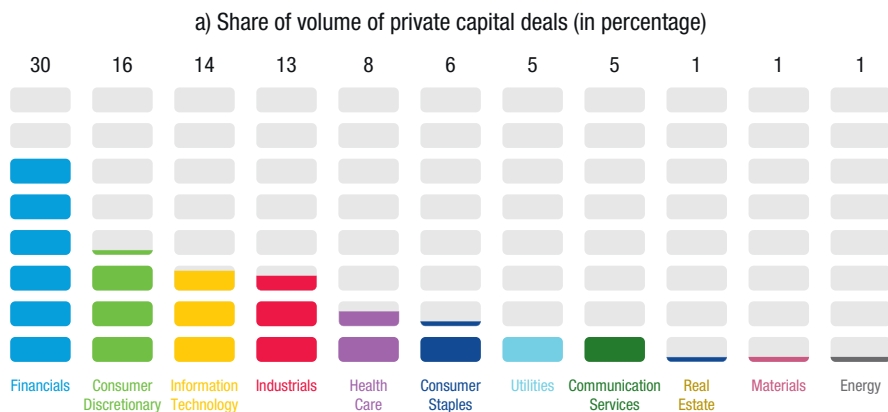
³³ See <https://pezesha.com/> (accessed 13 May 2022).

Private capital investment, such as private equity funding, venture capital or private debt, is another important source of financing for SMEs in Africa, especially those with technology orientation and good opportunities for growth. Start-up companies and small enterprises particularly attract the interest of venture capital firms that invest in high-risk businesses with a potential for exponential growth, expecting to obtain a high return on their investment by acquiring a start-up or a small business or by exiting and selling off stakes in an initial public offering. Using the equity financing mechanism, firms raise capital in exchange for an ownership stake. This mechanism can be risky for both the SME concerned and the equity investors, since the investors' reward (return on investment) is tied to the SME's success, and the SME has to cede some control over entrepreneurial decision-making. However, the benefits of equity funding and venture capital with specialized investments according to a firm's stage of development (start-up, product development, revenue generation, profitability) or by round (seed, first, second or later stage) go beyond providing working capital or external financing. Other benefits include building business and institutional knowledge and having the potential to increase companies' success and growth rates and to support enterprise development in Africa. Despite the difficulty in accessing financing through private equity investment and venture capital, private capital investment on the continent is flourishing: the number of private capital transactions reached a record high of 429 in 2021, valued at \$7.4 billion, an 85 per cent increase over 2020 (\$3.4 billion) (African Private Equity and Venture Capital Association, 2022a). More than half of the private capital investment transactions recorded in 2021 were concentrated in venture capital, corresponding to a total value of \$5.2 billion raised in 650 transactions, from 604 companies (African Private Equity and Venture Capital Association, 2022a). The industry that attracted the most interest from private capital investors were financials (30 per cent of the volumes of private capital transactions in 2021), consumer discretionary (16 per cent) and information technology (14 per cent) (Figure 27). The prominence of these industries reveals a large contribution to the funding and growth of technology and technology-enabling companies, which characterizes a growing number of start-ups and SMEs in some African countries. About 60 per cent of venture capital financing (transactions by value) in 2021 also went to financials, with a high concentration of transactions in financial technology companies (31 per cent of venture capital transactions by volume) (African Private Equity and Venture Capital Association, 2022b).

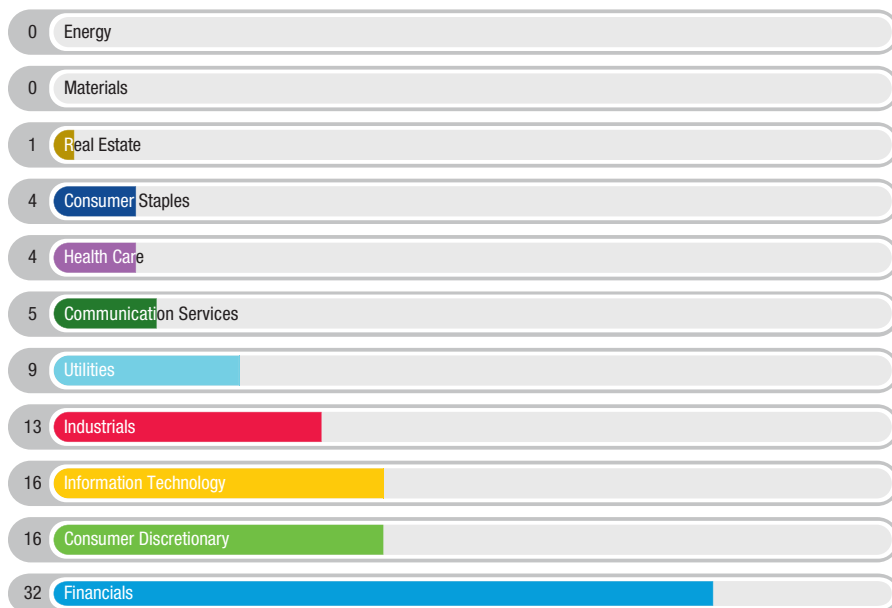
Where venture capital and private equity investment mechanisms cannot address the financing needs of start-ups or early-stage firms, other types of private capital investment or private debt, such as business angels, provide firms with capital for start-ups and early-stage equity. Business angels are individuals or private entities with

Figure 27

Private capital activities in Africa, by industry segment, 2021



b) Share of volume of venture capital deals (in percentage)



Source: UNCTAD, based on data from African Private Equity and Venture Capital Association, 2022a and 2022b.

a vast personal fortune and extensive experience in the industries. They invest their own money in start-ups or micro and small companies, with no family connections, in exchange for a minority equity stake in the companies they invest in and an active involvement in the portfolio of the companies or related investment decision-making processes (Mason, 2009). According to Mason (2009), business angels are often willing to undertake small-ticket equity deals that otherwise may have been considered by investment funds as being not cost-effective or investment grade due to high contracting due diligence and monitoring costs associated with start-up and early-stage transactions. The number of angel investors in Africa is on the rise, becoming another key player that takes the necessary risk of investing in a new business or an existing business that faces challenges raising money. Some African angel investors include TBL Mirror Fund (targeting East African SMEs), West African Synergies (targeting West African SMEs), Jacana Partners (a pan-African private equity company), eVentures Africa Fund (investing in African SMEs active in digital media) and Invenfin (providing start-up capital to entrepreneurs to fund the commercialization of their intellectual property internationally).

The adoption of innovations in private sector finance and the uptake of innovative funding mechanisms by SMEs can be limited by various factors, the most critical ones being the lack of financial education among SMEs, poor financial infrastructure, and legal and regulatory uncertainties. The next section will explore mechanisms through which these barriers to SMEs finance can be addressed more effectively.

3.2.3 Addressing the legal, regulatory, and financial infrastructure uncertainties

The adoption of innovative financing sources by SMEs in Africa has increased in recent years. However, uncertainties surrounding some of the legal structures and regulatory frameworks for traditional and non-traditional financing can affect SME lending and reduce the appetite for SME funding. For instance, the lack of or limited protection for minority shareholder rights discourages equity investments, and uncertainties concerning the regulatory status of new financial institutions and innovative products can frustrate financial innovation. In the banking sector, for instance, legal structures and frameworks such as the Basel international banking regulations, which require that higher risk weights be allocated for SME loans, can result in higher SME loan interest rates and reduced SME loan volumes (Deloitte Southeast Asia, 2015).

Although the banking sector continues to dominate the African financial system, boosted by economic growth and high profitability levels, change in the financial

landscape, with growing competition from non-bank financial institutions and a diversifying investor base with appetite for more specialized financial products, has contributed to alternative finance's increasing presence on the continent. In 2020, the average return on equity of African banks stood at 7 per cent, compared with 14 per cent in 2019, a dip that could be explained by the impact of the COVID-19 pandemic – fewer economic activities, heightened unemployment and higher risks on bank loans (McKinsey and Company, 2021). To reinforce stability, build resilience and strengthen their footprint across Africa, banks are also adopting new financial technologies, leveraging digital financial services and modelling regulatory frameworks that can help them better meet the investment needs of unbanked populations and businesses, as well as enhance financial inclusion. However, the new drive to scale up technology in the banking sector for productivity gains and future growth could be challenging with regard to regulations and risk management. For instance, any uptake in mobile banking will require adopting newer-age technology platforms and actively engaging in new ecosystems, including complex arrangements at the governance, business and technical levels with non-bank institutions such as digital financial services providers or telecommunications operators. To facilitate this interconnection between banks, mobile money providers and customers and commercial players, a certain level of interoperability³⁴ between the different systems and regulations need to be in place to facilitate financial transactions or payment systems. When the interoperability arrangements between banks, digital financial services providers and other third parties (such as aggregators) are limited or uncoordinated, regulatory oversight can be impacted negatively, resulting in a higher cost of access to digital financial services. Building effective interoperable systems also contributes to effective governance, clear operating rules, and safe and reliable connections, which can help prevent fraudulent activities and other risks in digital financial transactions.

The absence of robust regulations in many financial technology markets has also been a major concern among institutions, regulators and markets participants. Such markets are constantly evolving, with changes and innovations in financial instruments and mechanisms happening more frequently than in the traditional financial sector. Therefore, regulating financial technology requires continuous adaptation and risk mitigation, which regulators may find challenging. For instance, the rapidly growing use of technology in finance can exert pressure on regulators to switch from regulations designed for human behaviour to regulations to supervise automated processes. On the other hand, stringent

³⁴ Interoperability is the ability of different systems to connect with one another (Consultative Group to Assist the Poor, 2016).

regulations and compliance requirements can discourage the further development of financial technology to provide alternative financial services to those who cannot obtain such services from traditional services. Therefore, efforts should be geared towards establishing an optimum regime that does not hinder innovation and ensures the protection of the financial system. For instance, regulatory sandboxes, which are safe, supervised environments created by regulators to enable market participants or financial technology companies to test new financial services or models under close supervision, are used to ensure safeguards and customers protection (Economic Commission for Africa, 2020). In Africa, the use of regulatory sandboxes is growing – 10 countries have at least one operational regulatory sandbox (Cambridge Centre for Alternative Finance, 2021). Other innovations in financial technology regulation such as regulatory technology and innovation offices are presented in box 12.

Box 12

Innovations in the financial regulatory environment

Regulatory technology: A significant innovation affecting the regulatory environment is regulatory technology. It is defined as the deployment of technology to manage regulatory procedures in the financial sector. Regulatory technology helps regulators to effectively exercise regulatory oversight, and financial firms, to improve reporting and regulatory compliance. Regulatory technology companies use cloud computing to assist firms in automating compliance tasks and reducing operational risks associated with meeting compliance and reporting obligations. With the use of regulatory technology, regulators and financial institutions can manage regulatory risks emanating from the digitalization of payments and innovations. In addition, they can readily combat challenges such as cybercrime, data breaches, money laundering and other related fraud. Regulatory technology uses big data and machine learning to monitor online transactions, including those that are off the grid of the formal financial system in real time, detecting and reporting anomalies instantaneously to regulators and clients for the early detection and prevention of fraud. This is a step up from traditional regulatory and compliance mechanisms, which are unable to monitor the underground online market. Thus, both regulators and financial firms benefit from the usage of regulatory technology.

Innovation offices: Increasingly, innovation offices are being established around the world to ensure that regulation keeps pace with financial innovation. Innovation offices provide clarification on regulations to financial firms that have introduced, or are about to introduce, an innovation. The primary aim of these offices is to foster collaboration between regulators and financial services companies so that they can mutually learn in an innovative environment in a manner that elicits appropriate regulatory responses to innovations. Innovation offices are easy to set up, as they do not

require prolonged regulatory or legislative changes. Examples of innovation offices around the world are the Financial Technology Enabler Group of Bank Negara Malaysia, the Netherlands Authority for the Financial Markets, the United Kingdom Financial Conduct Authority, the Estonian Financial Supervision Authority and the Financial Technology Hive of the Dubai International Financial Centre. Though the idea of innovation offices is spreading in many regions, it has yet to be adopted and operationalized in Africa. Thus, there is great potential for the adoption of this innovative regulatory approach in African countries to manage the fast-moving financial technology industry on the continent.

Innovation offices use strategies such as dedicated office hours; an exclusive telephone line; a dedicated email address, a website or designation of a case officer, or a combination thereof. Innovation offices offer several benefits, for example, fostering communication between regulators and innovators on a mutually beneficial basis, promoting informed and proactive policymaking and advocating a pro-innovation culture.

Sources: UNCTAD, based on Economic Commission for Africa, 2020; Financial Stability Board, 2017; United Nations Secretary-General's Special Advocate for Inclusive Finance for Development Financial Technology Working Group and Cambridge Centre for Alternative Finance, 2019.

Both innovative and conventional funding sources require a strong, functional and reliable financial infrastructure. Financial infrastructure is imperative for increasing financial access and transparency in the financial system, as well as improving financial system security, stability and governance. The lack of or poor financial infrastructure in many African countries (including branches, credit reference bureaus, collateral registries, securities settlement systems, digital financial infrastructure and remittances systems) limits SMEs' access to finance, as financial institutions are unable to, or do extend at high cost, traditional and new financial products and services to underserved SMEs.

These regulatory and infrastructure barriers and their impact on SME lending are not unique to Africa. In the European Union, the implementation of Basel III regulations resulted in a 20 per cent decline in SME lending. In South-East Asia, the low SME coverage by credit bureaus and registries, ranging from 11 per cent to 56 per cent, resulted in increased costs of SME credit risk assessment, making it untenable for financial institutions to service domestic SME markets effectively. About 50 per cent of SMEs in South-East Asia were unserved and underserved (Deloitte Southeast Asia, 2015).

3.3 Smart services for market access and export diversification of small and medium-sized enterprises

The importance of recognizing the synergies between financial services (including alternative financing products and services), business services (including exporting firms, seamless trade transactions and supply chains) and export diversification across all sectors cannot be overstated. However, to facilitate these synergies in the context of many African countries, innovative solutions and infrastructure should be in place. While some of the required support infrastructure and technologies may not necessarily be new, their low or inefficient utilization can weigh heavily on small businesses and diminish their efficiency gains. Moreover, the emergence of rapidly evolving technology-driven companies, business models, financing instruments, transactions, and production and supply chain processes require that the financial landscape in Africa and businesses be able to adapt to this fast-growing digital divide and become more competitive. Technology and smart services can provide conducive platforms for efficiently linking output and markets, enabling intermediate inputs of key intensive services in production that facilitate complexity and diversity of manufacturing outputs. While most of these digital innovations have strict financing and skill requirements, there are several innovative digital technologies that can be more easily leveraged by SMEs to increase their market access and effectively contribute to viable value chains within and across industries. In this regard, this section focuses on the need to further develop tools and processes that can have direct linkages with competitiveness at the firm and sector levels through enhanced product quality and diversity, increased efficiency in supply chain management and an overall net reduction in operational costs. These include software and mobile development, as well as financial technology.

3.3.1 Software development

Despite the dominance of global or large corporates in software development, the evolving complex technology needs of the manufacturing industries have enhanced the relevance of SMEs in the sector because of their high innovation capacity and increased flexibility in meeting rising demand at lower costs. Notably, the digital revolution has highlighted the importance of relevant software for almost all components of manufacturing firms, from managing inventory, risk and compliance, to supply chain

management so as to enhance their competitiveness. For instance, depending on the size of their operations, manufacturing firms might require computerized maintenance management system software that provides technicians with real-time maintenance information on the firms' assets that are essential in both production and supply chains (Labib, 2008). This kind of software is key to ensuring the optimal utilization of these assets with direct positive impacts on overall maintenance costs and the operational efficiency of firms. There are more types of computer-based related software that can be leveraged by SMEs, including computer-aided manufacturing management software, which centralizes manufacturing process data to directly link the manufacturing process with market requirements (Makris et al., 2014). In tandem with the specific firm needs being addressed, this software can be customized to directly link various stages of the manufacturing process, from design, processing and post-processing, with direct implications on labour productivity and overall efficiency and competitiveness of manufacturing firms.

Enhancing the productivity of manufacturing firms goes beyond the actual manufacturing process. How a company manages its accounts and human resources for instance, has equally significant implications on its overall costs and hence, on its ability to improve the complexity of its products and expand its product range. In this regard, accounts and human resources-related software have equal opportunities for productive SME engagement in the sector. Several SMEs in Africa already have proven skills and expertise in this regard. For instance, Ncube and Ondiege (2020) highlight several kinds of locally relevant software in demand in Kenya that have been developed by local entrepreneurs. The issues being targeted by these innovations across sectors include human resources, accounts and marketing. Overall, computer-based software can be directly installed within a company's information technology system to be run and managed using in-house resources, provided relevant training is provided by the SME concerned. In this context, where the operational cost of developing a software is not exorbitant, SMEs could be directly engaged by manufacturing firms, as they have a comparative advantage over large enterprises with similar skills and expertise in terms of cost. Nevertheless, where customization of such services to the needs of the company is contingent on considerable financial requirements, SMEs with the required competencies can still leverage the ICT outsourcing market, as they remain competitive in terms of cost relative to large enterprises competing in the same outsourcing market. Moreover, ICT outsourcing models with training components further enhance the market access of SMEs with software development skills. However, to effectively leverage the software development market, African SMEs will need up-to-date skills and qualifications to

match the evolving complex technology needs, which might not always be provided by partners who are looking to reduce their operational costs. Hence, they could remain excluded from such potential markets and struggle to effectively exploit their important role in African trade and growth.

3.3.2 Mobile application development

Digital platforms and mobile applications are increasingly becoming central to both intra- and inter-firm business processes and transactions. They provide reliable platforms that diminish market information asymmetries and enhance the reliability and efficiency of business-to-business and business-to-consumer transactions. Box 13 highlights the example of a business-to-business mobile platform. Digital platforms and mobile applications can be used as effective tools to improve regional value chain linkages within and across sectors in Africa. The surge in mobile penetration across income groups and regions reflects the increased market for SME applications developers in Africa, particularly if the focus is on developing locally relevant applications in terms of content and language. The demand for locally relevant mobile applications is further fuelled by the trade gaps created by a lack of robust supporting infrastructure. This section focuses on the intersections of ICT and other sectors, identifies gaps that are being filled within and across value chains and reviews some success stories of SMEs in Africa whose mobile applications development has helped firms across industries boost their productivity.

Box 13

Kenya: Mobile-based cashless business-to-business platform

In 2014, Twiga Foods established a mobile-based cashless business-to-business platform in Kenya to decrease post-harvest losses that arise from handling, high transport costs and agricultural produce market information asymmetries. Through the mobile platform, the company collects relevant information from the smallholder farmers that is transmitted to the vendors in real time to ensure there are no significant gaps between supply and demand. The platform provides registered farmers with a guaranteed market for their produce, while vendors have a reliable supply without additional storage, processing and transportation costs to both the smallholder farmers and vendors. Registered farmers drop their produce at their nearest collection centres, and accounts are settled by the platform using mobile money within a day of delivering their produce. Based on the orders from

the vendors placed through the platform, the company makes deliveries and receives payment from the vendors through mobile money as well.

There are many benefits that accrue to smallholder farmers and vendors through the networks. First, farmers have easy access to a wider market, as they are not restricted by distance. Second, the business model reduces transportation costs for smallholder farmers (collection centres are within the catchment areas) and vendors (regardless of distance, the company defrays the transportation costs from its collection centres to vendors). Twiga Foods transmits information on farm produce to potential buyers in real time and covers storage and processing costs at the collection centres, thereby further reducing farmers' operational costs. Moreover, the quality of the farm produce is preserved with positive impacts on post-harvest losses and the overall price for the final consumer. Similar models and innovations can be adapted and used to seamlessly connect different players in various value chains within and across sectors. For instance, instead of just linking farmers and vendors, as in the company model, the business-to-business mobile application can be used to link multiple players: producers (smallholder farmers), processors (agri-industries), vendors and other consumers, such as hotels and industries.

Sources: UNCTAD, based on Twiga, 2022 and other sources.

Overall, the ICT sector is highly competitive, with onerous financial start-up and operational requirements. To grow and effectively contribute to the sector's sustainability, SMEs should be highly innovative seeking opportunities that are readily available across subsectors, particularly in areas that are often overlooked by multinational enterprises, while being aware of infrastructure deficits and associated access costs. In leveraging these opportunities, SMEs can either work independently, based on their working capital and diversity of expertise, or they can partner with other SMEs to enhance their skills base and offer competitive services to domestic and international clients. Depending on the skills base of the joint ventures, SMEs have a chance to compete with larger firms in the market, as lower costs of their services accruing from low operational costs, *inter alia*, works to their advantage. In addition, SMEs can leverage partnerships with companies that outsource specialized services, notwithstanding the associated high demand for competitive services in terms of quality and cost of such partnerships. Lastly, affiliation with incubators and hubs has proven effective in harnessing and developing relevant skills for local entrepreneurs, as they provide the desired space for mentoring and sharing experiences and knowledge in the sector (Ncube and Ondiege, 2020).

3.3.3 The potential impact of financial technology on small and medium-sized enterprises

Financial technology firms have revolutionized the financial services sector, providing access to financial services where traditional financial institutions have limited presence. Although financial technology represents slightly over 1 per cent of the global financial services market, projected to reach \$26.5 trillion in 2022 (The Business Research Company, 2021), there has been strong growth in financial technology investments, reaching \$55.3 billion in 2019 (Finance Online, 2022). The global financial technology market is projected to grow at a compound annual growth rate of 23.6 per cent from 2021 to 2025 (TechSci Research, 2021). Globally, digital payments, personal finance and alternative lending are the top three financial technology segments by transaction value. The Asia–Pacific region has a 40 per cent financial technology lending market share, followed by North America (28 per cent) and Europe (27.7 per cent) (Reports and Data, 2019). A leading driver of the financial technology market is mobile payment services, which process an average \$1 billion worth of transactions every day (Mordor Intelligence, 2021). In Africa, the use of mobile payment services has expanded in recent years. The total value of African mobile financial services transactions reached \$495 billion in 2020 (Boston Consulting Group, 2020). This growth was due to increasing Internet penetration and a high concentration of mobile money users. The growth of financial technology-powered financing models opens new avenues of funding for businesses and can help address the credit constraints faced by exporting firms.

Financial technology companies operating in the SME lending space are usually classified as the following categories (International Finance Corporation, 2017):

- Marketplace lending.
- Supply-chain financing.
- Non-cash merchant payment.
- Alternate data, advanced analytics and underwriting process automation.

Marketplace lending enables individuals or micro, small and medium-sized enterprises to borrow through online platforms that connect lenders and investors with borrowers. In some circumstances, the platforms provide direct loans to the eventual beneficiaries and handle balance-sheet risks, whereas, in others, they simply connect enterprises in need of finance with investors who are willing to take on more risk (International Finance Corporation, 2017). These platforms offer people and small and medium-sized

businesses an alternative option to obtain credit, and investors, a chance to lend directly (World Bank, 2018). For example, despite the encouraging and rapid access and use of financial technology by a significant segment of the rural and urban populations in Burkina Faso, the country has not yet succeeded in maximizing entrepreneurship benefits, as informal finance is considered to be a stronger driver of entrepreneurship (Kedir and Kouame, 2022).

Financial technology is also changing the cross-border payment landscape. In conjunction with the African Union and the African Continental Free Trade Area, the African Export-Import Bank, also known as Afreximbank, unveiled a financial technology-enabled pan-African payment and settlement system to promote cross-border transactions across the continent. Prior to the launch of the system, intra-Africa trade settlements required a third currency and a non-African correspondent bank, resulting in an estimated yearly loss of close to \$5 billion, subsequently impeding trade in the region. The system is expected to save African enterprises \$5 billion in transaction costs each year and accelerate export diversification as a result of the creation of a single market throughout Africa by the Free Trade Area. Investment in other innovative platforms and digital trade infrastructure that can ease access to information and data on trade and finance transactions in Africa will significantly support and leverage the potential role of firms in driving diversification in sectors and promoting sustainable trade (Box 14).

In focus: The potential power of blockchain

Blockchain is defined as a ledger (data record technology), a large database that can be shared simultaneously with all its users. All users are equally holders of this ledger, and all users can enter data, according to specific rules set by a computer protocol secured effectively by cryptography. There are two types of blockchain technologies: public, open to everyone (for example, Bitcoin, Ethereum and Tezos) and enabling information-sharing across a peer-to-peer network; and private, accessible only to authorized and known users of a particular company or small network (Economic Commission for Africa, 2020). Banking and payments use a hybrid form of public and private blockchains called a consortium or federated blockchain, which operates more like a private blockchain but with limited access to a particular group, thus reducing the risks of a single entity controlling the network. This type of blockchain is also used for supply chains.

Blockchain technologies have been mostly known through their use by the cryptocurrency Bitcoin, the first peer-to-peer electronic cash system developed as a non-State form of

digital money in 2009.³⁵ Given the high-risk exposures arising from virtual currencies (cryptocurrency) and the poor anti-money laundering and fraud prevention practices, the use of this self-regulating virtual currency is becoming increasingly contested in markets. Moreover, that these virtual currencies use blockchain as a protocol on which to operate can also affect the credibility of or trust in blockchain technologies.

However, blockchain technologies have other attributes that can help expand access to finance for SMEs and facilitate trade transactions. Besides providing platforms for the easy and fast transfer of assets, such as currency, securities, shares, bonds and derivatives, the application of the blockchain as a register, for instance, can facilitate better traceability of products and assets. Many of the innovative and alternative financing products and instruments such as online and automated payments, crowdfunding and crowdlending, which are facilitating the expansion of SMEs' access to finance, are run on blockchain applications, thus contributing to the financial inclusion of SMEs and other unbanked groups and populations (Economic Commission for Africa, 2017). Moreover, blockchain can be used to automatically carry out the terms and conditions of a contract without requiring human intervention once started, also known as smart contracts (Blockchain Council, 2022). Smart contracts are tamper-resistant, self-executing and self-verifying applications that provide error-free processing of insurance claims, smooth peer-to-peer transactions, streamlined know-your-customer processes and transparent auditing services (Business of Apps, 2021).

Blockchain technologies could also support SMEs' access to finance or facilitate trade transactions by providing a platform or an application that enables the swift and simple electronic transfer of money between currencies and countries. With no exchange fees, blockchain could reduce the cost of SMEs' access to global finance. This would enhance the efficiency of the investment and credit ecosystem by reducing transaction times and improving currency exchange. Blockchain can also contribute to production, supply chains and access to markets by facilitating different stages of the supply chain, including procurement, information on the origin, quality and costs of goods, and closer access of SMEs to corporate clients. The use of blockchain applications facilitates the tracking and management of goods and services across supply chains, shipments and deliveries in a transparent manner, which contributes to a firm's productivity and ensures the credibility of its products or services (in terms of identity, property rights and origin, for example) for its end users or customers (International Chamber of Commerce of Brazil, 2018).

³⁵ See <https://bitcoin.org>; accessed 17 May 2022.

The application of blockchain technologies in various areas could be a game changer in fast tracking the growth of e-commerce across Africa, scaling up trade finance and access to credit for SMEs, and propelling export diversification forward in the region (Business of Apps, 2021). These areas include online payment systems, easy and cost-effective access to alternative finance, traceability of products and transactions, smart contracts for the efficient delivery of goods and services, and intellectual property rights management systems. Box 14 features an initiative of a digital ledger platform to facilitate cross-border trade.

Box 14

Digitizing trade infrastructure in Africa through a digital ledger platform

The Smart Trade Africa Marketplace is a digital ledger platform that brings together all the elements of a trade transaction: finance, logistics, customs and taxes, regulation and insurance. It enables the entire trade value chain to have one channel of information and facilitates better economic visibility and decision-making. The platform incorporates cross-Africa trade protocols and the guidelines and legal and regulatory requirements of African Governments. The Marketplace drives structural change in the trade process by bringing all the players together onto a single platform, thus reducing the bilateral flows of information and documents.

By recording information on all trade transactions on the platform through single data sets driving each transaction, it gives a greater level of visibility on trade flow data in real time and enables enhanced feedback on the effects of government policy initiatives. The platform also provides greater efficiency of end-to-end trade process workflows and improves market access. Further, it allows a significant reduction in administration time and effort stemming from the duplication of processes and data entry errors and acts as a springboard for technological innovation and better financial participation across Africa. The platform will help drive government-led technology with greater visibility than before, providing an inclusive network across the African continent.

While its primary focus is to address challenges related to data visibility, the Smart Trade Africa Marketplace will also help African countries and the private sector overcome some of the barriers to trade transaction in the region: low investment, high costs of trade transaction, poor logistics and communications infrastructure, and multiple regulatory frameworks and technological infrastructures. The Marketplace can have a significant impact on the consolidation of Africa as a union as it strives to unlock the key to long-term, sustainable economic growth and development, and monitor trade in a practicable, scalable and digital manner.

Source: UNCTAD, based on Smart Trade Africa, 2022.

3.4 Conclusion

Finance as an enabler of private sector growth and industrial expansion is not a new phenomenon. It is widely acknowledged that the positive externalities of improved access to alternative finance and more particularly, the rapid growth in financial technology, can potentially contribute to the provision of financial services (Bollaert et al., 2021). In essence, this helps bridge the financing gap for SMEs to support export diversification. However, the development and deepening of financial product and services in Africa may not have yet reached the maturity level required to influence a paradigm shift in export expansion and diversification. The alternative finance market landscape in Africa has been dominated by mobile money services, which can be an effective gateway to financial inclusion among its unbanked population and small-scale enterprises. The potential for alternative finance to expand and upgrade the portfolio of financial products and services and offer more innovative firm-centric products that can sharpen operational efficiency and change the competitive landscape of SMEs in Africa should not be underestimated. However, alternative finance, especially financial technology, does not come without risks. Due to the innovation, opacity and complexities associated with financial technology business models, with which users may be unfamiliar, there is often a heightened risk of loss from fraudulent activities or misconduct by operators and/or other third parties. Most African economies lack the robust regulatory structures to efficiently tackle these issues and are thus less likely to realize the diversification-inducing potential of such structures. Moreover, the weakness of institutions can have implications for over-regulation and bureaucracy, all of which undermine the diversification agenda by negatively affecting investment and entrepreneurial activities. Policymakers may therefore acknowledge that rule-based governance and financial sector policies – including those related to financial technology – are largely complementary, and both are needed for the effective implementation of export diversification initiatives.

