Leveraging the Role of Property Catastrophe Reinsurance Markets

THE CASE OF INDIA, INDONESIA, MYANMAR AND THE PHILIPPINES

OECD

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Foreword

Insurance markets play an essential role in the financial management of disaster risks by encouraging proper risk management and providing a source of financing to respond to the damages and losses incurred by households, businesses and governments as a result of catastrophic events. The pooling of risks of many insureds by insurance companies allows for the diversification of those risks across regions, risks, and time, leading to a reduction in the aggregate cost of financial protection.

Reinsurance and capital markets can provide an additional layer of risk absorption capacity at a lower cost than can be achieved (in aggregate) by insurance companies individually. An OECD analysis on *The Contribution of Reinsurance Markets to Managing Catastrophe Risk* found that, in countries where a higher share of economic losses due to catastophe events were reinsured, the economy recovered more quickly after the event and had higher than projected GDP growth in years that followed – while those countries with lower levels of reinsurance coverage struggled to recover and faced a cumulative loss in output relative to pre-event projections.

Providing domestic insurers with the ability to leverage the capacity of international reinsurance and capital markets while addressing the potential counterparty, execution and liquidity risks that could arise requires the careful development of a regulatory and supervisory framework. The purpose of this report is to identify good practices and lessons from the approaches to providing insurance for catastrophe risks and catastrophe reinsurance oversight implemented in four Asian countries: India, Indonesia, Myanmar and the Philippines.

The report is based on discussions with insurance supervisors, primary insurers, reinsurers and intermediaries in each of the four countries. The development of this report has been possible thanks to a financial contribution from the Government of Japan. It would also have not been possible without the support of insurance supervisors and (re)insurance sector representatives in the four case study countries.

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Executive summary

Insurance markets play an essential role in the financial management of disaster risks by encouraging proper risk management and providing a source of financing to respond to the damages and losses incurred by households, businesses and governments as a result of catastrophe events. A number of studies have shown the positive impact that insurance coverage for catastrophe risks can have in reducing the economic disruption that normally follows disaster events – by providing a relatively quick source of funding for recovery and reconstruction and reducing the amount of losses that would otherwise need to be absorbed by households, businesses and government.

The pooling of risks of many insureds by insurance companies allows for the diversification of those risks across regions, risks, and time, leading to a reduction in the aggregate cost of protection and providing individuals and businesses with the financial protection necessary for making longer-term planning and resource allocation decisions. These diversification benefits are also achieved by the pooling of risks of many insurance companies through risk transfer to reinsurance and capital markets – providing an additional layer of risk absorption capacity at a lower cost than can be achieved (in aggregate) by insurance companies individually. The global nature of international reinsurance markets also allows for some portion of the losses from an event to be absorbed by international markets (and investors), thereby diversifying the burden away from the domestic financial system and reducing the share of losses that must be absorbed domestically. However, reliance on reinsurance (and/or capital markets) for managing exposure to catastrophe risks may involve counterparty, execution and liquidity risks for cedants. Addressing these risks requires the careful development of a regulatory and supervisory framework that allows domestic insurers to leverage the capacity of international reinsurance and capital markets while managing these risks.

This report provides an overview of the insurance coverage available for catastrophe perils in India, Indonesia, Myanmar and the Philippines as well as the regulatory and supervisory frameworks in place to govern the use of reinsurance for managing exposure to catastrophe risks. It examines the approach of insurance regulators and supervisors in each country to overseeing cedants' transfer of risk to reinsurance markets, including reinsurance programme review, quantitative retention requirements, capital treatment of risks transferred to reinsurance markets and access to alternative risk transfer arrangements. It also examines approaches to the oversight of reinsurance placements, including the authorisation of reinsurers that can assume risk from domestic cedants and the requirements imposed on reinsurance placements.

Based on consultations with insurance supervisors and (re)insurance companies and intermediaries in all four countries (and Singapore) as well as a policy framework for accessing international property catastrophe reinsurance markets developed by the OECD Insurance and Private Pensions Committee in 2019/20, this report provides an assessment of regulatory frameworks and supervisory practices. It includes a set of recommendations aimed at:

- Enhancing the quantification of catastrophe exposure, addressing underestimation of risk and supporting adequate pricing and insurance affordability in primary insurance markets;

- Strengthening oversight of cedants' risk transfer to reinsurance markets, including through the development of sound reinsurance and retrocession programmes, effective management of retentions, appropriate capital treatment of risk transfer and the development of frameworks for the recognition of alternative risk transfer; and
- Improving access to international reinsurance markets by amending requirements related to authorising reinsurers and reducing reinsurance placement requirements.

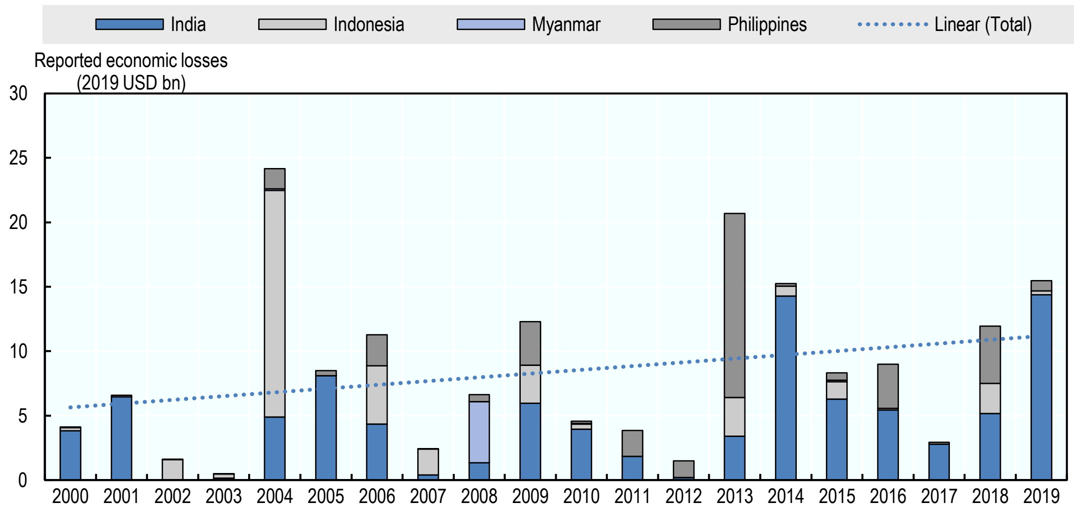
India, Indonesia, Myanmar and the Philippines are significantly exposed to natural catastrophes although individuals and businesses remain largely unprotected from the damages and losses that may materialise. In the context of a changing climate and continued economic development, all four countries will need to ensure that the insurance regulatory and supervisory framework facilitates the availability and affordability of insurance coverage and provides insurance companies with access to the risk transfer mechanisms necessary to manage their increasing exposure to catastrophe risks. Ultimately, greater access to international reinsurance markets may be necessary to provide domestic cedants in India, Indonesia, Myanmar and the Philippines with the reinsurance capacity that they need to properly manage their growing exposure to catastrophe risks.

1 Primary insurance for natural catastrophes

Exposure to natural catastrophes

India, Indonesia, Myanmar and the Philippines all face significant exposures to a wide variety of natural catastrophe perils, including flooding (river, coastal and flash flooding), earthquakes (and tsunamis), volcanic eruptions (with the exception of Myanmar), and tropical and convective storms and cyclones (although given its geographical location near the equator, Indonesia is not generally exposed to tropical cyclones). Since 2000, the four countries have faced approximately USD 8.4 billion in average annual reported economic losses from natural catastrophes (approximately USD 4.7 billion in India, USD 1.9 billion in Indonesia, USD 1.8 billion in the Philippines and USD 0.25 billion in Myanmar). Overall, the level of annual economic losses has increased since 2000, although with significant year-to-year variation (Figure 1.1).

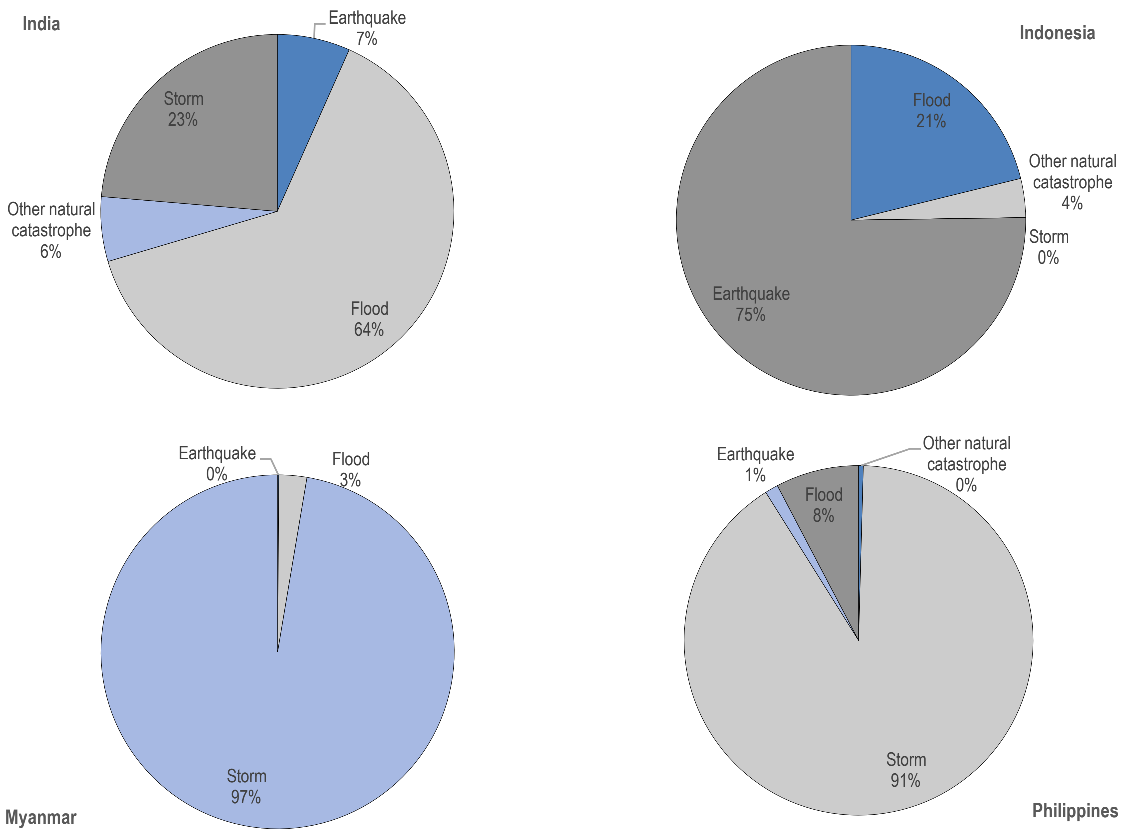
Figure 1.1. Reported economic losses from natural catastrophes (2000-2019)



Source: OECD calculations based on (Swiss Re sigma, 2020[1])

In India, floods have been the most significant peril since 2000 (in terms of the level of resulting economic losses) followed by storms with earthquakes only accounting for 7% of economic losses. In Indonesia, earthquakes have accounted for 75% of reported economic losses since 2000 with floods accounting for a further 21%. In the Philippines and Myanmar, storms have accounted for more than 90% of reported economic losses (91% and 97%, respectively).

Figure 1.2. Reported economic losses by peril (2000-2019)



Note: The losses are categorised by main peril (although many natural catastrophes involve two or more perils, such as floods or hail resulting from a storm). The "Other natural catastrophes" category includes the following peril categories: Cold and frost; Drought, bush fires, heat waves; Hail; and Other natural catastrophes (landslides and volcanic eruptions).

Source: OECD calculations based (Swiss Re sigma, 2020[1])

All four countries have faced significant (and devastating) natural catastrophes since 2000 (i.e. catastrophes with reported economic losses over USD 1 billion), including:

- In India, cyclones Jal (2010), Phailin (2013), Hudhud (2014), Vardah (2016), Gaia (2018), Fani (2019) and Matmo (2019), droughts in 2015 and 2016, the Chennai floods in 2015 and Karnataka floods in 2019, the Gujarat earthquake in 2001 and regular monsoon flooding (2004, 2005, 2006, 2010, 2013, 2014, 2017, 2018 and 2019);
- In Indonesia, fires related to land-clearing in 2015, floods in the Jakarta region in 2002, 2007 and 2013, major earthquakes in 2006, 2009 and 2018 and the devastating Indian Ocean tsunami in 2004;
- In Myanmar, Cyclone Nargis in 2008; and
- In the Philippines, typhoons Mindulle (2004), Durian (2006), Ketsana/Ondoy (2009), Haiyan (2013) Nepartak (2016), Haima (2016) and Mangkhut/Ompong (2018) as well as flooding in the Manila region in 2013.

A changing climate and continued economic development in the four countries are likely to continue to lead to increasing economic losses from natural catastrophes in the future.

Primary insurance market

Structure of the primary insurance sector

The four case study countries differ in terms of the number of active primary insurance companies, the role of state-owned insurers and the participation of foreign insurance companies, either through subsidiaries (normally joint ventures) or branches:

- In India, there are 25 non-life insurance companies[1] authorised to offer property insurance coverage, including 21 private companies and four state-owned insurance companies[2] (IRDAI, 2018[2]). The private sector general insurance companies include nine joint venture companies involving large foreign insurers (AXA, Allianz, Generali, Hollard, ERGO, Tokio Marine, Sompo, AIG and Liberty Mutual). Foreign ownership of insurance companies is limited to 49% (up from 26% before 2014) although the Government of India recently announced that it would examine a possible increase in the permitted level of foreign ownership (Ministry of Finance (India), 2019[3]). Branches of foreign primary insurers are not permitted.
- In Indonesia (as of 2019), there are 74 non-life insurance companies authorised to offer property insurance coverage, including 52 domestically-owned companies and 22 joint ventures with foreign insurance companies (including AIG, Allianz, AXA, Chubb, Sompo, Tokio Marine and Zurich, amongst others). Foreign ownership of insurance companies is limited to 80%,[3] except in the case of publicly-listed companies (Innis, Djajadiredja and Putra, 2018[4]). Branches of foreign primary insurers are not permitted.
- In Myanmar, there are nine primary insurance companies offering property insurance, including state-owned Myanma Insurance and eight domestic private insurance companies licensed since 2013. In January 2019, the Ministry of Planning and Finance invited expressions of interest from entities wishing to establish new joint venture insurance companies in the life and non-life sector (Aon, 2019[5]). In July 2019, it was announced that three new non-life insurance joint ventures were approved (involving the three Japanese insurance companies that had an existing presence in Myanmar through representative offices) (Gonçalves, 2019[6]). Wholly-owned subsidiaries of foreign insurers and branch offices are not permitted in the non-life sector.
- In the Philippines, there are 55 non-life insurance companies and four composite insurance (life and non-life) companies that are authorised to offer property insurance coverage, including at least eight insurance companies that are foreign-owned (more than 50% ownership) (Insurance Commission (Philippines), 2019[7]), (Insurance Commission (Philippines), 2018[8]). In recent years, the Insurance Commission has established significantly higher minimum capital requirements for non-life insurance companies (to be phased in by 2022) which has led to consolidation and exit of a number of smaller non-life insurance companies (there were 71 active non-life insurance companies in 2013) (JLT Re, 2018[9]). Branches of foreign primary insurers are permitted in the Philippines.

In Myanmar and India, where state-owned insurers were the only providers of insurance until relatively recently (before 2000 in India and 2013 in Myanmar), the non-life insurance markets are more concentrated. The non-life insurance market in Myanmar is the most concentrated among the four countries as the largest company (a state-owned insurer) is estimated to account for over 40% of non-life insurance premiums (two private companies have a market share of between 10%-30% each and another five companies have a market share of less than 10% each).[4] In India, the non-life insurance market (excluding standalone health insurers and specialised insurers) is split fairly evenly between the state-owned and private insurance companies (46% vs. 54%, respectively in 2018-19) as the market share of state-owned insurers has declined over time. The five largest non-life insurance companies (four state-owned and one private) accounted for 55% of gross direct premium income in 2018-19 while the ten largest companies accounted for approximately 82% (IRDAI, 2019[10]). State-owned and private primary insurers are subject to the same regulatory requirements in India and Myanmar, although the Financial Regulatory Department in Myanmar does not have supervisory responsibilities for state-owned Myanma Insurance.[5]

In the Philippines and Indonesia, the non-life market is divided among a larger number of insurance companies. In the Philippines, the three largest non-life companies have an estimated market share of approximately 33% (JLT Re, 2018[9]) and the top ten largest companies have a market share of approximately 50% to 70%.[6] In Indonesia, all non-life companies had a market share of less than 10% of direct written premiums in 2018 and the top ten largest companies accounted for just over 50% of the market (OJK, 2019[11]). The non-life insurance sectors in Indonesia and the Philippines are significantly less concentrated than in most OECD countries.[7]

Property insurance

Insurance coverage for commercial/industrial and residential property accounts for approximately 30% of the non-life insurance markets in the Philippines and Indonesia, and approximately 10% of the market in India[8] (motor vehicle insurance is the largest line of non-life business in all three countries) (Insurance Commission (Philippines), 2018[8]), (OJK, 2019[11]), (IRDAI, 2019[10]). While imperfect indicators, estimates of property insurance penetration (premiums/GDP) and density (premiums/population) suggest that property insurance take-up is much lower in Myanmar and India than in Indonesia and the Philippines – and much lower in all four case study countries than in OECD member countries (see Table 1.1).

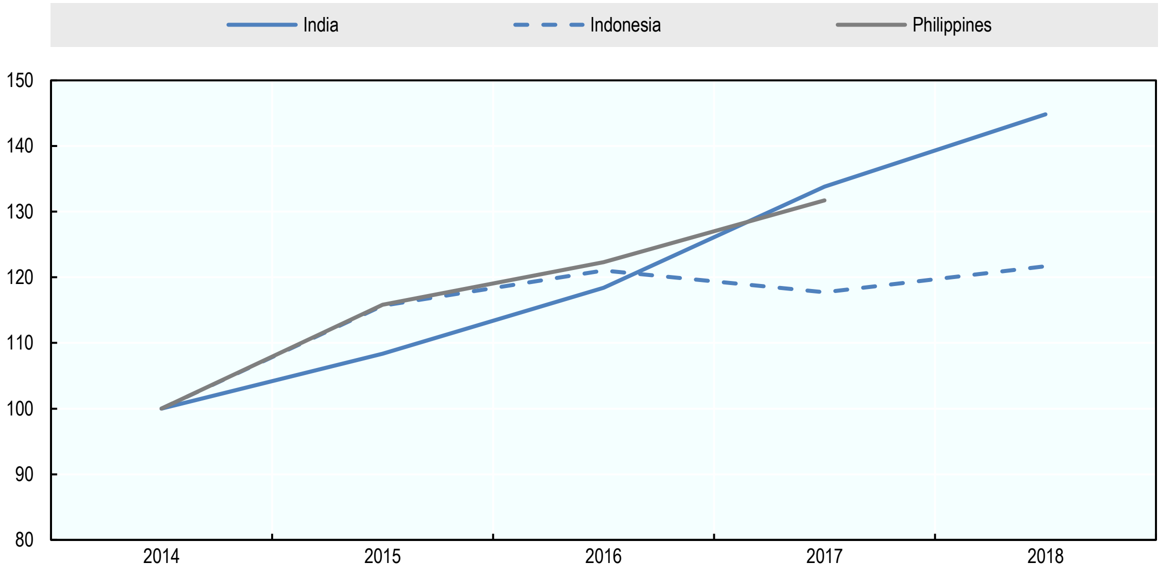
Table 1.1. Property insurance premiums: 2017

	Premiums written (USD, estimated)	Property insurance penetration (estimated)	Property insurance density (estimated)
India	USD 1 673.0 million	0.06%	USD 1.27
Indonesia	USD 1 192.1 million	0.12%	USD 4.56
Myanmar	USD 39.4 million	0.06%	USD 0.74
Philippines	USD 496.0 million	0.16%	USD 4.73
OECD (total)	USD 287 421 million	0.62%	USD 241.43

Note: Property insurance penetration is calculated as premiums/GDP. Property insurance density is calculated as premiums/population.
Source: Premiums data for Indonesia, India and the Philippines is from annual statistical publications: (OJK, 2018[12]), (IRDAI, 2018[2]), (Insurance Commission (Philippines), 2018[8]). For Myanmar, the data was provided by the Financial Regulatory Department. Data on GDP and population is from the IMF World Economic Outlook database (October 2019) (IMF, 2019[13]). Data for OECD countries is from the OECD Insurance Statistics database (OECD, 2019[14]).

Since 2014, gross property insurance premiums written have increased by over 40% in India, approximately 30% in the Philippines (up to 2017) and just under 20% in Indonesia (see Figure 1.3).

Figure 1.3. Property insurance premium growth (2014 =100)



Note: Data on written premium in Myanmar in previous years was not available.
Source: OECD calculations based on (IDRAI, 2016[15]), (IRDAI, 2018[2]), (OJK, 2015[16]), (OJK, 2016[17]), (OJK, 2017[18]), (OJK, 2018[12]), (Insurance Commission (Philippines), 2016[19]), (Insurance Commission (Philippines), 2018[8]) (IRDAI, 2019[10]), (OJK, 2019[11]).

Coverage for catastrophe perils is normally offered as an optional add-on (or add-ons) to fire insurance for both commercial/industrial and residential properties:

- In India, *Standard Fire and Special Perils* policies offered to commercial/industrial and residential policyholders usually include (automatic) coverage for *Storm, Typhoon, Cyclone, Tempest, Tornado, Hurricane, Flood or Inundation* (although policyholders can opt out) and offer coverage for earthquake (fire and shock) either as a standard inclusion or an add-on coverage.
- In Indonesia, coverage for *Earthquake, Volcanic Eruption, and Tsunami* (EQVET) and *Typhoon, Storm, Flood and Water Damage* (TSFWD) is only available as add-on endorsements to standard fire insurance policies for commercial and residential policyholders (although some industrial policies are provided on an all-risk basis).
- In Myanmar, coverage for *Earthquake Shock and Earthquake Fire*; *Storm, Typhoon, Hurricane, Tempest, Cyclone*; and *Flood and Inundation* is only available as add-on endorsements to standard fire insurance policies for commercial/industrial and residential policyholders. As of October 2020, Myanma insurance and private insurers will be authorised to offer industrial and construction all-risk policies (Gim et al., 2020[20]).
- In the Philippines, coverage for *Earthquake*; *Typhoon*; and *Flood* is only available as add-on endorsements to standard fire insurance policies for commercial/industrial and residential policyholders. In addition, a low-limit stand-alone coverage for typhoon is available to residential and commercial policyholders.

As insurance coverage for all or some natural catastrophe perils is an optional addition to standard commercial/industrial or residential property insurance policies, the extent to which catastrophe losses that materialise are covered by insurance depends both on the take-up of standard fire insurance as well as whether commercial/industrial and residential policyholders chose to acquire the additional coverage for catastrophe risks. Data on the actual take-up rate for the additional catastrophe coverage offered in each country is not available, although consultations with insurance companies in each country provided the following estimates:

- In India, the vast majority of policyholders (commercial and residential) have coverage for natural catastrophe perils as policyholders rarely opt out of storm/flood coverage and usually acquire the optional coverage for earthquake risk.
- In Indonesia, insurance companies estimated that approximately 20%-25% of commercial/industrial policyholders choose to acquire the additional coverage for catastrophe perils, with take-up of TSFWD (flood) coverage likely higher than the take-up of EQVET (earthquake) coverage as not all regions are subject to earthquake risk. Lenders often establish requirements for adequate insurance coverage for properties for which a loan has been extended and may only require coverage for earthquake risk in regions more prone to earthquakes. Few residential policyholders acquire coverage for the additional catastrophe perils.
- In Myanmar, insurance companies indicated that it is common for policyholders (particularly commercial/industrial policyholders) to acquire the additional coverage for catastrophe perils, particularly in regions exposed to those perils (e.g. cyclones in the south and earthquakes in the north). Lenders play a large role in establishing requirements for adequate insurance coverage – and a significant share of insurance policies are distributed through the banking sector.
- In the Philippines, commercial/industrial policyholders will often acquire the additional coverage for catastrophe perils (particularly for typhoon and flood) as will some higher income residential policyholders. Mortgage lenders require adequate insurance protection and may require coverage for catastrophe perils as well in higher-risk regions although enforcement of these requirements might only occur at the time of loan origination. In 2017, premiums earned for earthquake, flood and typhoon accounted for 18.8%, 5.0% and 6.9%, respectively of total property insurance premiums earned (Insurance Commission (Philippines), 2018[8]).

In all four case study countries, insurers indicated that coverage for catastrophe perils is available in all regions – i.e. no region of any of the four case study countries is deemed to face “uninsurable” levels of risk. In India, insurers are more cautious about underwriting risk in the earthquake-prone Himalayan region and along the cyclone exposed eastern coast than in other regions. In the Philippines, some insurers expressed concerns about potential accumulation risk in the metropolitan Manila region given its exposure to earthquake risk although this did not appear to limit their willingness to offer such coverage.

However, limited penetration of property insurance and low take-up of additional coverage for catastrophe perils in some countries has meant that only a small share of losses from past catastrophe events have been covered by insurance (see Table 1.2).

Table 1.2. Insured share of catastrophe losses (2000-2019)

	Earthquake	Flood	Storm
India	2.3%	7.0%	6.8%
Indonesia	10.8%	12.8%	0.0%
Myanmar	0.0%	0.0%	0.3%
Philippines	5.0%	4.1%	6.6%
OECD average	21.7%	29.1%	53.7%

Note: The share of catastrophe losses insured may be lower in some countries due to limits in the availability or collection of relevant data on insured losses. If only events with reported data on insured losses are included in the calculation, the estimated share of losses insured increases to 10.8% for India flood and 8.5% for India storm; 11.4% for Indonesia earthquake and 15.0% for Indonesia flood; 20.0% for Philippines earthquake, 4.5% for Philippines flood and 9.4% for Philippines storm. For OECD countries, the difference is only marginal if events without a reported insured loss are excluded.
Source: OECD calculations based on (Swiss Re sigma, 2020[1]).

Pricing

Pricing for standard property insurance and optional coverage for catastrophe perils is regulated (to different extents) in Indonesia, Myanmar and the Philippines:

- In Indonesia, minimum and maximum rates have been established for standard property coverage (based on the activity and construction type) although discounts may be provided for larger policies by insurance companies with professional underwriter status (OJK, 2017[21]). A fixed premium has been established for EQVET (earthquake) coverage based on risk zones and construction type and discounts are not permitted. For example, a commercial building with over nine floors with steel, reinforced concrete or wood framing would face premiums of 1.12% in Zone 1 and 2.00% in Zone 5 (rates for a building without a steel, wood or reinforced frame are 4.70% and 4.50% for commercial and residential buildings, respectively in zone 5) (OJK, 2017[21]). Rates for TSFWD (flood) coverage are set for four risk zones established based on inundation levels from past floods (OJK, 2017[21]). A specialised catastrophe risk reinsurer that is owned by all non-life insurance companies (PT Reasuransi Maipark Indonesia) has significant expertise in modelling catastrophe risks and contributes to establishing premium rates for earthquake and (more recently) flood perils.
- In Myanmar, pricing is based on a classification of buildings into four categories. For a residential property, rates vary from 0.20% in class I to 1.40% in class IV. For commercial and industrial buildings, rates vary from 0.13% to 3.50%, depending on the building class and activity (Myanma Insurance, 2013[22]). Additional catastrophe coverage costs 0.10% for earthquake coverage, 0.10% for flood coverage and 0.20% to 0.25% for storm coverage (Myanma Insurance, n.d.[23]). The location of the property, including its potential exposure to natural catastrophe hazards, is not taken into account.
- In the Philippines, minimum premium rates have been established in the Philippine Insurers and Reinsurers Association Fire Manual which are based on the location of the building, construction characteristics, occupancy and activities (residential, commercial, industrial or general) (Funa, 2018[24]). For earthquake coverage, a minimum rate of 0.10% of the sum insured must be added to the applicable fire premium rate. For flood and typhoon (separately or combined), a minimum rate of 0.05% must be applied (Insurance Commission, 2016[25]). Insurance companies can seek prior approval from the Insurance Commission for pricing strategies that would allow for premiums below the minimum rate.

In India, pricing for standard property coverage and optional coverage for catastrophe perils has been liberalised although a number of insurance companies indicated that there are informal agreements to maintain pricing above a specified minimum. In addition, minimum prices have been imposed on primary insurers for risks in certain loss-making sectors as a condition for accessing reinsurance coverage from the largest reinsurance company (GIC Re). IRDAI requires insurers to seek approval of offered products and ratings approaches which includes a review of pricing adequacy by IRDAI actuaries.

Box 1.1. The availability of catastrophe analytics

Data on past catastrophe losses, hazard and risk maps and catastrophe models are critical inputs into underwriting and pricing insurance coverage for catastrophe perils and for managing the exposures resulting from coverage provided:

- Data on past losses from catastrophe events may be collected by insurance supervisors or industry associations and can provide an important (if incomplete) assessment of possible future losses, particularly where collected over a number of years (or decades);

- Hazard maps provide information on geographical areas at risk of being affected by a given hazard, normally for a given measure of probability/return period while risk maps add information on the potential impact of a hazard, such as potential casualties and damages. Hazard and risk maps are normally produced by government agencies (as well as by insurance associations and intermediaries) and can be used for the establishment of risk zones to inform pricing;
- Catastrophe models may be produced by government agencies or by insurance market participants (intermediaries, insurers and reinsurers as well as specialised catastrophe modelling companies) and integrate information on possible event characteristics (wind speed, inundation levels, ground shaking magnitude) with information on structures and their vulnerabilities to provide expected loss estimates (usually average annual loss or probable maximum loss).

The availability and use of these different types of catastrophe analytics tools varies across the case study countries:

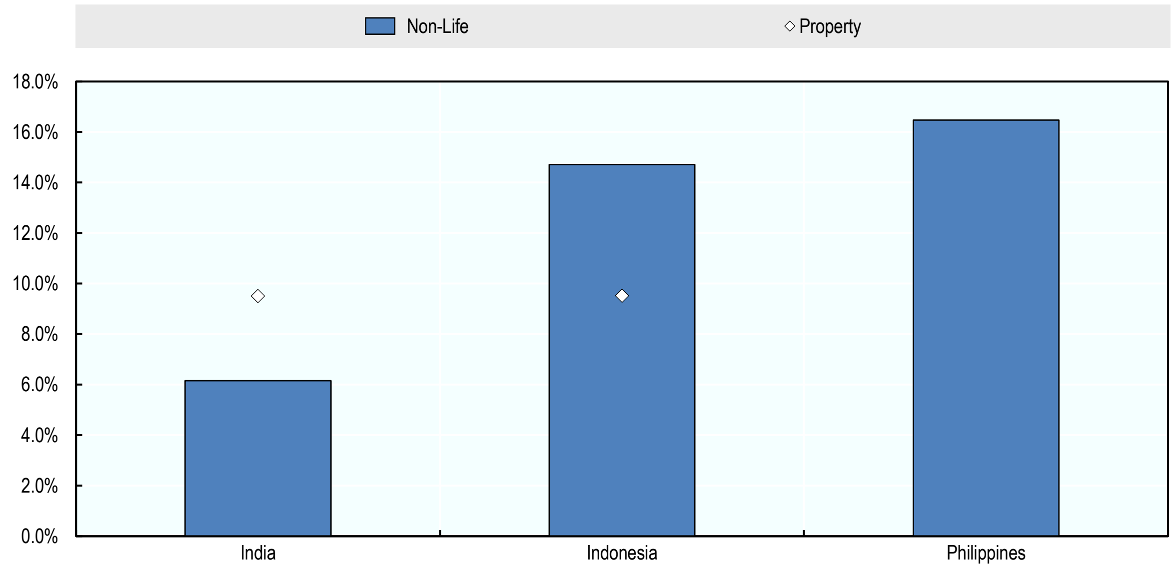
- In India, hazard maps are available for all of the main catastrophe perils (earthquake, flood, storm) and IRDAI collects information on insured losses for major catastrophe events. The large catastrophe modelling firms have developed catastrophe models covering tropical cyclones (including wind and precipitation), inland flooding (including monsoon rains) and earthquake (including ground shaking and liquefaction). Estimates by catastrophe modelling firms suggest that less than 20% of Indian insurers make direct use of catastrophe models (relative to 50%-60% of insurers in the United States and close to 100% of insurers in Japan).
- In Indonesia, hazard and risk maps are available for all of the main perils. As noted above, a specialised reinsurer (PT Reasuransi Maipark Indonesia) plays an important role in collecting data on past losses and developing models for catastrophe perils, particularly earthquake and more recently flood. In addition, the large catastrophe modelling firms have developed (or are developing) models for earthquake (including ground shaking, liquefaction and tsunami) and river flooding (for the island of Java). According to catastrophe modelling firms, there is very limited use of commercial catastrophe models by primary insurers in Indonesia.
- In Myanmar, hazard (and some risk) maps are available for most perils (with the exception of convective storms). The Financial Regulatory Department is developing a reporting template on catastrophe exposures in fire, motor, marine and other general insurance lines for implementation in the near future. The large catastrophe modelling firms have not developed any models covering Myanmar.
- In the Philippines, hazard maps are available for flood, earthquake and volcanic eruption and risk maps are available for flood (in selected municipalities) and for earthquake and tropical cyclone (metro Manila only). The Insurance Commission has developed an extensive reporting template for catastrophe peril coverage extended and claims incurred, including details on the location, construction characteristics and sums insurable and insured for each relevant policy. A catastrophe model for earthquake risk in metro Manila has been developed by a government agency. The large catastrophe modelling firms have developed models for earthquake (including ground shaking, liquefaction and tsunami) and tropical cyclone (including storm surge, wind and direct and indirect storm-related precipitation and flooding) and a large intermediary recently released a probabilistic flood model for riverine and pluvial flooding. According to catastrophe modelling firms, there is very limited use of commercial catastrophe models by primary insurers in the Philippines.

Source: (Insurance Commission, 2017[26]), (OECD, 2018[27]), (AIR Worldwide, n.d.[28]), (AIR Worldwide, n.d.[29]), (AIR Worldwide, n.d.[30]), (RMS, n.d.[31]), (RMS, n.d.[32]), (RMS, n.d.[33]), (Insurance Journal, 2020[34]).

In India, Indonesia and the Philippines, there are also limits on the maximum amount of commission that can be paid to intermediaries. In India, commissions on fire insurance are limited to 15% of premium for retail products (up from 12.5%) (IRDAI, 2017[35]). In Indonesia, insurers cannot pay more than 15% of the premium charged to property insurance policyholders as acquisition costs (including commissions) (OJK, 2017[21]) although some primary insurers indicated that this ceiling is not consistently enforced. In the Philippines, commissions for fire insurance are limited to 15% of the premium and to 5% for catastrophe perils (Funa, 2018[24]), (Insurance Commission, 2016[25]).

In Indonesia, commissions have accounted for approximately 9% of direct property premium (gross) in recent years (relative to 12%-15% across all lines of non-life business). In the Philippines, commission expenses have accounted for approximately 15%-16% of gross premiums across all lines of non-life business (a breakdown by line of business is not available) although this also includes commission expenses incurred by Nat Re for reinsurance business. In India, gross commission expenses have accounted for approximately 9% of gross direct premium income although this appears to be higher than the share of premium accounted for by commissions in other lines of non-life business (excluding health). By comparison, commissions as a share of gross direct written non-life premiums in reporting OECD countries were approximately 11.1% in 2018 (although with significant variation across countries) (OECD, 2020[36]).

Figure 1.4. Commission expenses as a share of premiums



Note: The basis for the calculation is slightly different across countries. For India, the ratio is commission expenses divided by gross direct premium income. For Indonesia, it is commissions divided by gross direct premiums. For Philippines, it is commission expenses divided by gross premiums written (and including for the professional reinsurer, Nat Re).

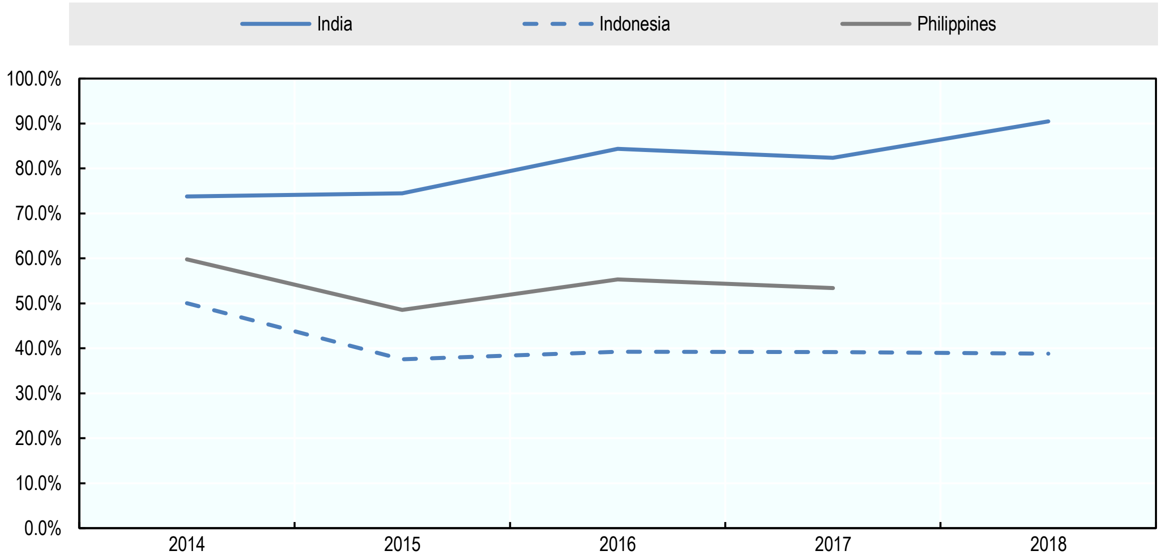
Source: OECD calculations based on (IDRAI, 2016[15]), (IRDAI, 2018[2]), (OJK, 2015[16]), (OJK, 2016[17]), (OJK, 2017[18]), (OJK, 2018[12]), (Insurance Commission (Philippines), 2015[37]) (Insurance Commission (Philippines), 2016[19]), (Insurance Commission (Philippines), 2017[38]) (Insurance Commission (Philippines), 2018[8]), (OJK, 2019[11]), (IRDAI, 2019[10]).

Underwriting performance

In Indonesia and the Philippines, highly-competitive markets have led insurers to generally charge rates for property insurance coverage that are at (or near) the regulated minimum. In Indonesia, insurance companies generally viewed the minimum rates as adequate to cover potential losses in most regions of the country (where the rates are too low, insurers indicated that they adjust the sum insured or deductible accordingly). In the Philippines, the rates charged are almost always at (or even below) the minimum rating. The Insurance Commission may impose fines on companies that provide coverage at rates below the prescribed minimums (up to PHP 25 000 for a policy covering a single building or PHP 1 million for a policy covering multiple buildings) (Insurance Commission, 2018[39]) although these amounts may not be sufficient to comprehensively deter pricing below the minimum rates. Insurance companies in Myanmar indicated that prescribed rates are adequate to provide coverage to most (if not all) buildings – in fact, the prescribed rates for property insurance[9] are often too high and result in domestic insurers losing business to international markets.

Data on underwriting performance (loss or claims ratios) for the property insurance line of business is available for companies in India, Indonesia and the Philippines. In Indonesia and the Philippines, where pricing is subject to regulation, loss ratios have been lower in recent years than in India (see Figure 1.5). In Myanmar, estimates by local companies suggested that loss ratios were approximately 10% to 20%, which is significantly lower than the other case study countries.

Figure 1.5. Loss ratios: property insurance



Note: The basis for the calculation is slightly different across countries. For India, the ratio is calculated as net claims incurred divided by net earned premium. For Indonesia, it is calculated as claims incurred divided by net premium income. For Philippines, it is calculated as losses incurred divided by premiums earned (and including for the professional reinsurer, Nat Re).
Source: OECD calculations based on (IDRAI, 2016[15]), (IRDAI, 2018[2]), (OJK, 2015[16]), (OJK, 2016[17]), (OJK, 2017[18]), (OJK, 2018[12]), (Insurance Commission (Philippines), 2015[37]) (Insurance Commission (Philippines), 2016[19]), (Insurance Commission (Philippines), 2017[38]) (Insurance Commission (Philippines), 2018[8]), (OJK, 2019[11]), (IRDAI, 2019[10]).

In India and Indonesia, data is available on the underwriting performance at the level of individual companies. Between 2014 and 2018, loss ratios in the property insurance business line were higher for domestically-owned companies in Indonesia than joint venture companies with domestic and foreign owners (43.7% vs. 34.1%) (although domestically-owned companies had a lower loss-ratio in some years, including 2017). In India, loss ratios in property insurance were significantly higher for state-owned insurers than for private insurers (86.4% vs. 59.0%). Across OECD countries (for which data is available), loss ratios for the non-life sector[10] (in aggregate) averaged 64.4% between 2014 and 2017 – i.e. higher than average loss ratios in property insurance among insurers in Indonesia and the Philippines but lower than insurers in India (OECD, 2019[40]).

2 Access to reinsurance for catastrophe risks

Transfer of property catastrophe risk to reinsurance markets

Primary insurers (cedants) may seek reinsurance for a variety of reasons, including (amongst others) to: (i) protect themselves against large (catastrophe) losses; (ii) increase underwriting capacity (for an individual large policy or portfolio of policies); or (iii) enter new lines of business or markets (FIO, 2014[41]), (OECD, 2018[42]). For a cedant, reinsurance provides an alternative to holding the full level of reserves and capital necessary to back the policy obligations it has underwritten. Based on their experience in other markets, reinsurers can also provide a source of expertise on product design and underwriting approach which may be another reason for cedants to enter into reinsurance arrangements (IAIS, 2017[43])

There is a wide variety of different forms of reinsurance coverage available to cedants for non-life business, including arrangements to share premiums, claims and expenses on a proportional basis for a portfolio of individual policies (e.g. quota share, surplus share (proportional reinsurance)) as well as coverage that will only apply to losses above a certain threshold (e.g. excess-of-loss, aggregate stop loss treaty reinsurance (non-proportional reinsurance)). Reinsurance coverage can be arranged on a per policy basis (i.e. the coverage is only arranged for a single policy (facultative reinsurance)) or for a portfolio of risks/policies (treaty reinsurance) (OECD, 2018[42]).

In addition, cedants can directly access reinsurance coverage through capital markets (often referred to as alternative risk transfer or ART). The types of coverage provided by capital markets is similar to that provided by traditional reinsurance markets although the coverage is provided by capital market investors through a financial instrument (e.g. catastrophe bond or a derivative, such as an industry loss warranty) or through a special-purpose reinsurer capitalised (or collateralised) by the investors (e.g. collateralised reinsurance or sidecars).

Use of reinsurance by primary insurers (cedants)

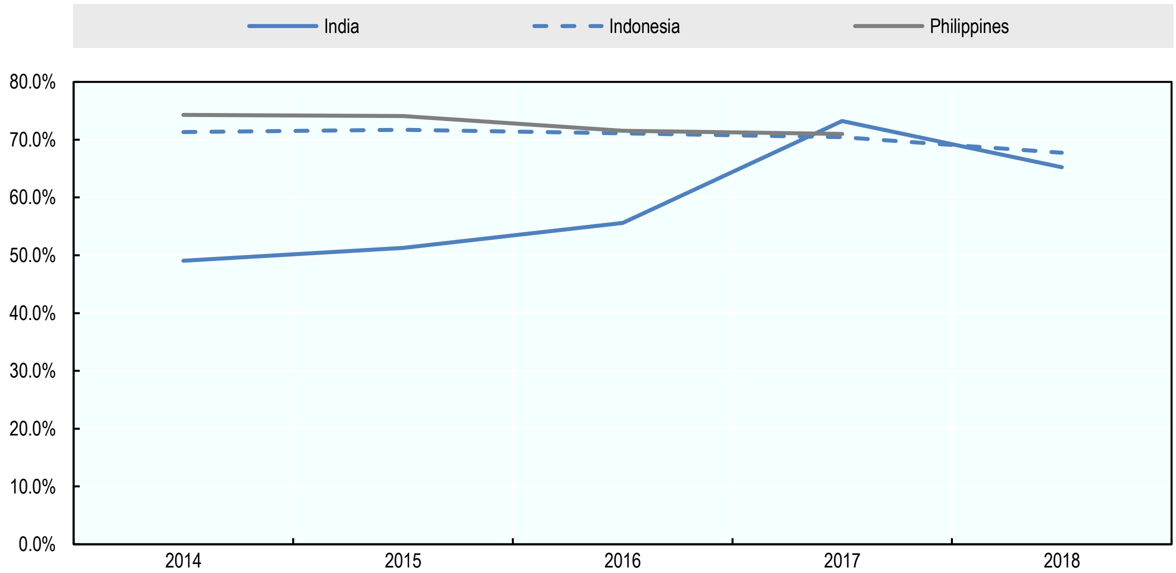
Cedants in the case study countries make significant use of reinsurance for their property-related exposures:

- In India, primary insurance companies have ceded an increasing portion of property premiums to reinsurers in recent years, reaching approximately 73% in 2017-18 (although the cession ratio declined to 65% in 2018-19). The cession ratio is higher for property business than for other non-life business (Indian insurers ceded approximately 32% of all non-life premium to reinsurers). State-owned insurers (which are among the largest non-life insurers) tend to make more limited use of reinsurance for property risks than the private sector insurers.
- In Indonesia, primary insurance companies cede approximately 70% of property premiums annually to reinsurance companies (all of the largest primary insurers ceded more than 60% of property premiums). Similar to India, the share of property premiums ceded is much higher than

the share of overall non-life premium ceded (approximately 50%) indicating that Indonesian insurers make greater use of reinsurance for property business. The largest non-life insurers in Indonesia ceded similar levels of premiums to reinsurers as smaller non-life insurers.

- In Myanmar, only Myanma Insurance is authorised to cede premiums to reinsurers and does make use of both facultative[11] and treaty reinsurance[12] arrangements although the overall share of premiums ceded by Myanma Insurance is significantly lower than the cession ratio of primary insurers in the other case study countries. In May 2020, the Insurance Business Regulatory Board issued a directive for implementation in October 2020 that would allow primary insurers to transfer risk to reinsurers.
- In the Philippines, primary insurance companies ceded 71% of property premiums in 2017, slightly less than the 74% of premiums ceded to reinsurers in 2014. The share of property premiums ceded is also much higher in the Philippines than the share of premiums ceded for non-life business overall (insurers retain approximately 60% of gross non-life premiums written). The larger insurers (in aggregate) tend to make less use of reinsurance for property risks than in the non-life sector as a whole.[13]

Figure 2.1. Cession ratios: property insurance



Note: Calculated as Ceded Premiums/Gross Direct Premiums. For India, data is for fiscal years (i.e. 2014 data reflects the 2014-15 fiscal year). For the Philippines, the calculation used was net premiums written/gross written premiums and data includes retrocession by professional reinsurers (i.e. Nat Re). This data is not available for insurers in Myanmar.
Source: OECD calculations based on (IDRAI, 2016[15]), (IRDAI, 2018[2]), (OJK, 2015[16]), (OJK, 2016[17]), (OJK, 2017[18]), (OJK, 2018[12]), (Insurance Commission (Philippines), 2015[37]) (Insurance Commission (Philippines), 2016[19]), (Insurance Commission (Philippines), 2017[38]) (Insurance Commission (Philippines), 2018[8]), (IRDAI, 2019[10]), (OJK, 2019[11]).

Cedants in India, Indonesia and the Philippines appear to make much greater use of reinsurance for managing their property coverage exposure than do cedants in most OECD economies where cedants retain close to 70% of gross direct property insurance premiums (on average)[14] (OECD, 2019[40]). However, a number of countries (OECD and non-OECD, and mostly emerging markets) that provide data for the OECD Global Insurance Statistics exercise had retention ratios similar to those observed in the case study countries (including Chile, Mexico, Bolivia, Costa Rica, Guatemala, Peru, Paraguay and Sri Lanka).

Oversight of primary insurers' risk transfer arrangements

The transfer of risk from the cedant to the reinsurer, while generally beneficial for risk management, can also lead to risks to the cedant's ability to meet its obligations to its policyholders in the event that reinsurance arrangements do not perform as expected. The main types of risks that could materialise as a result of risk transfer to reinsurance markets include:

- **Counterparty (credit) risk:** From the perspective of cedants, reinsurance coverage backing primary insurer policy liabilities provides a substitute to holding reserves and capital to cover those obligations. However, unlike reserves and capital, reinsurance is based on the promise of the reinsurer to pay claims in the future (relative to capital and reserves that are already in the possession of the cedant). As a result, the transfer of risk to reinsurance markets generally involves a degree of counterparty risk, i.e. the risk that the reinsurer will not be able to meet its future obligations to the cedant.[15]
- **Execution risk:** The potential for reinsurance coverage to not respond as expected by the cedant creates execution risk. For example, there will likely be some differences between the terms and conditions of coverage provided by the reinsurer and the terms and conditions of coverage in the underlying policy which could potentially lead to a lower level of indemnification of cedant claims than expected if there is a difference in understanding about how the reinsurance arrangement will perform.[16]
- **Liquidity risk:** Cedants may be faced with liquidity risks in cases where there is a significant delay between payments on reinsurance coverage and the cedant's payments to policyholders (which could be exacerbated if there are disagreements about the terms and conditions of the reinsurance arrangement). This risk is likely to be greater in the context of a large catastrophe as cedants will be faced with significant cash outflows to address claims demands.

Reinsurance programme review

To ensure that these risks are properly managed, insurance regulators and supervisors normally examine the reinsurance programmes of cedants. In most jurisdictions (consistent with IAIS Insurance Core Principle 13), cedants are required to submit information on their reinsurance programmes on at least an annual basis:[17]

- In India, non-life insurers must submit a board-approved reinsurance programme on an annual basis including information on retention limits and ratios, the structure of proportional and non-proportional reinsurance arrangements (limits, retentions, cessions, reinstatement provisions, etc.) and the cost of reinsurance coverage secured (IRDAI, 2018[44]).
- In Indonesia, insurance companies must develop and submit a reinsurance strategy to OJK and review that strategy on at least an annual basis. In developing that strategy, insurers should consider the profitability and volatility of the given business line, the capital adequacy and retention capacity of the insurer, the potential for catastrophe exposures in the portfolio, the cost of reinsurance and the impact of the failure of a reinsurance counterparty (amongst other factors) (OJK, 2015[45]).
- In Myanmar, as of October 2020, insurers will need to submit a board or senior-management approved reinsurance programme on an annual basis including information on retention levels and premium income projections for each line of business and the structure and cost of the reinsurance arrangements. At the end of each financial year, insurers will also need to provide information on the individual placements in the previous year and a report on the operation of its reinsurance arrangements (Insurance Business Regulatory Board, 2020[46]).
- In the Philippines, insurance companies are required to submit information annually on their treaty reinsurance arrangements for each line of business to the Insurance Commission, including

information on own retentions, treaty limits, cession amounts, participating reinsurers and any clauses that might limit the reinsurers' liability to the cedant (Insurance Commission, 2018[47]). The Insurance Commission has recently begun collecting information on facultative reinsurance arrangements as well.

Quantitative retention requirements

In some jurisdictions, regulators/supervisors also impose quantitative requirements related to retentions – either a minimum amount of retention, a maximum amount of retention or both. Minimum retention amounts ensure that cedants have appropriate incentives when underwriting coverage and also address concerns about fronting.[18] Maximum retention amounts ensure that cedants diversify their risk through the use of reinsurance and, where linked to capital levels, ensure that they have sufficient capital to address losses. Quantitative retention requirements are applied in all four case study countries (in India, current requirements apply only to reinsurers in the context of retrocession (see below) and to life insurers[19] although minimum retention requirements that apply more broadly are under consideration):

- In Indonesia, there are minimum retention requirements that vary based on the level of a company's equity and the line of business. For the property insurance line of business, smaller companies must retain a minimum of 1.5% of their equity for each risk underwritten while the largest companies must retain at least IDR 15 billion (approximately USD 1 million and equivalent to 0.75% or less of their equity). There is a maximum retention of 10% of a company's equity for a single risk that applies to all companies and all lines of business.
- In Myanmar, there is currently a mandatory co-insurance arrangement for policies with insured sums above 500 million kyats (approximately USD 330 000) which acts as a maximum limit on retention for individual risks. The arrangement involves a proportional co-insurance arrangement among Myanma Insurance (50%) and five private insurance companies (10% each) for amounts above the 500 million kyat retention of the originating insurer. However, in May 2020, the Insurance Business Regulatory Board issued a directive that will allow private insurers to transfer risk to reinsurance markets which may replace the existing co-insurance arrangement (Insurance Business Regulatory Board, 2020[46]). This new directive does not include a minimum or maximum retention requirement applicable to non-life insurance business.[20]
- In the Philippines, there is a maximum retention limit of 20% of an insurance company's net worth for any single risk applicable to all lines of business as well as minimum retention (0.5% of net worth) applicable only to life insurance policies (for a standard life) (Insurance Commission, 2014[48]). A more general restriction on transferring 100% of risk is currently under development.

Capital treatment

Regulators and supervisors will often incentivise sound management of insurers' reinsurance arrangements through the calibration of reserve and capital requirements. Insurers will normally be able to exclude risks that are (effectively) transferred to reinsurers from the calculation of reserves/technical provisions (i.e. the amount of assets that they must hold in order to meet their obligations to policyholders). In many jurisdictions, capital requirements are imposed above the required amount of reserves in order to ensure that insurance companies have sufficient financial strength to withstand an extreme event/scenario (such as a catastrophe event) – and these requirements can also be calibrated as net of risks transferred to reinsurers. In risk-based capital regimes, the capital requirements (above reserve requirements) can be calibrated to take into account variations in counterparty risk to incentivise cedants to assess the financial strength of their reinsurer counterparties. The capital regimes in the case study countries apply different approaches to accounting for risk transfer and counterparty risks:

- In India, Indonesia and the Philippines, reserve and capital requirements are assessed net of reinsurance (i.e. risks transferred to reinsurance markets are not included in the calculation of the insurer's reserve and capital requirements). In Myanmar, only an overall minimum capital requirement is imposed on insurance companies although the capital framework under development is expected to assess capital requirements net of reinsurance.

- A risk-based capital regime is in place in Indonesia and the Philippines (and under development in India (Jamie, 2019[49]) and Myanmar). Counterparty risk related to reinsurance arrangements is addressed in terms of credit risk on reinsurance recoverables:[21]
    - In Indonesia, a credit risk capital requirement is applied to reinsurance recoverables based on the nationality and credit rating of the reinsurer (domestic reinsurers and AAA-rated foreign reinsurers have the lowest factor applied (2.8%) while reinsurance recoverables due from a BBB-rated foreign reinsurers would be subject to a credit risk capital charge of 12.0% (OJK, 2017[50]).
    - In the Philippines, a credit risk capital requirement is applied to reinsurance recoverables based on the credit rating of the reinsurer – ranging from 1.5% for a reinsurer with a AA- credit rating or better to 6.0% applied to the reinsurance recoverables of a reinsurer with a BBB- to BBB+ credit rating (higher factors apply to reinsurers that are unrated or have a credit rating below BBB-) (Insurance Commission, 2016[51]).

Alternative risk transfer

None of the case study countries automatically recognise the use of alternative risk transfer as an effective reinsurance arrangement that contributes to meeting the requirements above (i.e. maximum retention levels, reserve or capital reductions for reinsurance). In the Philippines and Indonesia, alternative risk transfer is not recognised.[22] In India, cedants may seek specific authorisation for the use of alternative risk transfer as a component of their reinsurance programme with authorisation possible on a case-by-case basis (IRDAI, 2018[44]).

Box 2.1. Alternative risk transfer instruments

Alternative reinsurance coverage is normally provided by a special-purpose entity capitalised by capital market investors that assumes the insurance risk from the cedant. The special-purpose entity may be funded by equity (in the case of collateralised reinsurers and sidecars) or debt (in the case of catastrophe bonds issued by the special-purpose entity). Alternative reinsurance coverage may also be provided through tailored financial instruments such as industry loss warranties (ILWs).

Most alternative reinsurance coverage is structured in a similar way to traditional reinsurance. For example, sidecars and collateralised reinsurers both provide the same types of coverage as traditional reinsurance (i.e. a contract to indemnify the cedant for losses incurred, whether on a non-proportional or proportional basis) in exchange for a premium, although the exposures to the cedant are normally fully funded with funds (i.e. the funds raised as equity of the special-purpose entity) placed in a trust account with the cedant as the beneficiary (where there exists more than one contract, each contract will have a segregated account).

Catastrophe bonds are issued as a debt instrument to fund a special-purpose entity assuming insurance risk. The proceeds from the bond sale are placed in a special purpose entity to back the assumed risk and generate a market and risk return (a premium paid by the issuer for the coverage provided). The occurrence of a catastrophe event (or events) that exceed the pre-defined trigger (which may be an indemnity trigger based on the cedant's losses or a non-indemnity trigger based on a loss index, modelled loss estimate or the parameters of the event) leads to a payout of some or all of the proceeds from the bond (invested in the special-purpose entity) to the issuer (cedant). ILWs can be structured similar to a traditional reinsurance contract or as a derivative (option) purchased by the cedant and are also usually collateralised (although there are also exchange-traded ILWs that are centrally cleared). ILW payouts are triggered when an event exceeds a specific level of losses as determined by third party loss index providers and usually only when the cedant has also suffered a loss as a result of the event.

Sidecars normally provide coverage on a quota share basis. Special-purpose entities funded by catastrophe bonds and financial instruments such as ILWs provide comparable coverage to catastrophe excess-of-loss per occurrence coverage provided by traditional reinsurance companies. Special-purpose entities providing collateralised reinsurance predominantly provide catastrophe excess-of-loss coverage

Source: (OECD, 2018[42])

Table 2.1. Oversight of primary insurers' risk transfer

	Reinsurance programme review	Retention Limits	Capital Treatment	Risk transfer to alternative reinsurance markets
India	Annual submission	None (for non-life) although minimum retention requirement under development	Net of reinsurance	Specific authorisation
Indonesia	Annual submission	Minimum (varies) and maximum (10%)	Net of reinsurance, counterparty risk charge on reinsurance recoverables	Not recognised
Myanmar	Annual submission (from October 2020)	None (for non-life) as of October 2020	Not applicable	Not applicable
Philippines	Annual submission	Maximum (20%) and minimum retention requirement under development	Net of reinsurance, counterparty risk charge on reinsurance recoverables	Not recognised

Assumption of property catastrophe risk by reinsurers

The reinsurance market is an international market comprised of independent reinsurance companies, small and large with regional and/or global presence, as well as reinsurance companies established within insurance groups to provide coverage to other group entities (often referred to as affiliated reinsurers). In general, reinsurance companies with global operations tend to prefer serving markets on a cross-border basis rather than through local subsidiaries or branches as this allows them to pool their reinsurance liabilities on a global basis and benefit from a diversification of the risks that they assume. In a few countries, local reinsurance companies (as well as state-owned reinsurance companies) have been established to provide coverage to domestic cedants – and in some cases, to cedants in other countries in the same region and beyond.

Oversight of reinsurance placements

Authorised reinsurers

In most countries, insurance regulators and supervisors establish requirements on reinsurance companies wishing to assume risk from domestic cedants:

- Domestically-incorporated reinsurers, including locally-owned private reinsurers, state-owned reinsurers and subsidiaries of foreign reinsurers, will normally need to be licensed by insurance supervisors and adhere to the same (or similar) prudential standards as other insurance companies (such as capital requirements). There are five locally-owned private reinsurers operating in Indonesia (including one sharia reinsurance company). There are state-owned (or mixed-ownership[23]) reinsurers operating in India (one company[24]), Indonesia (one company) and the Philippines (one company). There is also one reinsurance company in Indonesia that is a subsidiary of state-owned insurance company.[25] In all three countries, state-owned and private reinsurers are subject to the same regulatory requirements and are overseen by the same supervisor. In Myanmar, state-owned Myanma Insurance has generally operated as a primary insurer although, as of October 2020, primary insurers in Myanmar will be required to offer reinsurance placements to Myanma Insurance (see below) (Insurance Business Regulatory Board, 2020[46]). There are no subsidiaries of foreign reinsurance companies in any of the case study countries (foreign ownership of reinsurance companies (including joint venture ownership) is not permitted in India). In Myanmar, the recent Reinsurance Directive defines a “reinsurer” as a joint venture or wholly-owned local subsidiary of a foreign reinsurance company (or a foreign reinsurer branch) although there are currently no reinsurer subsidiaries in Myanmar (Insurance Business Regulatory Board, 2020[46]).
- Branches of foreign reinsurers may be required to place capital or assets locally and may also be subject to other prudential requirements (e.g. asset allocation, retention limits, etc.).[26] Foreign branches of reinsurance companies are not permitted in Indonesia. Foreign reinsurer branches are permitted in the Philippines and appear to be permitted under the new Reinsurance Directive in Myanmar, although none have been established in either country.[27] In India, 11 foreign reinsurer branches have been established. Foreign reinsurer branches are subject to a paid-up capital requirement of INR 1 billion (approximately USD 14 million, which is lower than the INR 2 billion requirement applied to domestically-incorporated reinsurers) as well as other requirements related to investment, retention and localisation of specific functions and key personnel (IRDAI, 2015[52]).[28] Only foreign reinsurance companies with net-owned funds[29] equivalent to INR 50 billion (USD 700 million) are permitted to apply to establish a branch (although the Finance Minister has recently proposed lowering that requirement to INR 10 billion (USD 140 million) (Ministry of Finance (India), 2019[3]).
- Reinsurers without a local presence (i.e. a branch or subsidiary) and providing reinsurance coverage on a cross-border basis may be subject to a local registration requirement and/or limits on the amount or type of business they assume:
    - In India, cross-border reinsurers must submit an information sheet to IRDAI annually and will be provided with a Unique Identification Number (UIN) – only reinsurers with a UIN can assume Indian business. Cross-border reinsurers must have a minimum BBB rating with S&P (or equivalent) for the last three years and a satisfactory past claims payment performance. They must also be authorised in their home country to undertake reinsurance business, supervised and have a solvency ratio above minimum supervisory requirements (IRDAI, 2018[44]). There were 367 cross-border reinsurers with UINs in 2017-18 (up from 362 in 2016-17).
    - In Indonesia, foreign reinsurance companies must have a minimum credit rating of BBB (or equivalent) to assume risk from domestic cedants. There is no local registration requirement.
    - In Myanmar, foreign reinsurance companies can currently only assume risk from Myanma Insurance.[30]. The new Reinsurance Directive that will be implemented from October 2020 imposes a minimum BBB S&P rating requirement on cross-border reinsurers wishing to assume risk from insurance companies in Myanmar and also requires that the reinsurer be authorised to undertake reinsurance business by the supervisor in its home country, meet

capital requirements imposed by the home country supervisor and have a satisfactory claims payment record (Insurance Business Regulatory Board, 2020[46]).

- In the Philippines, foreign reinsurers wishing to assume risk from domestic cedants on a cross-border basis must have a local resident agent with power of attorney to receive notices, summons and legal processes and must submit information on licensing by a foreign jurisdiction, financial statements and income tax returns. They must also meet minimum financial capacity thresholds, either a credit rating of AA[31] or higher or paid-up capital equivalent to the requirements of local companies (approximately PHP 3 billion for a reinsurer) (Insurance Commission, 2015[53]). As of October 2019, there were 215 certified resident agents representing foreign insurance and reinsurance companies and intermediaries, including a number of international reinsurance companies (Insurance Commission, 2019[54]).

Requirements related to reinsurance placement

In some countries, insurance regulators or supervisors impose specific rules for the placement of reinsurance by domestic cedants. In some cases, these rules are aimed specifically at managing counterparty risk – for example, by limiting the amount of risk that can be placed with reinsurers with questionable financial capacity (normally based on credit ratings). In other cases, these rules are aimed at non-prudential objectives, such supporting the development of the domestic insurance market and retaining premiums (and currency) domestically. All of the case study countries have established rules for the placement of reinsurance by domestic cedants, either as a requirement for mandatory placement with certain (domestic) reinsurers or mandatory offer to these reinsurers:

- In India, there are mandatory placement and mandatory offer requirements as well as cession limits based on credit ratings that apply to all classes of non-life insurance[32] (IRDAI, 2018[44]):
  - There is a mandatory placement of 5% of the sum insured of each policy to Indian reinsurers[33] (as noted above, there is currently only one Indian reinsurer, GIC Re). This requirement is set annually by IRDAI, in consultation with the central government, and the rate can vary by line of business (although it is currently applied uniformly to all classes of business). The share that must be ceded to Indian reinsurers has declined over time (from 20% to 15% to 10% and then to 5% since 2013).
  - There is a mandatory offer requirement that involves two elements: (i) requirements related to which reinsurers need to be contacted to offer terms for the reinsurance coverage sought; and (ii) requirements related to which reinsurers must be offered an opportunity to participate in the transaction based on the terms offered (which may be the best terms offered):
    - Domestic cedants must seek terms from all Indian reinsurers (GIC Re) and at least four foreign reinsurer branches. They may also seek terms from reinsurers operating in the Gujarat International Finance Tec-City (or GIFT), a special economic zone (see Box 2.3), and from (registered) cross-border reinsurers with a credit rating of A- or higher.[34]
    - Domestic cedants must offer reinsurers an opportunity to participate, based on the best terms received, in the following order: (i) Indian reinsurers; (ii) foreign reinsurer branches;[35] (iii) reinsurers operating in GIFT, if they provided the best terms and are willing to cover at least 10% of the placement; (iv) (registered) cross-border reinsurers if they provided the best terms and are willing to cover at least 10% of the placement; (v) to other reinsurers operating in GIFT (i.e. GIFT reinsurers that did not offer the best terms initially); and (vi) to Indian primary insurers (for facultative placements) and to other (registered) cross-border reinsurers.
  - There are cession limits applicable to cross-border reinsurers which limit their participation in the reinsurance programme (in aggregate) of any domestic cedant based on their financial capacity/credit rating: (i) cross-border reinsurers with a credit rating of A+ or higher are limited

to 20% of all reinsurance premium placed outside of India by each domestic cedant; (ii) cross-border reinsurers with a credit rating of BBB+ to A+ are limited to 15%; and (iii) cross-border reinsurers with a credit rating of BBB- to BBB+ are limited to 10%. Domestic cedants can seek authorisation from IRDAI to exceed these limits.

- In Indonesia (since 2016), there are mandatory placement and offer requirements to domestic reinsurers (or insurers, state-owned or private) for non-simple risks, including property risks.[36] Cedants must place at least 25% (or a minimum amount,[37] whichever is greater) of their treaty and facultative placements in each line of business with domestic reinsurers (OJK, 2015[55]). For other placements (i.e. for the remaining 75% of the placement) cedants must first attempt to place the treaty or facultative arrangement with two domestic reinsurers. If rejected, they must attempt to place coverage with one domestic reinsurer and one domestic non-life insurer (as a reinsurer). The international reinsurance market can only be accessed for risks that cannot be placed with three domestic reinsurers and one domestic non-life insurers (with the exception of products designed for multinational corporations, products offering coverage on a global basis or new products developed with foreign reinsurers (for up to four years)). Reinsurance can only be placed with foreign reinsurers that have a credit rating of BBB or higher.[38] In addition, there is a mandatory cession of 25% (up to IDR 60 billion) of earthquake risk to a specialised reinsurer owned by all of the non-life companies (PT Reasuransi Maipark Indonesia). A similar arrangement is also being developed for flood risk. In June 2020, regulatory amendments were published that would eliminate the minimum placement requirements after 31 December 2022 for placements with reinsurance companies domiciled in a foreign country with which a bilateral agreement has been established (OJK, 2020[56]), (Djajadiredja, Kleute and Putra, 2020[57]).
- In Myanmar (from October 2020), insurance companies will be required to offer to cede 10% of their reinsurance placements in each line of business to Myanma Insurance (although Myanma Insurance is not required to accept these placements). Insurers will be able to seek terms from Myanma Insurance, any local reinsurers or branches and from cross-border reinsurers that meet the requirements for assuming risk from Myanma insurance although placements based on the best terms received must be offered in order of priority to: (i) Myanma Insurance; (ii) domestic reinsurers (i.e. joint ventures or subsidiaries of foreign reinsurers or foreign reinsurer branches in Myanmar); and (iii) cross-border reinsurers (specifically where the cross-border reinsurer offered the best terms and will assume a significant share of the placement). There will also be cession limits applicable to cross-border reinsurers based on credit ratings (50% for reinsurers with a rating above A+; 40% for reinsurers rated above BBB+ and up to A+; and 20% for reinsurers with a BBB to BBB+ rating). The limits will be applied relative to the overall level of reinsurance premium placed outside of Myanmar which suggests that they may be aimed at addressing concentration risk rather than limiting cross-border reinsurer participation (Insurance Business Regulatory Board, 2020[46]).
- In the Philippines, there is a mandatory offer requirement to Nat Re of 10% of the amount of all treaty and facultative reinsurance placed with foreign reinsurers. In addition, facultative reinsurance placements must be offered to five domestically-owned companies, three foreign-authorised companies (branches) and Nat Re[39] and can only be placed with a foreign reinsurer if the full placement is declined by these companies (Insurance Commission, 2014[58]).

Box 2.2. Gujarat International Finance Tec-City

The Indian government has approved the establishment of a Special Economic Zone in Gujarat state (Gujarat International Finance Tec-City or GIFT) focused on the financial services and technology sectors, including insurance and reinsurance. Among the objectives is to develop a global reinsurance hub that would attract reinsurance premium from other markets as an offshore centre. Foreign reinsurers that establish a presence in GIFT can receive tax benefits and are also exempt from some of the requirements applied to other reinsurance business including an ability to establish a wholly-owned subsidiary, retrocede up to 90% of business assumed and conduct dollar-denominated business. Reinsurers that establish a presence in GIFT also benefit from a higher ranking than cross-border reinsurers in the established order of preference for the placement of reinsurance by Indian cedants (Jamie, 2019[49]). No foreign reinsurers have thus far established a presence in GIFT.

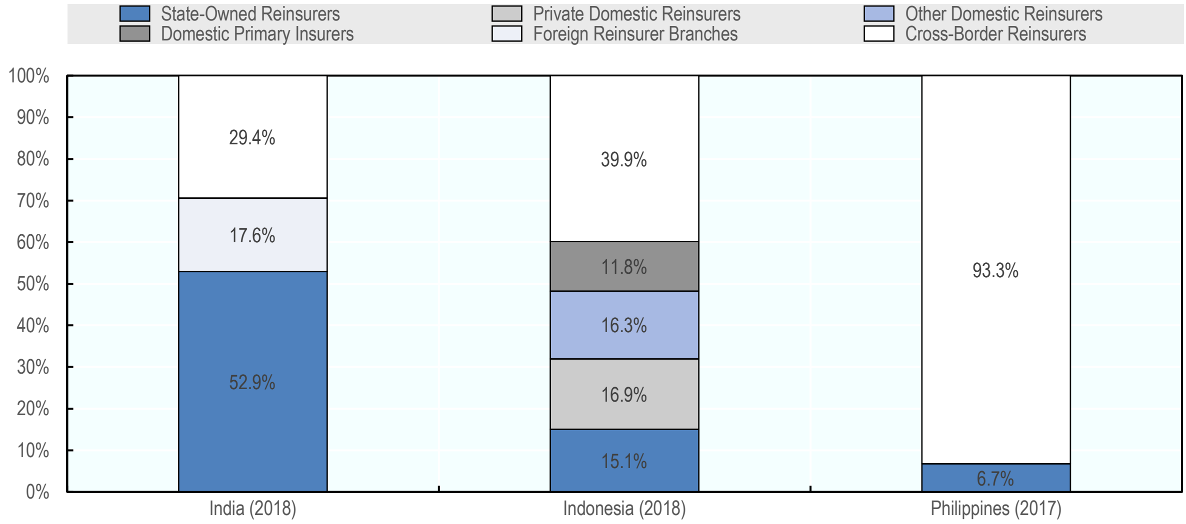
Table 2.2. Oversight of reinsurance placements

	Authorised reinsurers	Mandatory placement	Mandatory offer
India	Domestic reinsurers Foreign reinsurer branches Registered cross-border reinsurers (>BBB rating)	Domestic reinsurers (5%)	(i) Domestic reinsurers (ii) Foreign reinsurer branches (iii) GIFT reinsurers (if offered best terms) (iv) Registered cross-border reinsurers (if offered best terms) (v) Other GIFT reinsurers (vi) Domestic insurers (facultative) and other registered cross-border reinsurers
Indonesia	Domestic reinsurers Cross-border reinsurers (>BBB rating)	Domestic reinsurers (25%)	(i) Two domestic reinsurers (at least) (ii) One domestic reinsurer and one domestic insurer (at least)
Myanmar	Myanma Insurance Domestic reinsurers and foreign reinsurer branches Cross-border reinsurers (>BBB rating)	None	Myanma Insurance (mandatory offer of 10%) Domestic reinsurers and foreign reinsurer branches
Philippines	Domestic reinsurers Foreign reinsurer branches Registered cross-border reinsurers (>AA rating or paid-up capital)	None	Treaty and facultative: domestic reinsurer (10%) Facultative: domestic reinsurer, five domestic insurers and three authorised foreign insurers

Assumption of risk by reinsurers

In India and Indonesia, state-owned domestic reinsurers account for a significant share of the property reinsurance assumed from cedants. GIC Re assumes approximately 50% of all property premiums ceded by Indian cedants for domestic risks. In Indonesia, the state-owned reinsurance company (PT Reasuransi Indonesia Utama or Indonesia Re) and the reinsurer that is a subsidiary of a state-owned insurance company (PT Reasuransi Nasional Indonesia or Nasional Re) collected 30%-35% of all reinsurance premium ceded by Indonesian cedants in 2018. In the Philippines, Nat Re assumed less than 10% of all property premiums ceded.[40]

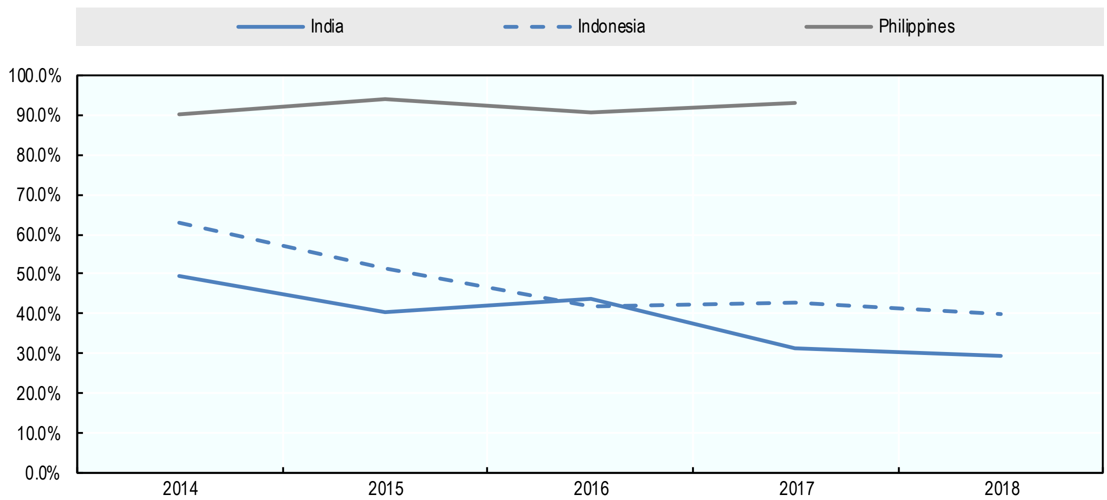
Figure 2.2. Estimated share of property reinsurance premium by type of reinsurer



Note: The share of property reinsurance premiums collected by cross-border reinsurers in the Philippines is likely over-stated as a breakout of facultative reinsurance placements with local primary insurers was not available. For Indonesia, “Other Domestic Reinsurers” refers to Nasional Re.
Source: OECD calculations based (OJK, 2019[11]), (IRDAI, 2019[10]), (Insurance Commission (Philippines), 2018[8]), (Nat Re, 2018[59]).

Foreign reinsurers, through branches or cross-border coverage, assumed approximately 40% of all property reinsurance premiums ceded in Indonesia, 45%-50% in India and up to 90% in the Philippines (although the foreign reinsurer share is likely lower than that as figures on the facultative reinsurance premium assumed by domestic primary insurers is not available). In India and Indonesia, the share of property reinsurance premiums ceded to cross-border reinsurers has declined in recent years.

Figure 2.3. Reinsurance placed with cross-border reinsurers



Note: The share of property reinsurance premiums collected by cross-border reinsurers in the Philippines is likely over-stated as a breakout of facultative reinsurance placements with local primary insurers was not available. For India, the estimate does not include foreign reinsurer branches which are considered as domestic in IRDAI statistics on reinsurance placements.
Source: OECD calculations based on (IDRAI, 2016[15]), (IRDAI, 2018[2]), (IRDAI, 2019[10]), (OJK, 2015[16]), (OJK, 2016[17]), (OJK, 2017[18]), (OJK, 2018[12]), (OJK, 2019[11]), (Insurance Commission (Philippines), 2015[37]), (Insurance Commission (Philippines), 2016[19]), (Insurance Commission (Philippines), 2017[38]), (Insurance Commission (Philippines), 2018[8]), (Nat Re, 2016[60]), (Nat Re, 2018[59]).

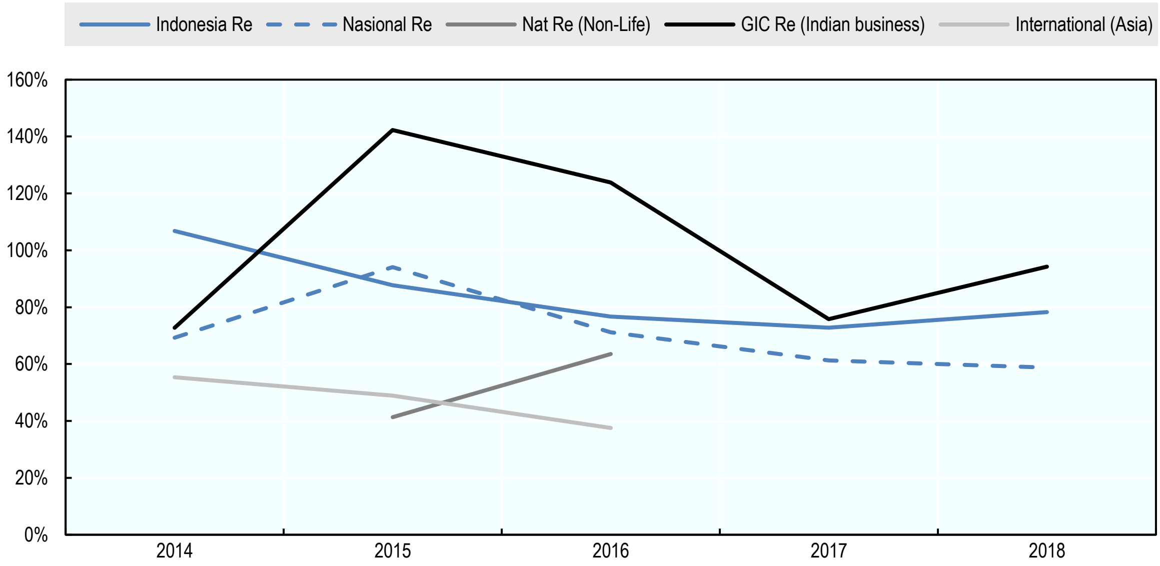
Treaty (and larger facultative) reinsurance coverage is often shared among a number of reinsurers based on a single set of coverage terms and agreed pricing. The different placement requirements in the case study countries lead to different outcomes in terms of price-setting:

- In India, cedants normally approach the state-owned reinsurer, foreign reinsurer branches and cross-border reinsurers simultaneously when placing coverage which allows all approached reinsurers to provide an offer on terms and pricing. As a result, the terms and pricing ultimately chosen for the placement could originate with any of the reinsurers approached (i.e. GIC Re, a foreign reinsurer branch or a cross-border reinsurer may act as lead reinsurer for a treaty or large facultative placement as long as they have the capacity to take a significant share of the placement). The new Reinsurance Directive in Myanmar will also allow insurers to approach both domestic and foreign reinsurers for terms and pricing.
- In Indonesia, cedants must currently place a 25% share of coverage with domestic reinsurers and can only approach cross-border reinsurers for a share of the placement if the remaining share cannot be placed domestically (based on rejections from at least two domestic reinsurers and then one domestic reinsurer and a primary insurer (acting as a reinsurer)). As a result, domestic reinsurers play a significant (if not exclusive) role in establishing terms and pricing for reinsurance placements. Cross-border reinsurers will provide capacity for treaty or facultative placements that are beyond the appetite of the domestic reinsurers approached. Larger placements are usually shared between domestic and cross-border reinsurers. The state-owned reinsurer (Indonesia Re) and the reinsurer owned by a state-owned insurer (Nasional Re) (which are both significantly larger than the private reinsurers) indicated that they have capacity for 25% of most property reinsurance placements (up to approximately USD 15 million) and more for smaller treaty placements. For facultative placements, these reinsurers have capacity for USD 30 million to USD 200 million.[41]
- In the Philippines, cedants must offer treaty and facultative placements to Nat Re (and primary insurers for facultative) first before approaching cross-border reinsurers. However, as Nat Re is normally only providing capacity for 10% of the placement, the lead reinsurer (and term and price-setter) for many placements (with the exception of smaller placements) is often a cross-border reinsurer. Nat Re is developing facilities for various lines of business (beginning with terrorism, financial lines, marine/cargo and aviation) that will share facultative placements more systematically among local insurers and some foreign reinsurers.

The appetite of international reinsurers (i.e. foreign reinsurer branches in India and cross-border insurers operating in all three markets) for assuming risk in India, Indonesia and the Philippines depends on the type of reinsurance coverage and pricing. In India and the Philippines, international reinsurers are more reluctant to offer coverage on a proportional basis due to concerns about the adequacy of primary pricing and/or the underwriting performance of domestic cedants (as proportional coverage ultimately involves a sharing of profits and losses based on underwriting performance). In India, GIC Re's efforts to tighten terms and conditions in loss-making segments has led international reinsurers to reconsider their appetite for providing proportional coverage. Some international reinsurers, intermediaries and local cedants indicated that pricing in India and Indonesia (where domestic reinsurers have a significant price-setting role) was lower than international markets. Some international reinsurers indicated that, as a result, they were often forced to accept lower pricing in order to participate in reinsurance programmes.

Loss ratios in recent years for many of the domestic reinsurers – while improving – appear high relative to those of many international reinsurers (see Figure 2.4). Loss ratios for almost all of the domestic reinsurers in India and Indonesia were above 50% every year since 2014 and many had loss ratios consistently above 70% (with the exception of Tugu Re and Maipark in Indonesia). By comparison, for a set of international reinsurers operating in the region, overall loss ratios were below 50%[42] (which is consistent with the finding that some international reinsurers are uncomfortable with local reinsurance pricing),

Figure 2.4. Loss ratios of reinsurers (property insurance)



Note: The basis for the calculation is slightly different across countries/reinsurers. For Indonesian reinsurers, it is calculated as claims incurred divided by net premium income. For GIC Re, it is calculated as incurred claims/earned premiums for Indian business. For Nat Re, it is calculated as Nat Re share in claims and losses/premiums earned. For international reinsurers, it is calculated as gross claims (ultimate loss estimate)/gross premiums for business in China, Japan, Korea, India and Chinese Taipei.
Source: OECD calculations based on (OJK, 2015[16]), (OJK, 2016[17]), (OJK, 2017[18]), (OJK, 2018[12]), (OJK, 2019[11]), (GIC Re, 2016[61]), (GIC Re, 2018[62]), (GIC Re, 2019[63]), (Nat Re, 2019[64]) and data provided to the OECD by international reinsurers.

Oversight and use of retrocession by reinsurers

Reinsurers will often acquire insurance coverage ("retrocession") for their exposures, typically covering catastrophe (i.e. low frequency/high severity losses) or tail risk. A reinsurer (the "retrocedant") purchases retrocession from retrocessionaires, which may be provided by other reinsurance companies or capital market investors or even primary insurance companies. Retrocession can provide cover on a portfolio-wide basis and provides many of the same benefits to reinsurers as reinsurance provides to primary insurers, such as allowing more business to be written and providing risk diversification.

In most countries the use of retrocession by domestic reinsurers is overseen by supervisors in a similar way as the use of reinsurance by primary insurers. For example, reinsurers may be required to submit their own reinsurance (retrocession) programmes for supervisory review and they may be subject to minimum or maximum retention requirements. Their capital requirements are likely to be established net of retrocession (taking into account credit risk where risk-based capital requirements are in place) and their access to alternative risk transfer will be subject to the same requirements (or restrictions) as primary insurers.

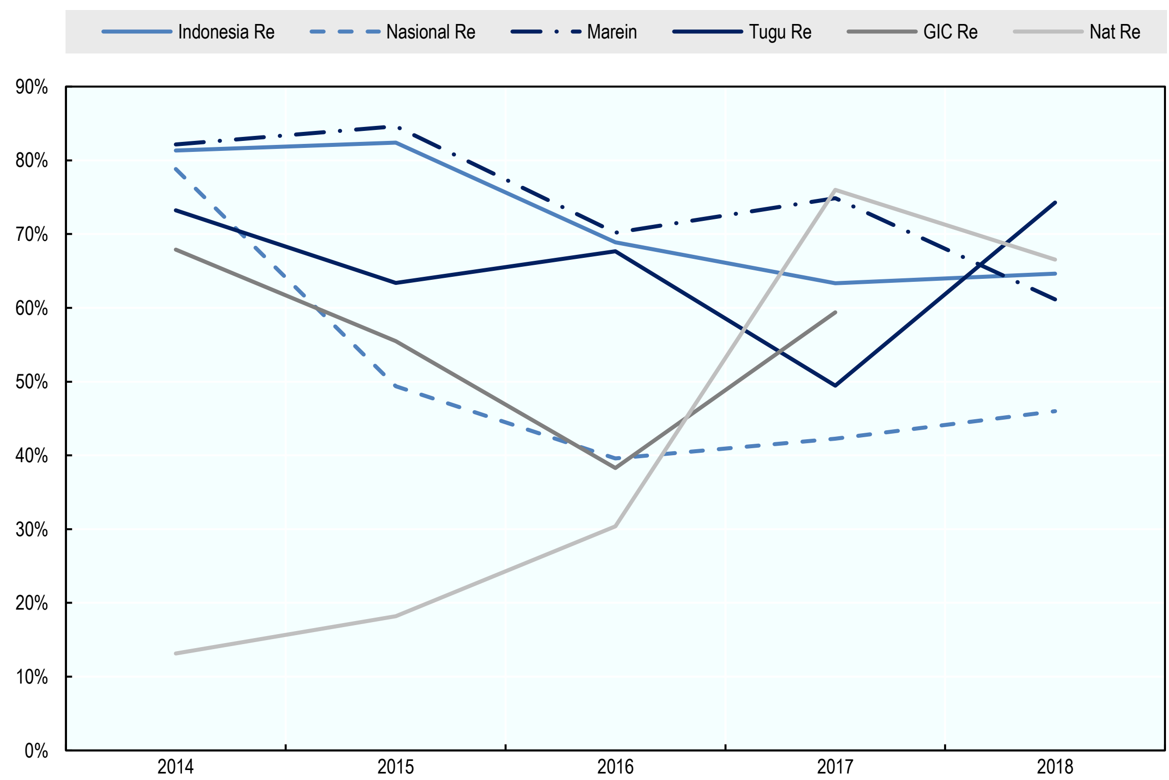
As noted above, there are domestically-incorporated reinsurers in India, Indonesia and the Philippines and foreign reinsurer branches in India. In all three countries, risk transfer by reinsurers is supervised in a similar way as risk transfer by primary insurers:

- In Indonesia and the Philippines, reinsurers must submit similar information as primary insurers on their risk transfer programmes (with a similar requirement under consideration in India). Nat Re is subject to the same reporting requirements on treaty arrangements as primary insurers (Insurance Commission, 2018[47]). In Indonesia, domestic reinsurers (state-owned and private) must submit their retrocession programmes for supervisory review on an annual basis (OJK, 2015[45]).

- In all three countries, reinsurers are subject to retention requirements. In Indonesia and the Philippines, the retention requirements are the same requirements that apply to primary insurers (a minimum and maximum in Indonesia and a maximum in the Philippines). In India, GIC Re and the foreign reinsurance branches must retain 50% of the premium they assume from Indian cedants (IRDAI, 2018[44]) although reinsurers established in GIFT may retrocede up to 90% of the reinsurance premiums that they assume.
- In Indonesia, capital requirements for domestically-incorporated reinsurers are applied in the same way as they are applied to primary insurers, net of retrocession and with reinsurance (retrocession) recoverables subject to a credit risk charge. In the Philippines, the risk-based capital framework does not apply to companies authorised solely to transact reinsurance business (i.e. professional reinsurers such as Nat Re) – only a minimum capital requirement of PHP 2.5 billion is applicable (approximately USD 50 million with a planned increase to PHP 3 billion in 2022). In India, domestic reinsurers (i.e. GIC Re) are subject to an assigned capital requirement of 100 crore (approximately USD 14 million) although the assigned capital requirement for reinsurers established in GIFT is lower.
- Alternative risk transfer arrangements placed by reinsurers are not recognised in Indonesia or the Philippines and require prior approval from IRDAI for recognition in India.

There are no restrictions on placement of retrocession by reinsurers except a minimum credit rating requirement in Indonesia (BBB, the same requirement as imposed on primary insurers' cession to reinsurance markets).

Figure 2.5. Retention by domestic reinsurers (property insurance)



Source: (Nat Re, 2018[59]), (Nat Re, 2016[60]), (Nat Re, 2020[65]) (OJK, 2015[16]), (OJK, 2016[17]), (OJK, 2017[18]), (OJK, 2018[12]), (OJK, 2019[11]) (IRDAI, 2015[66]), (IDRAI, 2016[15]), (IRDAI, 2017[67]), (IRDAI, 2018[2]).

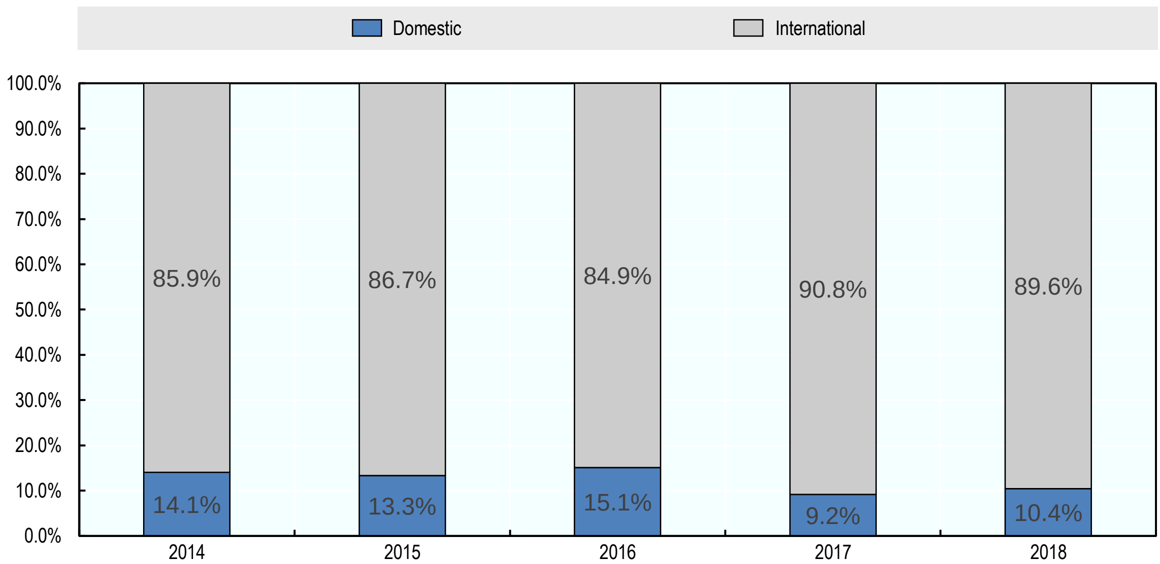
The domestic reinsurers retain a large share of the property insurance risk that they assume:

- In India, GIC Re retained an average of 55% of the Indian property insurance premium assumed between 2014 and 2017.
- In Indonesia, all of the large domestic reinsurers retained over 50% of the property reinsurance premium assumed between 2014 and 2018 (Indonesia Re and Marein retained over 70%). Most of the Indonesia reinsurers have reduced their level of retention since 2014 (in some cases significantly).
- In the Philippines, Nat Re has increased its level of retention significantly since 2014, from 13% of gross reinsurance premium to 67% in 2018.

At least one of the domestic reinsurers consulted for this study indicated that the cost of retrocession coverage provided by international markets was high relative to the cost of reinsurance assumed from domestic cedants – which may be one driver of high levels of retention by domestic reinsurers.

International markets play a significant role in providing retrocession coverage to domestic reinsurers in all three markets. In Indonesia, international markets assumed 85%-90% of the retrocession premium ceded by reinsurers. GIC Re indicated that its retrocession programme, including an excess-of-loss treaty for its Indian property business, is placed internationally. In the Philippines, Nat Re also places excess-of-loss treaties with reinsurers in international markets.

Figure 2.6. Retrocession by Indonesia reinsurers



Source: OECD calculations based on (OJK, 2015[16]), (OJK, 2016[17]), (OJK, 2017[18]), (OJK, 2018[12]) (OJK, 2019[11])

3 Assessment and recommendations

Primary insurance market

The case study countries – like many other countries around the world (developed and emerging) – suffer from low levels of coverage of catastrophe risks. As noted above, less than 15% of losses in recent years have been insured in each of the case study countries and far less in some. Past OECD work on the financial management of perils such as earthquakes and floods (OECD, 2016[68]), (OECD, 2018[69]) has identified a number of factors that limit either the availability of insurance coverage for catastrophe risks or the willingness of households and businesses to acquire that coverage. These factors include (amongst others):

- insufficient investment in catastrophe risk reduction;
- uncertainty in the quantification of catastrophe exposure; and
- lack of awareness and/or underestimation of risk (and resulting financial impacts) by households and businesses.

These factors generally lead to higher prices for insurance coverage and lower willingness-to-pay for such coverage, resulting in a protection gap as many households and businesses choose not (or cannot afford) to acquire insurance coverage. These challenges are particularly difficult to overcome in countries, such as the case study countries, where potential policyholders may face more important financial constraints and where the reach of basic property (fire) insurance is more limited.

Quantification of catastrophe exposure

Data and analytical tools for measuring catastrophe exposure, such as past claims data, risk maps and catastrophe models, play an important role in helping insurance (and reinsurance) companies measure the financial exposure they take-on through the coverage they provide. High-quality data and analytical tools can help (re)insurance companies set adequate pricing for their coverage, develop appropriate retention and risk transfer policies and ultimately ensure that they will be able to meet their obligations to policyholders in the event of a catastrophic event. Uncertainty arising from data gaps or weaknesses in the quality of the data or analytical tools can lead insurance or reinsurance companies to price their coverage inadequately or to compensate for the uncertainty by imposing higher prices.

As noted in Box 1.1, the availability of data and analytical tools varies substantially across the four case study countries ranging from the very limited data and few tools available in Myanmar to fairly broad coverage by private catastrophe modelling firms and government agencies in India and the Philippines. Governments have taken (or are in the process of taking) different useful steps to improve the availability of data and analytical tools to manage catastrophe risk:

- In Myanmar, a pilot exercise to collect data on insured losses from past catastrophes has been launched in order to inform the development of a risk-based capital standard.

- In India, IRDAI requires that (re)insurers prepare (and submit) a catastrophe modelling report that is to be used for quantifying the amount of catastrophe protection to be acquired through reinsurance (or retrocession) arrangements (IRDAI, 2018[44]).
- In Indonesia, the non-life insurance companies, with support from the Government of Indonesia, have established a specialised reinsurer (Maipark) to provide reinsurance for earthquake risk. Maipark has become a centre of expertise for quantifying earthquake risk and is beginning to play a similar role for other perils, such as flood. Insurers (and reinsurers) are also required to quantify their exposure to catastrophe events and ensure that they have sufficient capital, provisions and reinsurance coverage to absorb the losses for a given return period (1-in-250) which would likely encourage the use of catastrophe modelling approaches.
- In the Philippines, a specific reporting template has been developed to collect detailed information on individual policies covering catastrophe perils and claims, including information on construction characteristics, location, sum insured, premiums charged and cause of claims (Insurance Commission, 2017[26]). This type of data could make a significant contribution to quantifying risk exposure – while also supporting policy development related to risk reduction and addressing protection gaps.

In Myanmar, the FRD should continue to support the collection of data on past insured catastrophe losses as this will help provide the data necessary for underwriting coverage (particularly should pricing be liberalised) and transferring risk to reinsurance markets after October 2020. It could also support the development of tools such as catastrophe models. Given its much longer history in providing coverage – and its significant market position – the claims experience of Myanma Insurance will be particularly important to include in this exercise.

For India, Indonesia and the Philippines, greater use by insurance companies of catastrophe models for managing exposure should be (or continue to be) encouraged. The requirements imposed on Indian and Indonesian (re)insurers) to quantify their exposure to catastrophe risk and integrate these estimates into reinsurance (and retrocession) programmes could be replicated in the other countries. The modelling and analytical tools made available by Maipark is critical for this quantification exercise and could be complemented by other broker or vendor models in order to provide a diversity of views on risk and exposure.

In India and the Philippines, the main challenges appear to be related to the ability of insurance companies' to integrate catastrophe models and other analytics into the underwriting of primary coverage (including the cost of licenses in some cases). For these countries as well, the use of catastrophe models and data and analytical tools could help ensure adequate pricing and support risk transfer to reinsurance markets.

Lack of awareness/underestimation of risk

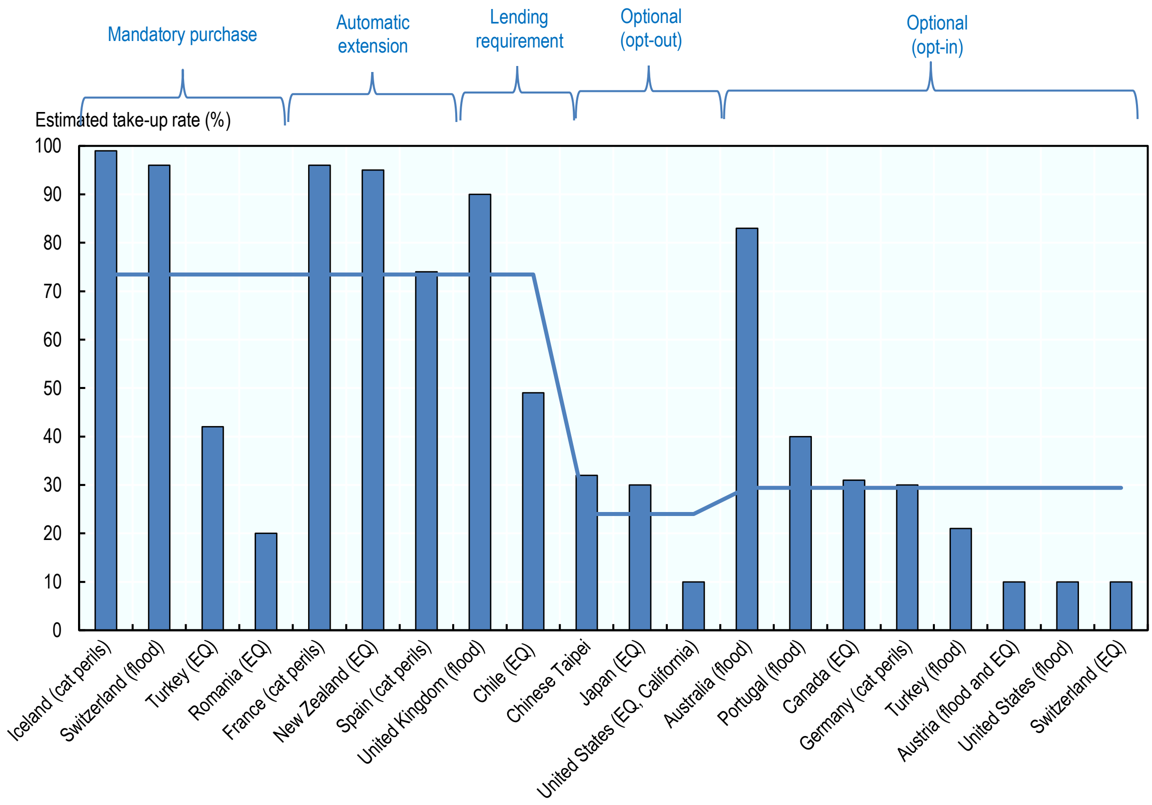
Insurance companies, intermediaries – and often insurance associations – play an important role in raising the awareness of households and businesses about the need for insurance coverage against catastrophe risks and actions that they can take to reduce their exposure to those risks. For insurance companies and intermediaries, the main opportunity to build awareness is at the time that insurance coverage is acquired – particularly where pricing for coverage is linked directly to the level of risk.

In all four case study countries, coverage for catastrophe perils is provided as an optional add-on coverage to standard property coverage (with the exception of coverage for *Storm, Typhoon, Cyclone, Tempest, Tornado, Hurricane, Flood or Inundation* in India which is included automatically). In Myanmar and India, insurance companies indicated that most policyholders acquire the additional coverage for catastrophe perils – although in Indonesia and the Philippines, policyholders (especially residential policyholders) do not. As noted above, a recent directive in Myanmar will allow insurers to offer policies providing coverage for businesses on all-risk basis (Gim et al., 2020[20]).

The insurance supervisors should consider encouraging (or mandating) insurance companies to offer catastrophe endorsements to all policyholders with a requirement for policyholders to specifically opt-out of acquiring that coverage. Insurance companies (or intermediaries) could also be required to provide specific information on risk exposure to policyholders in order to inform any decision on opting-out of acquiring coverage. Individuals tend to have a bias towards the default option when offered different options. As a result, differences in the default option offered often results in differences in take-up rates (e.g. in rates of organ donation or auto enrolment in defined contribution pension plans). This also seems to be true in the case of catastrophe insurance coverage decisions (see Figure 3.1).

Lenders can play an important role in ensuring adequate insurance coverage among the households and businesses they finance, particularly where the lending is secured against a property exposed to catastrophe perils. In many countries, lenders will require borrowers to hold adequate insurance coverage as a condition of the loan (or mortgage) – particularly in areas that are highly exposed to catastrophe perils. In some countries, banking supervisors impose requirements on lenders to ensure that the properties underlying their loans are adequately insured (based on financial stability objectives).

Figure 3.1. Impact of offering approach and loan requirements on insurance take-up rates



Note: In Switzerland, acquisition of catastrophe peril coverage is mandatory in some cantons (excluding earthquake). In Turkey, earthquake coverage is mandatory within municipal boundaries. The averages shown are calculated for three categories: (i) countries with some form of mandatory purchase, automatic extension or broad lending requirement; (ii) countries where coverage must be offered and policyholders are required to opt-out; and (iii) countries where catastrophe peril coverage is only offered as an additional optional coverage.
Source: (OECD, 2016[68]), (OECD, 2018[69])

Lenders in all of the case study countries normally impose conditions related to insurance coverage although these conditions do not always extend to catastrophe perils and may only be enforced at the time of loan origination (allowing policyholders to let their coverage lapse once the loan arrangement is in place).

None of the financial supervisors in the case study countries impose a specific requirement on lenders. In Indonesia and Myanmar, the insurance supervisor is also the banking supervisor and therefore the implementation of such a requirement might be more straightforward. Lender requirements for catastrophe peril coverage can play an important role in achieving higher levels of take-up.

Pricing and insurance affordability

As noted in section 1, the cost of insurance coverage for catastrophe perils is regulated in Indonesia, Myanmar and the Philippines. In the Philippines, a minimum rate is imposed. In Indonesia, a minimum and maximum rate are imposed. In Myanmar, a single rate is applied to catastrophe endorsements.

- In Indonesia and the Philippines, insurance companies tend to charge rates for catastrophe coverage at (or near) the minimum. Competition in the market constrains the ability of insurance companies to charge more – even in high-risk areas – as there will usually be a competitor willing to charge the minimum. In general, this has not led insurance companies to decline coverage for some regions or risks – although some insurance companies were concerned about their ability to achieve pricing adequacy in some high-risk regions and to ultimately manage the impacts of a catastrophic event. Pricing near minimum rates has likely contributed to relatively high loss ratios in both markets.
- In India, pricing for property insurance and catastrophe endorsements is liberalised (as of relatively recently) allowing insurance companies to charge premiums based on their perception of underlying risk (with pricing approaches subject to oversight by IRDAI as part of the product approval process). Loss ratios for property insurance in India appear to be higher than in Indonesia and the Philippines. However, insurance companies generally perceived market rates for property and catastrophe coverage as adequate – potentially based partly on the better underwriting performance achieved in the property line of business relative to other non-life lines of business. Indian insurers have also achieved relatively high returns on invested assets - which supports overall profitability and reduces the need to ensure profitable underwriting. Recent industry efforts to ensure adequate pricing for property insurance also appear to have improved pricing adequacy.
- In Myanmar, insurance companies have reportedly achieved lower loss ratios and have suggested that the pricing regime leads to premiums that are too high for the level of risk. Prices that are higher than necessary may limit the take-up of insurance coverage by households and businesses and could also lead larger policyholders to seek coverage from outside the domestic market.

The pricing approach of primary insurers will normally have an impact on access to reinsurance coverage:

- In the case of proportional reinsurance coverage, cedants and reinsurers share premiums and claims on a proportional basis meaning that the pricing charged by the primary insurer directly impacts the profitability of the arrangement for the reinsurer. Concerns about high loss ratios and pricing adequacy have likely contributed to a limited appetite among international reinsurers for providing proportional reinsurance coverage, particularly in India (for some cedants[43]) and the Philippines.
- Non-proportional reinsurance coverage is priced based on the expected loss for the reinsurer under the treaty or facultative arrangement – i.e. the probability that an excess-of-loss threshold (for example) will be exceeded by the claims paid by the cedant (within the scope of the agreement). The underwriting performance of the cedant will not directly impact the cost of non-proportional reinsurance coverage – although premiums paid for that coverage may account for a (unsustainably) significant share of premiums collected by the cedant if pricing for primary coverage is inadequate (i.e. making it more difficult for the cedant to achieve an underwriting profit). No concerns were raised in any of the case study countries about the willingness of international reinsurers to provide non-proportional reinsurance coverage.

While the availability of reinsurance coverage from domestic reinsurers has likely mitigated the impact of limited international reinsurance appetite for proportional coverage - it may also be facilitating continued under-pricing in the market. Given the role of domestic reinsurers in providing reinsurance coverage in India, Indonesia and the Philippines, domestic reinsurers should be encouraged to ensure adequate pricing for the risks that they reinsure. GIC Re has recently imposed a minimum pricing requirement in its reinsurance arrangements for occupancies/sectors that have been loss making which has reportedly had a positive impact on pricing adequacy and led to increased appetite among international reinsurers for extending proportional coverage. Nat Re's development of facultative facilities for specific lines of business also offers an opportunity to encourage improved underwriting in those lines of business.

While higher pricing for property insurance and catastrophe endorsement coverage in India, Indonesia and the Philippines would improve underwriting performance and access to reinsurance markets for cedants – it could also reduce take-up of insurance coverage if the higher premiums charged become unaffordable for (or beyond the willingness-to-pay of) a larger proportion of the population. Like any product, the price at which property insurance and catastrophe endorsements are offered will affect whether households and businesses are willing to acquire that coverage.

To mitigate the impact of higher (pure) premiums, regulators and supervisors could examine other drivers of the ultimate price paid by households and businesses, such as primary insurance distribution costs and premium taxes:

- The commissions charged (on average) by intermediaries to primary insurers in India, Indonesia and the Philippines are generally consistent, as a share of premiums, with the level of commissions charged for non-life business in OECD countries (10.7% on average in 2017[44]). Commissions appear to be slightly higher in the non-life sector in Indonesia and the Philippines than across the OECD and close to the regulated maximum in both countries. In Indonesia, some primary insurers raised concerns about the level of enforcement of the regulated cap on commissions. In India, commissions are lower than across the OECD although appear to be higher in the property line of business than in the non-life sector overall. Ensuring sufficient competition in the intermediation market – including authorisation for foreign-owned intermediaries – could support competitive pricing of commissions. Indonesia[45] and the Philippines allow significant foreign ownership of insurance intermediaries. In India, IRDAI recently published an amendment to its regulatory requirements that will allow full foreign ownership of insurance intermediaries which should support competition among intermediaries (Shah, Khemka and Chandramouli, 2019[70]).
- In the Philippines, premium taxes were identified as a significant concern by insurance companies. Taxes on premiums are imposed at the local and national levels and are estimated to account for approximately 27.5% of the premium. This is a significant rate and runs counter to national efforts to enhance financial resilience against disaster risks.

Technology and innovation can make an important contribution to the availability and affordability of insurance coverage. New sources of data on risk and exposure and new capabilities for analysing and processing this data can improve underwriting efficiency and reduce claims management expenses – and ultimately reduce the cost of insurance. New communications tools can support better risk awareness and offer new avenues for the distribution of insurance products. Products are being developed based on the availability of specific data sources, such as parametric insurance products that are underwritten and pay claims based solely on observable physical parameters. Insurance regulators and supervisors in the case study countries should consider necessary adaptations to regulatory requirements in order to allow (re)insurance companies and intermediaries to leverage new technologies while ensuring that policyholders are appropriately protected.[46] Regulatory sandboxes and innovation hubs, which allow (re)insurance companies and intermediaries to test new products and approaches in a controlled environment, offer one approach to assessing the suitability of new technologies for integration into insurance operations.[47]

Ultimately, regulators and supervisors in Indonesia, Myanmar and the Philippines should support a transition towards liberalised pricing of property insurance and catastrophe peril coverage. The price for insurance coverage, when based on the underlying level of risk, can provide an important signal to households and businesses about their level of exposure to catastrophe risks and the steps that can be taken to reduce that exposure (i.e. property-level risk mitigation). Regulated pricing blunts this pricing signal and impedes the ability of insurance companies to offer discounts for risk reduction behaviour (and therefore the incentive for policyholders to implement risk reduction measures). Some insurance companies in each of the case study countries supported more flexibility in pricing property insurance coverage.

To support such a transition regulators and supervisors could:

- Build supervisory capacity for overseeing the pricing approaches of insurers and reinsurers. In India, IRDAI has established an internal capacity for reviewing the pricing strategies of insurance companies as part of the product approval process.
- On an interim basis, allow liberalised pricing by insurance companies with a demonstrated capacity for sound underwriting. Such a capacity can be assessed based on the ability of companies to appropriately quantify risk at the level of individual policyholders, including through the use of catastrophe models. In Indonesia, insurance companies can receive a professional underwriter status that allows them to offer discounted pricing for lower risk policyholders with insured values of USD 100 million or more (with the level of authorised discount increasing with the level of sum insured) (OJK, 2017[21]). In the Philippines, insurance companies can seek authorisation from the Insurance Commission to use their own pricing approach (and derogate from the regulated pricing regime).
- Ensure that reinsurers are establishing adequate pricing for proportional reinsurance arrangements. This could include a benchmarking of domestic reinsurer pricing against pricing offered in international markets. As noted above, under-pricing for proportional coverage by reinsurers can facilitate under-pricing by primary insurers, especially where the proportional arrangement cedes a large share of premiums and claims to the reinsurer. Pricing discipline in the reinsurance market can support pricing discipline in the primary market.

Access to reinsurance

Oversight of cedant risk transfer

As noted above, the oversight of cedants' transfer of risk to reinsurance markets involves four main elements: (i) supervisory review of cedants' reinsurance programmes; (ii) retention limits; (iii) capital requirements; and (iv) approval of the types of reinsurance arrangements that can be recognised. Supervisory oversight should be focused on ensuring that cedants are effectively protected through their reinsurance arrangements and that they are managing counterparty, execution and liquidity risk in their reinsurance programmes. Given the significant use of reinsurance by cedants in India, Indonesia and the Philippines, this element of the oversight framework is particularly important.

Reinsurance programmes

In India, Indonesia and the Philippines, supervisors collect information from primary insurers on their reinsurance arrangements. In India and Indonesia, the information is provided for all types of reinsurance arrangements (proportional/non-proportional, facultative/treaty) while in the Philippines, the information has only been provided for treaty arrangements[48] (the Insurance Commission has begun to collect information on facultative arrangements). In Myanmar, information on treaty and facultative reinsurance arrangements will be collected with the implementation of the Reinsurance Directive.

In Indonesia and the Philippines (and soon Myanmar), the required submission of information on reinsurance arrangements is focused on providing the parameters of the reinsurance arrangements across each line of business – i.e. retention limits, ceded premiums and commissions (Insurance Commission, 2018[47]), (OJK, 2015[45]). In Indonesia, cedants are required to submit a reinsurance programme (*ex ante*) and reinsurance placement report (*ex post*). In the Philippines, cedants are only required to submit a report on treaty arrangements made (*ex post*). Information on the individual reinsurers involved in assuming risk from the cedant is provided in the *ex post* reports.

In India, the supervisory requirements appear to be more principle-based. IRDAI has established a set of objectives which cedants' reinsurance programmes should aim to achieve, including maximising retention within India (while ensuring adequate risk diversification) and securing the best coverage for the protection of policyholders at a reasonable cost (amongst others). Cedants are required to submit a Board-approved reinsurance programme (which is consistent with the guidance in ICP 13 – as below) before placements are made and then a revised programme based on actual arrangements implemented. The parameters of individual reinsurance arrangements (retention, limits, commissions) must also be provided as part of the reinsurance programme submission.

The IAIS' Insurance Core Principle 13 on Reinsurance and Other Forms of Risk Transfer (ICP 13) provides guidance on the elements of a cedant's reinsurance programme that should be assessed by the supervisor. These include (among others[49]):

- The share of business ceded and the extent to which retained risk are within the financial capacity of the cedant: While supervisors in India, Indonesia and the Philippines appear to collect information on the share of business ceded and retained across business lines, only India and Indonesia seem to require cedants to link retention levels under reinsurance arrangements to financial capacity. In India, cedants are required to establish a retention policy for each line of business that is commensurate with its financial capacity. In Indonesia, cedants are required to submit a specific projection of underwriting surplus net of reinsurance arrangements put in place. Myanmar's Reinsurance Directive will also require insurers to make this link
- The financial strength and claims payment record of the reinsurers assuming risk and level of exposure to a single reinsurer (i.e. concentration risk): Cedants in Indonesia and the Philippines are required to submit information on the individual reinsurers assuming risk from the cedant in each line of business, including the credit rating of the reinsurer - which would allow for an assessment by the supervisors in Indonesia and the Philippines of concentration risk. In India, cedants are required to take concentration risk into account in the development of their reinsurance programme and must also submit information on individual placements on an *ex post* basis. All three countries also address concerns about the financial strength of reinsurers assuming risk through minimum rating requirements for authorised reinsurers (as discussed below). The claims payment record of reinsurers assuming risk does not seem to be a factor in the supervisory review of reinsurance programmes in any of the three countries although Myanmar's Reinsurance Directive allows for oversight of the claims payment record of foreign reinsurers by the Insurance Business Regulatory Board.
- The expected resilience of the reinsurance programme if stressed, including as the result of one or more catastrophic events: In India and Indonesia, cedants are required to consider catastrophe exposures and potential accumulation risk in developing their reinsurance programmes (insurers in Myanmar will also be required to undertake such an assessment). In India, cedants are required to provide specific reporting on catastrophe modelling estimates and return periods to support the purchase of reinsurance. In Indonesia, cedants must demonstrate their capacity to withstand a catastrophic event with a 1-in-250 year return through their retention and reinsurance arrangements. In the Philippines, reporting on treaty arrangements must include information on any clauses in reinsurance contracts that might limit the liability of the reinsurer or increase the exposure of the cedant (which may be particularly relevant in the context of a catastrophe event).

In India, cedants are required to include information on reinstatement provisions in reinsurance contracts which may become critical should a cedant face more than one catastrophe event in a given year.

In Indonesia and the Philippines, the reinsurance programme requirements are also applicable to retrocession arrangements (i.e. to retrocedants). In India, the requirements are only applicable to primary insurers/cedants.

Some amendments to reinsurance programme requirements could be considered in these three countries to achieve a greater level of consistency with the recommendations of ICP 13 – and ultimately improve the oversight of cedants' risk transfer:

- In India, the principles-based approach and the involvement of the board in reinsurance programme approval is consistent with the approach recommended in ICP 13. A principles-based approach properly allocates responsibility to cedants for the management of reinsurance risk and likely provides the supervisor with a greater-level of discretion in terms of its review of cedants' risk transfer programmes. IRDAI should ensure that it receives the information necessary to oversee concentration risk in cedants' reinsurance programmes and could also require cedants to explicitly take into account the claims payment record of assuming reinsurers. It also should ensure that reinsurers' retrocession programmes are subject to a similar level of scrutiny as cedants' reinsurance programmes.
- In Indonesia, consideration could be given to developing principles for cedants' reinsurance programmes in order to guide the development of those programmes. The current system appears to be based on the submission of relevant data which allows for a supervisory review by OJK in order to identify any credit, concentration or catastrophe risk in a cedant's (or retrocedant's) reinsurance arrangements. Establishing a set of principles could encourage cedants to explicitly consider these risks in reinsurance programme development. Similar to India, the claims payment record of reinsurers could be included as a specific criteria to complement the financial strength assessments provided by credit ratings.
- In Myanmar, the Reinsurance Directive has established a set of principles for cedants' reinsurance programmes as well as submission requirements that, once implemented, will allow for extensive supervisory review. FRD and the Insurance Business Regulatory Board may wish to consider gathering information on reinstatements and ensure that similar requirements are applied to domestic reinsurers' retrocession programmes.
- In the Philippines, consideration could be given to developing a single set of guidance on the submission of reinsurance programmes by cedants applicable to all treaty and facultative arrangements. The guidance could include a set of principles for cedants and retrocedants to take into account in reinsurance/retrocession programme development – and should include criteria linking retention levels to financial capacity and integrating the claims payment record of reinsurers.

The insurance supervisors in all four countries should also require cedants to assess the potential impact of their reinsurance arrangements on liquidity management. As noted above, the payment of large or many claims in the aftermath of a large catastrophe event could create liquidity risks for the cedant if there is a delay in receiving payments from a reinsurer on transferred risk. Cedants should be able to demonstrate their ability to mitigate this risk through, for example, the use of short-term lines of credit or accelerated payment clauses arranged with assuming reinsurers (IAIS, 2019[71]).

In all four countries, as supervisory capacity develops and stress testing practices are implemented, reinsurance arrangements should become a critical component of stress testing of primary insurers – i.e. stress testing should integrate scenarios involving: (i) the failure of a significant reinsurance/retrocession counterparty; (ii) liquidity risks for the cedant in the event of a large-scale catastrophe; or (iii) the inability of cedants (or retrocedants) to secure reinstatements after a significant catastrophe. As discussed below, the relatively high-level of concentration of risk in domestic reinsurers reinforces the need for stress testing.

Box 3.1. Reinsurance programme review: some international practices

Insurance supervisors in Australia, Canada and Singapore require cedants to develop reinsurance management strategies or policies and review these strategies on at least an annual basis (or in response to a change in market conditions). In Australia and Singapore, reinsurance management strategies must be approved by the Board and submitted to the insurance supervisor annually. In Canada, the Board and senior management are responsible for the cedant's reinsurance risk management policy and must make the policy available to the supervisor upon request.

The strategies in all three countries are focused on ensuring that cedants have clearly identified: (i) their risk tolerance, retention strategy and objectives for the use of reinsurance; (ii) a process for selecting reinsurance counterparties that takes into account the creditworthiness of reinsurers and diversification in the reinsurance programme; and (iii) the potential for execution risks based on differences in coverage terms and conditions, legal frameworks related to insolvency and recovery, delays in payments from reinsurers (liquidity risk) and/or challenges related to reinstatements.

The Australian Prudential Regulation Authority (APRA) and the Monetary Authority of Singapore (MAS) also require cedants to submit information annually on their reinsurance arrangements. APRA requires cedants to submit: (i) a schematic overview of the insurer's reinsurance arrangements (effect of occurrence, aggregate deductibles and any arrangements that limit reinsurers' liability, such as reinstatements, loss participation clauses or event limit clauses); (ii) details related to each participating reinsurer; and (iii) estimates of the cedant's highest possible gross loss (including modelled estimates of probable maximum loss) and the contribution of reinsurance arrangements to reducing overall exposure. MAS requires cedants to submit data on premiums retained and ceded by type of reinsurance (facultative, quota share and other proportional treaties and stop loss and excess of loss treaties) as well as applicable information on triggers, deductibles, participating reinsurers and reinstatements. Cedants in Singapore are also required to submit annual information on their exposure to their ten largest reinsurers including the amount of outstanding reinsurance recoverables and the length of time that those recoverables have been outstanding.

The Office of the Superintendent of Financial institutions (OSFI) in Canada requires cedants to make information on reinsurance arrangements available upon request. Cedants are expected to undertake (and document) their own due diligence on reinsurance counterparties, including assessments of their claims payment record, expected future claims obligations, balance sheet strength, funding sources and retrocession arrangements as well as the legal and insolvency framework in the reinsurer's home jurisdiction. Information on cedants' due diligence and internal stress testing of their reinsurance programme must also be made available to OSFI upon request.

Source: (APRA, 2013[72]), (APRA, 2008[73]), (OSFI, 2019[74]), (MAS, 2013[75]).

Quantitative retention requirements

As noted above, quantitative retention requirements can be imposed on cedants in order to ensure that a minimum level of risk is retained (encouraging sound underwriting) and/or to ensure that cedants do not retain risks beyond their financial capacity. Quantitative retention requirements are in place for some lines or types of business in all four case study countries.

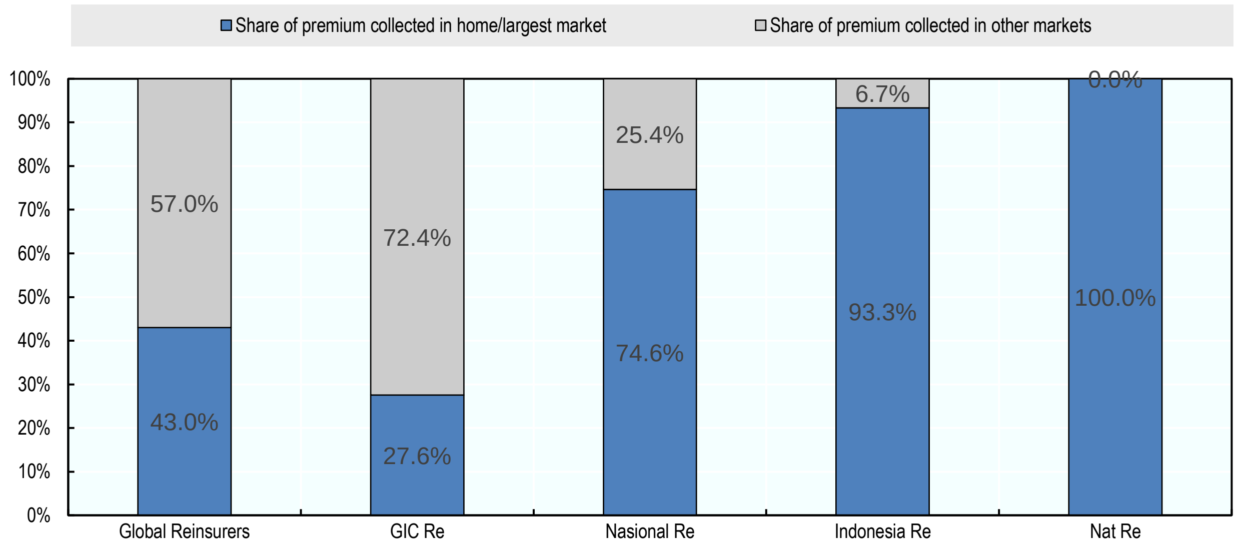
The minimum retention requirements applicable to primary insurers in Indonesia appear to be fairly high (0.75% to 1.5% of equity, up to IDR 15 billion (approximately USD 1 million) for property depending on the size of the company) and may be higher than required to encourage sound underwriting and prevent fronting arrangements. However, the primary insurance companies consulted did not raise any concerns with this requirement suggesting that it is not inconsistent with their normal business practices. IRDAI and the Insurance Commission indicated that they also wish to discourage fronting arrangements and are considering specific measures. In India (and soon, Myanmar), cedants' are required to ensure that their reinsurance arrangements do not involve fronting.

While fronting may be a form of regulatory arbitrage[50] that should generally be discouraged, there are some types of risk for which arrangements similar to fronting may be economically efficient. For example, international programmes, which provide insurance coverage for the activities of multinational companies in multiple countries, are often managed by global insurers through group pooling arrangements. In such arrangements, local branches or subsidiaries of the global insurer issue local policies for the multinational corporation to cover local risks and complement the coverage provide by a multinational company's master policy. Where allowed, the local risk is then transferred to a group entity in order to manage the group risk centrally. Minimum retention requirements imposed on local offices could impede the functioning of these arrangements. In Indonesia, insurance coverage designed specifically for multinational corporations is exempt from local placement requirements (but not from minimum retention requirements) which appears to be a recognition of this business model. OJK may wish to consider a similar exemption from minimum retention requirements – while IRDAI, FRD and the Insurance Commission may wish to consider the international programmes' business model when developing (any further) measures to discourage fronting.

Domestic reinsurers are subject to the same minimum retention requirements as primary insurers in Indonesia and the Philippines. In India, domestic reinsurers and branches of foreign reinsurers are required to retain 50% of the risk that they assume from Indian cedants (with the exception of reinsurers operating in GIFT who can retrocede up to 90% of the risk that they assume). While the retention levels of domestic reinsurers in India, Indonesia and the Philippines appear to be lower than global reinsurers (large global reinsurers retain approximately 85% - 90% of the risk that they assume (OECD, 2018[42])), the risk assumed by Nat Re and the Indonesia reinsurers is much less diversified[51] than the risk assumed by global reinsurers that pool risks from around the world (see Figure 3.2). As a result, global reinsurers would have a more limited need to make use of retrocession to address concentration risk (and therefore higher retention levels may make sense).

The 50% minimum retention requirement applicable to foreign reinsurer branches in India – while contributing to the regulatory objective of maximising retention in India – is likely high given that branches tend to transfer risk to group parent companies in order to build a pool of globally diversified risks. However, the foreign reinsurer branches, who committed to this requirements as part of their registration in India, did not raise significant concerns about this requirement as investment returns on premiums retained in India have been high high relative to investment returns available in other markets. This may change if investment returns in India decline or as reinsurers establish offices in GIFT where minimum retention requirements are much lower (10% vs. 50%).

Figure 3.2. Share of property premiums assumed in largest (home) market



Note: The figure for global reinsurers is a weighted average of property premiums assumed in the reinsurer's largest market as a share of property premiums assumed across the 30 largest property and casualty insurance markets for seven large global reinsurers based on data provided to the OECD (2016 data year). The figures for GIC Re are for the 2018-19 fiscal year. Figures for the Indonesian domestic reinsurers are for 2018. Nat Re is assumed to assume close to 100% of its property premiums in the Philippines as the reinsurer does not undertake significant business in other markets.
Source: (GIC Re, 2019[63]), (OJK, 2019[11]) and data provided to the OECD by global reinsurers.

The maximum retention requirements applicable to primary insurers and reinsurers in Indonesia and the Philippines do not appear to have a significant impact on business practices as primary insurers and reinsurers tend to make fairly significant use of reinsurance (and retrocession) relative to primary insurers and reinsurers based in OECD markets. However, the (de facto) maximum retention limit that triggers the co-insurance arrangement in Myanmar appears to be low relative to the risk appetite of the private insurance companies. According to some private insurers, the relatively low retention limit means that a significant proportion of their business is subject to the mandatory co-insurance arrangement (potentially close to 50% for the larger private insurers). As noted, the co-insurance arrangement is expected to become obsolete with the implementation of the new Reinsurance Directive in Myanmar.

Ultimately, the supervisors in all four case study countries may wish to consider a principles-based approach to ensuring that primary insurers and reinsurers are properly managing their reinsurance and retrocession arrangements. There may be instances where primary insurers will wish to retain almost no risk or all of the risk for a given policy or portfolio of policies which quantitative limits may not allow.

Capital treatment

As noted above, reinsurance (and retrocession) ultimately allows cedants (and retrocedants) to transfer risk to third parties and therefore reduce the amount of capital and reserves that must be held to cover liabilities to policyholders. Capital and reserve requirements applicable to insurers and reinsurers, which are established to ensure that companies have sufficient assets to meet their obligations, should recognise when risk has been effectively transferred to third parties – otherwise there would be little benefit for the insurer or reinsurer in seeking reinsurance or retrocession coverage as they would need to pay premiums to the reinsurer or retrocessionaire while also holding capital and reserves for the transferred risk. In India, Indonesia and the Philippines, capital and/or reserve requirements are established net of reinsurance/retrocession.

However, reinsurance/retrocession is an imperfect substitute for assets held as capital and reserves as the payment of claims by reinsurers or retrocessionaires is subject to counterparty and execution risk – i.e. the risk that the reinsurer/retrocessionnaire will be unable to meet its obligations to the cedant/retrocedant or that the payments made by the reinsurer/retrocessionnaire are materially different from what was expected by the cedant/retrocedant. Capital and/or reserve requirements could potentially be calibrated to account for counterparty and/or execution risk – and this is normally accomplished through either a reduction in the capital credit provided for liabilities transferred to reinsurance markets that varies based on credit risk or a capital credit risk charge applied to reinsurance recoverables. Reductions in capital credit or counterparty risk charges are normally applied under risk-based capital frameworks.

Indonesia and the Philippines have risk-based capital frameworks that include a credit risk charge on reinsurance recoverables. In the Philippines, charges are based solely on the credit rating of the reinsurer. In Indonesia, the applicable credit risk charge is higher for foreign reinsurers than for domestic reinsurers (domestic reinsurers are treated like AAA-rated foreign reinsurer).[52] The credit risk charges applied in Indonesia are also significantly higher than the charges applied in the Philippines (1.5% to 6.0% relative to 2.8% to 12.0%).

Credit ratings are an imperfect (if difficult to replace) measure of credit risk in reinsurance recoverables. Most (but not all) credit rating agencies apply a sovereign ceiling to credit ratings of state-owned and private reinsurers (and other financial institutions) which leads to lower credit ratings for reinsurers based in countries where the sovereign rating is lower. As a result, some upward adjustment may be required to ensure fair treatment of domestic reinsurers who would otherwise be at a disadvantage relative to their competitors in jurisdictions where sovereigns have a higher rating.[53] However, the treatment of Indonesian reinsurers as AAA-rated foreign reinsurers is likely too large an adjustment and creates an incentive for cedants to place reinsurance with domestic reinsurers in order to benefit from a lower credit risk charge on their reinsurance recoverables.

As discussed below, there may also be other ways to reduce the counterparty risk related to risk transfer to foreign reinsurers which might allow for a reduction in credit risk charges. For example, the requirement in the Philippines for resident agents to be authorised through a power of attorney to receive notices, summons and legal processes on behalf of the foreign reinsurer may provide the Insurance Commission with some confidence that disputes over reinsurance recoverables may be resolved in the Philippines (therefore reducing the risk of default on recoveries due to cedants and the need for higher counterparty credit risk charges).

As India and Myanmar develop risk-based capital frameworks, credit risk charges offer an appropriate mechanism for ensuring that counterparty risks are properly captured in capital requirements and should be calibrated based on assessments of the financial capacity of the reinsurer. The new Reinsurance Directive in Myanmar will allow the Insurance Business Regulatory Board to apply risk charges in the future.

Box 3.2. Counterparty credit risk charges for reinsurance recoverables (Australia and Indonesia)

As in Indonesia, cedants in Australia face different capital requirements based on the characteristics of the reinsurer counterparty. In Australia, the credit risk charge (default charge) applied to reinsurance recoverables due from reinsurers that are authorised by APRA (domestic reinsurers as well as branches and subsidiaries of foreign reinsurers) are lower than the credit risk charges applied to reinsurance recoverables from non-APRA authorised reinsurers. However, APRA's credit risk charges are generally lower and the difference between the charge applied to the different categories of reinsurance counterparties is mostly smaller, particularly for reinsurers with credit ratings below AA (which, as noted above, captures most of the largest international reinsurers).

Table 3.1. Credit risk charges for reinsurance recoverables in Australia and Indonesia

	Indonesia Domestic reinsurers	Indonesia Foreign reinsurers	Australia APRA-authorised	Australia Non-APRA-authorised
AAA	2.8%	2.8%	0%	2%
AA- to AA+	2.8%	4.0%	2%	4%
A- to A+	2.8%	6.0%	4%	6%
BBB- to BBB+	2.8%	12.0%	6%	8%
BB- to BB+	2.8%	15.0%	8%	12%
B- to B+	N/A	N/A	12%	20%
Below B-	N/A	N/A	20%	20%

Source: (OJK, 2017[50]), (APRA, 2019[76]), (APRA, 2018[77]).

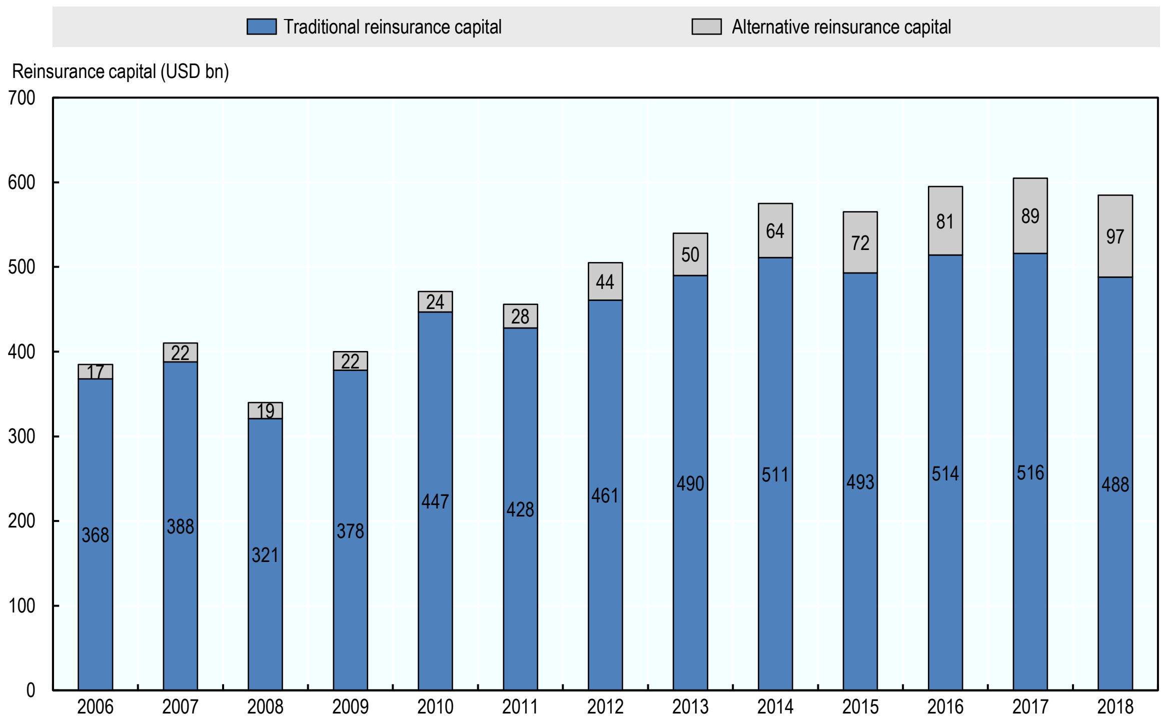
The need for high credit risk charges in Australia for reinsurance recoverables due from cross-border reinsurers may be reduced by other measures imposed on cedants in their selection of reinsurers, including requirements related to adherence to home supervisory capital requirements and conditions related to disputes (as outlined below) (APRA, 2013[72]), (APRA, 2008[73]).

Alternative risk transfer

Insurance regulators and supervisors may (or may not) recognise cedants' risk transfer to alternative reinsurance markets as an authorised/effective transfer of risk that would lead to a reduction in the cedants' policyholder liabilities. Currently, none of the supervisors in the case study countries recognise risk transfer to alternative reinsurance markets as an authorised/effective transfer of risk although cedants (or retrocedants) in India are able to seek supervisory authorisation/recognition on a case-by-case basis.

Risk transfer to alternative reinsurance markets accounts for an increasing share of the reinsurance (and retrocession) capacity made available to cedants (and retrocedants) (see Figure 3.3). Depending on the calculation method, alternative reinsurance markets accounted for 15% to 20% of the reinsurance capacity made available in 2018 (relative to 5% or less before 2010).

Figure 3.3. Global reinsurer capital



Note: Estimates of reinsurance capital levels from Aon Benfield are approximately 30% higher for traditional reinsurance capital and 10% higher for alternative reinsurance capital than estimates by Guy Carpenter/A.M. Best. The Guy Carpenter/A.M. Best methodology excludes capital dedicated by reinsurers to underwriting primary insurance.
Source: (Aon Benfield, 2018[78]), (A.M. Best, 2017[79]), (Guy Carpenter, n.d.[80]), (Global Reinsurance, 2018[81]), (Aon, 2020[82]).

Alternative risk transfer leads to some different supervisory considerations:

- Counterparty risk is somewhat reduced as funds are raised and placed in a special purpose entity for the full limit (net of premiums). To reduce counterparty risk, the special purpose entity should be structured to ensure that the claims of the investors are subordinate to the claims of the ceding insurer and that investors in the special purpose entity have no recourse to the ceding insurer in the event of a loss (IAIS, 2019[71]). In addition, as these funds are invested, there is a risk that the collateral could be insufficient to pay out the full limit at the time that the reinsurance coverage is triggered (e.g. if there is a significant market disruption that leads to a reduction in the value of the invested funds (market risk) - although investments are usually limited to low risk assets).
- As some (but not all) alternative risk transfer arrangements are designed to trigger based on a non-indemnity trigger (e.g. parametric, modelled loss or industry loss), execution risk could materialise if there is a mismatch between the payout and cedant's actual losses (i.e. basis risk).

Box 3.3 provides an overview on how these considerations have been addressed in the European Union (as an example).

Box 3.3.Recognition of alternative risk transfer in the European Union

In the European Union, Solvency II provides a framework for the recognition of alternative risk transfer as a risk mitigant for cedants in the calculation of their capital requirements on a similar basis as risk transfer to (traditional) reinsurance companies:

- capital requirements are calculated taking into account "risk mitigation techniques" (Article 101) which includes "all techniques which enable insurance and reinsurance undertakings to transfer part or all of their risks to another party" (Article 13);
- capital requirements for counterparty default risk should include the reinsurance arrangements entered into with reinsurance companies as well as the securitisations and derivatives used in alternative risk transfer and take into account any collateral or other security held by or for the account of the cedant (which allows for recognition of the funded nature of alternative risk transfer arrangements) (Article 105); and
- a definition of "special-purpose vehicle" (the "reinsurer" in alternative risk transfer) is included in Solvency II as an undertaking that "fully funds its exposure…through the proceeds of a debt issuance or any other financing mechanism" and "where the repayment rights of the providers of such debt or financing mechanism are subordinated to the reinsurance obligations of such an undertaking" which reduces the counterparty default risk for the cedant (Article 13).

In 2015, the European Union issued an Implementing Regulation outlining procedures for supervisory approval of special purpose vehicles that assume insurance risk from cedants as well as provisions for reporting and information exchange. In 2015, the European Insurance and Occupational Pensions Authority (EIOPA) issued guidance on how supervisors should assess the materiality of basis risk (a type of execution risk in alternative risk transfer arrangements that involve non-indemnity triggers) in order to determine whether an alternative risk transfer arrangement should be recognised as a risk mitigation technique for the purposes of capital requirements.

Source: (European Commission, 2009[83]), (European Commission, 2015[84]), (EIOPA, 2015[85]).

The insurance regulators and supervisors in all four case study countries should develop a framework for recognising alternative risk transfer as authorised/effective reinsurance arrangements, taking into account the different credit (market) and execution risks that may arise in the use of these instruments. This would allow cedants (and retrocedants) to access an increasingly important source of reinsurance capacity (including in Asian reinsurance markets - see Box 3.4).

Box 3.4. The development of alternative risk transfer markets in Asia

The regulatory frameworks and industry infrastructure (such as loss indices) that are prerequisites for the development of alternative risk transfer markets are increasingly being implemented within Asia:

- In 2017, the Monetary Authority of Singapore (MAS) developed a licensing framework for special purpose reinsurance vehicles and made necessary amendments to the Securities and Futures Act to support the issuance of insurance-linked securities such as catastrophe bonds. To support the market's development, MAS has also established a grant programme to fund up to SGD 2 million of the upfront legal and marketing costs linked to issuing insurance linked-securities. As of the end of 2019, there were at least two issuances by insurance companies under this framework.
- In mid-2019, regulators in Hong Kong, China developed a roadmap for establishing an enabling regulatory framework for insurance-linked securities (Insurance Day, 2019[86]). Draft legislation to establish the necessary regulatory framework was introduced in 2020 (Lim, Spitzer and Yu, 2020[87]).
- The major providers of the insured loss indices that are often used in the design of insurance-linked securities are expanding into Asia and one has recently begun reporting aggregate insured losses in a number of Asian countries (including Indonesia, Myanmar and the Philippines, amongst others) (Insurance Journal, 2019[88]), (Jamie, 2019[89]).

The Philippines Government has also recently issued a catastrophe bond with the support of the World Bank in order to transfer some of the costs related to the reconstruction of public assets in the aftermath of a natural catastrophe.

Oversight of reinsurance placements

Authorised reinsurers

As noted, insurance regulators and supervisors will normally impose requirements on the reinsurance companies that are authorised to assume risk from domestic cedants, whether they are domestically-incorporated reinsurers, branches of foreign reinsurers or foreign reinsurers assuming risk on a cross-border basis. The purpose of these requirements should be to ensure that the reinsurers assuming risk from domestic cedants will have the necessary financial strength to meet their obligations to cedants on an ongoing basis – while not unnecessarily impeding the availability of reinsurance.

For domestically-incorporated reinsurers, this objective can be achieved through normal supervisory practices (licensing, capital requirements, oversight of retention and retrocession programmes, etc.). In India, Indonesia and the Philippines, supervisors appear to have the necessary supervisory powers and authorities to oversee both state-owned and privately-owned domestic reinsurance companies and ensure their ability to meet their obligations to cedants. There do not appear to be any major (or excessive) impediments to the establishment of reinsurance companies in India, Indonesia or the Philippines although it is not possible to establish a reinsurance company with foreign ownership in India.[54] The requirements for establishing a reinsurance company in Myanmar have not been established.

With respect to foreign reinsurers without a local operation, this objective can be most efficiently and effectively achieved through cooperation with – and reliance on – the supervision of the reinsurer by the home supervisor. As recommended in the IAIS's Insurance Core Principle on Reinsurance and Other Forms of Risk Transfer, "the supervisor can benefit from relying on supervision performed in the jurisdiction of the reinsurer" including in terms of "strengthened supervision as well as a more efficient use of resources by the supervisor of the ceding insurer" (IAIS, 2019[71]). In most (if not all) home jurisdictions, reinsurers are supervised on a consolidated basis, taking into account all of the liabilities assumed in foreign jurisdictions through branches or on a cross-border basis. The Swiss Solvency Test, for example, incorporates all of a reinsurer's domestic and foreign liabilities in its assessment of the reinsurer's capital adequacy.

To support reliance on home supervision of foreign reinsurers, the IAIS guidance further recommends that supervisors "should consider putting a formal supervisory recognition arrangement in place" where supervision of cedants' reinsurance arrangements takes into account home supervision of foreign reinsurance providers (IAIS, 2019[71]). While the insurance supervisors in most of the case study countries have entered into information sharing arrangements with foreign supervisors (either bilaterally or as adherents to the IAIS Multilateral Memorandum of Understanding[55]), none of the case study countries appear to rely (at least not exclusively) on these arrangements in their oversight of the reinsurers authorised to assume risks from domestic cedants. In India and the Philippines, foreign reinsurers wishing to assume risk on a cross-border basis are required to confirm that they have a license for reinsurance business in their home country as part of the registration (and must also provide their solvency ratio to IRDAI) - in addition to submitting non-supervisory information on financial capacity (and meet a (relatively low) minimum credit rating requirement of BBB to assume risk in India). However, there does not appear to be any mechanism for an ongoing exchange of supervisory information on reinsurers' financial capacity with home supervisors. In Myanmar, similar requirements will apply to foreign reinsurers although without a registration process. In Indonesia, there does not appear to be any explicit reliance on the supervision undertaken in the foreign reinsurers' home jurisdiction (in Indonesia, authorised reinsurers must only meet a minimum credit rating requirement of BBB[56]) although recent amendments to reinsurance placement requirements provide for the establishment of bilateral arrangements that will reduce domestic placement requirements.

As part of an agreement to eliminate collateral and local presence requirements for reinsurers wishing to assume risk on a cross-border basis, the United States and the European Union (and the United States and the United Kingdom) have concluded "covered agreements" that include a set of information exchange requirements that could serve as a model in other countries for authorising reinsurers to assume risk on a cross-border basis (United States of America and European Union, 2017[90]), (United States of America and United Kingdom, 2018[91]). The requirements include:

- a minimum capital requirement (EUR 226 million or USD 250 million) applicable at the parent level and a minimum solvency ratio requirement based on the requirements of the reinsurer's home jurisdiction;[57]
- a requirement for the reinsurer to promptly notify the supervisor in the host jurisdiction if its solvency ratio falls below the minimum required in the agreement or if any other regulatory action for serious noncompliance with applicable law is taken by the home supervisor; and
- a requirement for the reinsurer to submit audited financial statements, the solvency and financial condition report or actuarial opinions filed with the home supervisor, a list of all disputed and overdue reinsurance claims outstanding for 90 days or more in the host jurisdiction (updated semi-annually) and information on all premiums assumed from cedants in the host jurisdiction (updated semi-annually).

Insurance supervisors in host jurisdictions might also be concerned about the ability of cedants to assert claims against a reinsurer in the event of a dispute, particularly where the reinsurer has no assets located in the jurisdiction of the cedant. In India, foreign reinsurers have been encouraged to establish local branches with paid-up capital. In the Philippines, foreign reinsurers must have a resident agent with power of attorney to receive notices, summons and legal processes and are subject to a paid-up capital requirement if they have credit ratings below AA (which makes this requirement similar to the requirements normally imposed on a branch). The pledging of assets locally through capital requirements – combined with the legal status of the foreign reinsurers' local representation – may provide some security to cedants that they will have recourse to the assets of the reinsurer through the domestic legal system in the case of a dispute.

The paid-up capital requirements imposed on foreign reinsurer branches in India and on reinsurers rated below AA in the Philippines are consistent with (in the case of the Philippines) - or less stringent than (in the case of India) - the capital requirements imposed on domestically-incorporated reinsurers. The net-owned fund requirement applied in India is high (much higher than the minimum requirement under the US-EU and US-UK covered agreements) which likely impedes smaller international reinsurers from establishing branches. Foreign reinsurer branches in India also raised concerns about high tax rates relative to domestically-incorporated reinsurers (as well as cross-border reinsurers).[58] The credit rating threshold in the Philippines is also relatively high (only four of the largest 50 global non-life reinsurers had a credit rating of AA or above in 2017) which means that providers of a large share (close to 90%) of global reinsurance capacity would be subject to the paid-up capital requirement.

India, given the size of its population and economy, has been successful in encouraging a number of foreign reinsurers to establish local branches – likely at least partly due to the integration of foreign reinsurer branches into the preferential placement regime. However, it is not certain that other countries would be similarly successful were they to make a similar effort. The business model of global reinsurance companies relies on the ability to manage assets and liabilities on a global basis which makes them reluctant to tie up capital in many jurisdictions in order to support branches or other legal entities. For example, one of the largest global reinsurers has only established branches (or subsidiaries) in nine of the 30 largest non-life insurance markets.

Under the US-EU and US-UK covered agreements, a number of requirements have been imposed in order to provide cedants with some protection against non-recognition by foreign reinsurers of judgements in domestic courts. Foreign reinsurers must:

- provide written confirmation of consent to the jurisdiction of the courts where the cedant is domiciled;
- provide written confirmation of consent for the host supervisory authority to act as agent for the service of legal processes;
- provide written confirmation of consent to pay all final judgements obtained by a ceding insurer that have been declared enforceable in the territory where the judgment was obtained; and
- agree to provide 100% collateral for any reinsurance agreement if the foreign reinsurer resists enforcement of a final judgement that is enforceable under the law of the territory in which it was obtained or a properly enforceable arbitration award.

Other insurance supervisors also impose requirements related to dispute settlement in cedants' reinsurance agreements. In Australia, APRA requires all reinsurance contracts entered into by an APRA-regulated insurer to ensure that the governing law of the reinsurance contract is Australian law and that any disputes are to be heard in an Australian court (APRA, 2013[72]). In Canada, OSFI requires that OSFI-supervised cedants specify the forum for disputes in their reinsurance arrangements as Canada or another equivalent legal jurisdiction (OSFI, 2019[74]).[59] These types of requirements (although the covered agreements are relatively new and not yet thoroughly tested) would appear to provide some protection to cedants in the case of a dispute with a foreign reinsurer (and likely provide at least a similar level of protection as the resident agent requirements imposed in the Philippines).

The insurance regulators and supervisors in the case study countries should take into account some of the innovative information exchange provisions and cedant protections included in the US-EU and US-UK covered agreements in future revisions to (or the development of) frameworks for authorising reinsurance companies that can assume risk from cedants in their jurisdictions. While the covered agreements are reciprocal arrangements between large insurance markets, a specific bilateral agreement would not likely be necessary to replicate the information exchange provisions and cedant protections contained in the agreements as these involve information provision commitments by the reinsurance companies, not the supervisor (although the supervisors in the case study countries would need to ensure that they are comfortable with the supervisory requirements established by the home supervisor). One option that could be considered would be to allow reinsurers to abide by similar provisions as those contained in the covered agreements as an alternative to the existing registration requirements (and paid-up capital requirements in the Philippines).

Requirements related to reinsurance placement

As noted above, cedants in India, Indonesia, the Philippines (and soon in Myanmar) are required to either place or offer some or all of their reinsurance placements to domestically-incorporated reinsurers. Some of these requirements seem to be clearly aimed at ensuring that cedants are transferring risk to financially-sound reinsurers, including the credit-rating based participation limits on transferring risk to cross-border reinsurers in India, Indonesia and Myanmar and the registration requirements necessary for assuming risk in India and the Philippines. However, other requirements appear to be aimed at retaining premiums (and investment) locally and/or supporting local insurance market development and local reinsurers by providing domestically-incorporated reinsurers (or insurers) with placement preference over foreign reinsurers.

Box 3.5. Currency transfers in international reinsurance transactions

The retention of premiums (and currency) in the local economy appears to be an objective of some of the placement requirements in the case study countries. This objective is likely a response to concerns about the outflow of (mostly USD) currency in countries that have historically faced currency crises as well as a desire to ensure that premium income is invested in the local economy rather than sent abroad.

Reinsurance placements involve the transfer of premium to reinsurers in exchange for a reinsurance commission paid to the cedant as well as an obligation to pay claims in the future upon the occurrence of a covered event/loss. As a result, the net transfer of currency abroad should be equivalent only to the premium amount net of commissions and claims (i.e. the underwriting profit of the reinsurer) – not the full amount of the premium.

While international reinsurers will aim to set premiums at rates that generate an underwriting profit (and net outflow of currency), the occurrence of a large covered loss will result in underwriting losses (and a net inflow of currency) in some countries in some years. For example, the international reinsurers that provided data to the OECD on premiums and claims for 2014-2016 in the largest non-life insurance markets faced a combined loss ratio of 389% in New Zealand over the period - providing a significant inflow of foreign currency during a period of economic stress in the aftermath of the Canterbury earthquakes.

The placement requirements in India, Indonesia and the Philippines (and to be implemented in Myanmar) support the ability of domestic reinsurance companies to participate in the reinsurance placements of domestic cedants. The existence of a strong domestic reinsurance sector can have a number of benefits for the development and stability of local insurance markets:

- A domestic reinsurance sector might have a stronger commitment to ensuring that reinsurance capacity is continuously available to local cedants. A number of cedants in the case study countries suggested that international reinsurers' appetite for domestic risks may be more sensitive to large losses than that of domestic reinsurers – citing experience in the aftermath of a series of natural catastrophe events in 2010-11 (Canterbury earthquakes, Great East Japan Earthquake and catastrophic floods in Thailand) when there was a perceived reduction in international reinsurer appetite (or material increase in pricing). International reinsurers and brokers indicated that they did not specifically reduce their capacity as a result of these events although it is possible that terms were tightened as a result of the lessons that emerged from that experience.[60]

- A domestic reinsurance sector, including through their relationships with international reinsurers, could develop specific knowledge and expertise that can be transferred to domestic cedants to support insurance market development. Requirements in India for foreign reinsurer branches to undertake specific functions locally and for domestic reinsurers to provide capacity building to domestic cedants, appear to be aimed at realising these potential benefits.
- By assuming and pooling risks from domestic cedants, a domestic reinsurance company could potentially approach the international reinsurance market with a more diversified portfolio of exposures and therefore achieve more competitive pricing for reinsurance coverage than cedants could achieve individually. However, this does not appear to be a primary objective of the placement requirements in India, Indonesia or the Philippines as domestic reinsurers tend to retain a significant share of the risks that they assume from domestic cedants (and are encouraged to do so, at least in the case of India).

The design of the reinsurance placement requirements in the case study countries are different and therefore have different impacts on the functioning of risk transfer markets, in terms of price-setting, placement decisions and administrative burden:

- *Pricing*: The relatively small mandatory participation offer to Nat Re in the Philippines (10%) on treaty and facultative placements results in a reduced role for Nat Re in the pricing of reinsurance coverage as foreign reinsurers (for treaty and facultative) and/or local primary insurers (facultative) often lead on reinsurance programmes (except where there is limited foreign reinsurer appetite, such as proportional treaty placements). The ability of cedants in India to seek quotes from GIC Re, foreign reinsurer branches and cross-border reinsurers simultaneously allows more diversity in terms of programme lead and price-setting (i.e. foreign reinsurer branches and cross-border reinsurers may price and lead some cedant programmes) although GIC Re's relatively dominant position in the market and its right of first refusal on all reinsurance placements results in GIC Re leadership on many programmes. By contrast, in Indonesia, domestic reinsurers tend to lead and price many of the treaty and facultative programmes placed by cedants (with foreign reinsurers often accepting lower pricing than desired in order to participate in the programme). In Myanmar, the mandatory participation offer to Myanma Insurance and the ability of insurers to seek terms and pricing from any reinsurer should allow for competition and diversity in pricing.
- *Placement decisions*: Cedants in India and Indonesia generally indicated that their placement choices would not change significantly if no requirements were in place (with some limited exceptions). Most cedants in both countries were comfortable with the stable relationships developed with – and terms and pricing offered by – domestic reinsurers. The only exceptions were for risk transfer of some specialty and/or large risks where local capacity was not usually sufficient and for some cedants with foreign ownership who might make greater use of intra-group risk transfers (for multinational clients as well as domestic retail and commercial business). Some concerns about counterparty risks were also raised with regards to Indonesian domestic reinsurers although government ownership of some of the domestic reinsurers mitigated this risk. In the Philippines, cedants expressed more significant reservations about the impact of placement requirements (despite the lower offer requirements), mostly as a result of concerns related to the ownership structure of Nat Re (which is partly owned by primary insurance companies that are competitors for some cedants). A number of cedants also raised concerns about the requirement to place facultative reinsurance with domestic companies (where possible) due to concerns about sharing business with competitors as well as the credit risk related to placements with all but the most financially-strong primary insurance companies.[61]

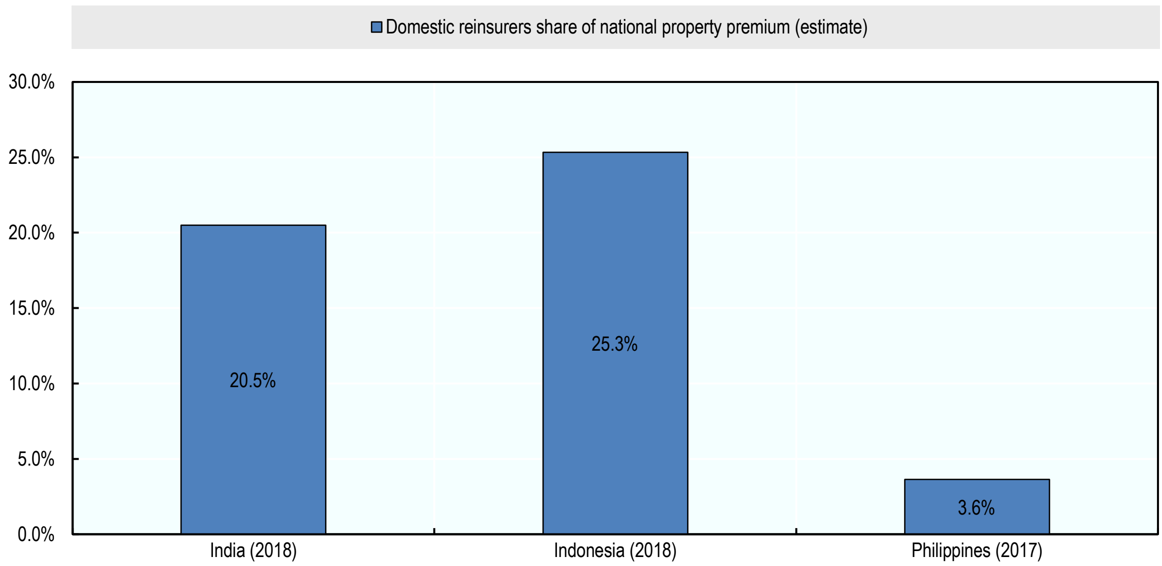
- *Administrative burden*: Cedants in all three markets expressed some concerns about the administrative burden created by the placement requirements. The placement requirements in India and the Philippines (facultative) appear to be the most administratively burdensome given the larger number of reinsurers (or primary insurers in the case of the Philippines) that need to be offered a placement and provide a formal decline (exacerbated by a processing fee in the Philippines for foreign placements). In Indonesia, three domestic reinsurers and one primary insurer must decline the placement before cedants can seek to place the risk with foreign reinsurers. The administrative burden is seen to be particularly high for placements of large and specialty risks for which the local market is unlikely to have sufficient capacity (e.g. aviation, energy, large property and infrastructure risks). The administrative burden of the approach to placement preferences to be implemented in Myanmar is likely to be low as long as the number of authorised domestic reinsurers and local branches remains low.

Placement requirements can impact the willingness of foreign reinsurers to make capacity available, with potential implications for price competition and innovation:

- Competitive reinsurance markets should lead to more price competition and ultimately benefit cedants. The design of placement requirements in India (where quotes can be sought from (almost) any reinsurer), Myanmar and the Philippines (where low mandatory offer requirements result in diversity in programme leadership) seem to allow greater price competition. However, the system of preferences in India can still result in limited participation by cross-border reinsurers even where they quote most competitively for a given placement (which may ultimately limit their willingness to make capacity available). In Indonesia, there appears to currently be less price competition among reinsurers as the domestic reinsurers that drive pricing do not appear to compete aggressively with each other on pricing or programme leadership. The recent amendments should support more price competition once implemented. While local pricing is currently (and generally) lower than international pricing in all three countries, this may not always be the case.
- International reinsurers do business on a global basis and have expertise on insurance products available in other markets. In many countries, these reinsurers will share their data, technical expertise and underwriting assistance to support local companies in introducing new products – incentivised by the benefit they will receive through providing reinsurance coverage once the products are launched. Placement requirements reduce the incentive for global reinsurers to invest in the development of new products and innovative approaches as they may lose the reinsurance business to domestic reinsurers with preferential access to placements. In Indonesia, the placement requirements allow an exception for innovative or new products with foreign reinsurer support products although the cedants consulted for this study indicated that this exception is rarely sought due to the administrative challenges in securing a decline from domestic reinsurers. In India, foreign reinsurers indicated that GIC Re is usually willing to take a reduced share of placements related to new products or innovative structures designed by a foreign reinsurer – although only for a limited time. As a result, the placement requirements may discourage the transfer of knowledge and expertise to local insurers that the reinsurance frameworks are at least partly aimed at encouraging.[62]

Placement requirements could also lead to a concentration of risk in domestic reinsurers and the domestic economy. Cedants in India, Indonesia and the Philippines make significant use of reinsurance, of which a large portion is assumed and retained by domestic reinsurers, particularly in India and Indonesia. As a result, a large share of insured property catastrophe exposure is held by some domestic reinsurers (some of whom have limited diversification outside of their home market). As noted above, the supervisors in India, Indonesia and the Philippines have the necessary supervisory authorities to oversee risk in domestic reinsurers and the domestic reinsurers do transfer risk to international markets (although the ability of the Financial Regulatory Department to oversee the activities of Myanma Insurance is more limited).

Figure 3.4. Domestic reinsurers share of national property premium



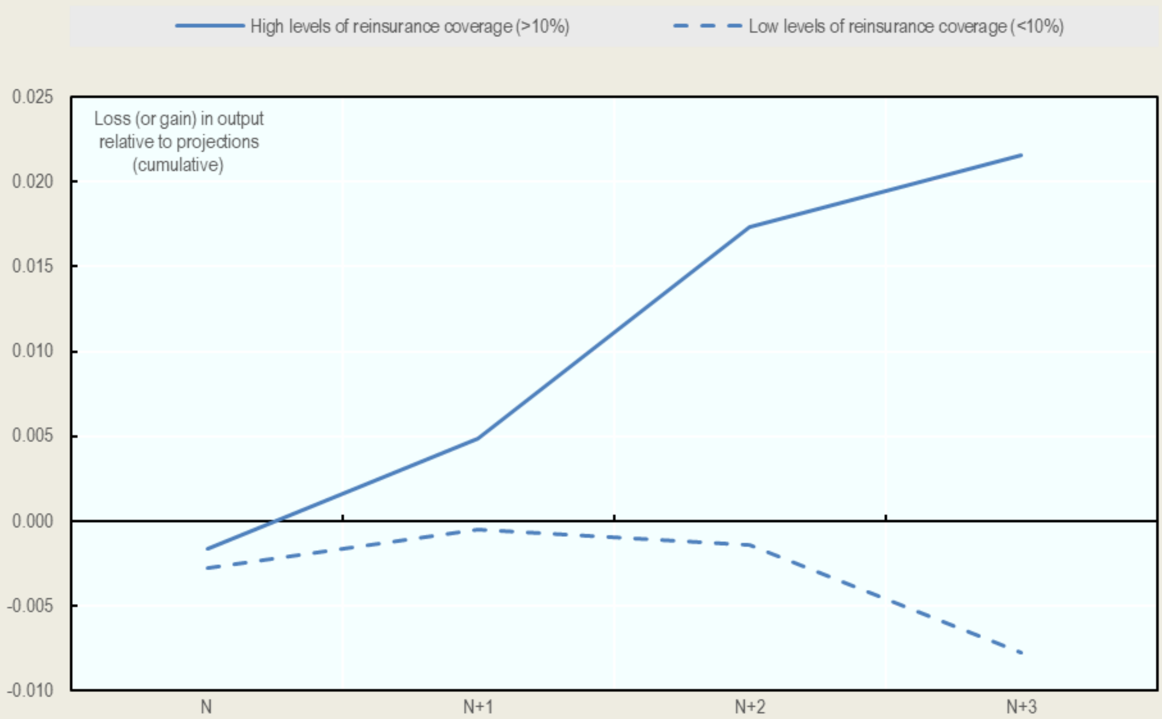
Note: Calculated based on an estimate of the retained share of property premium of domestic reinsurers as a share of all property premiums written. Does not include foreign reinsurer branches in India.
Source: (OJK, 2019[11]), (Insurance Commission (Philippines), 2018[8]), (IRDAI, 2019[10]), (Nat Re, 2018[59]), (GIC Re, 2018[62]).

The concentration of risk in domestic reinsurers also means that a significant share of the losses must be absorbed within the domestic economy. Greater reliance on international reinsurance markets would allow for the spreading of domestic risk across borders - ultimately reducing the amount of losses that would need to be absorbed domestically. In the event of a catastrophe, the affected country should benefit from an external inflow of capital to pay reinsurance claims and support recovery and reconstruction. In the case of more extreme events, where assets need to be liquidated or capital needs to be raised in order to pay claims (or as a result of claims payments), the use of international reinsurance markets should also mitigate the potential impact of these actions on domestic financial markets. These factors should all contribute to reducing the aggregate impact of catastrophe events on the domestic economy. An OECD analysis of the economic impact of past catastrophe events found that a greater reliance on international reinsurance markets reduced the level of post-event economic disruption (see Box 3.6).

Box 3.6. The benefits of risk transfer to international reinsurance markets

The OECD analysis examined the impact of reinsurance on reducing the economic disruption in the aftermath of 26 major natural catastrophes (or series of natural catastrophes) that occurred between 2010 and 2016. The report found that countries where a relatively high share (10% or more) of economic losses related to the specific event(s) were reinsured in international markets recovered more quickly after the event and had higher than projected GDP growth in the following three years – while those countries with lower levels of reinsurance coverage struggled to recover and faced a cumulative loss in output relative to pre-event projections (see Figure 3.5).

Figure 3.5. Cumulative loss (or gain) in GDP relative to pre-event projections for different levels of reinsurance coverage



Source: (OECD, 2018[42])

Ultimately, the insurance regulators and supervisors in India, Indonesia, Myanmar and the Philippines may wish to consider removing some or all of the (non-prudential) requirements imposed on reinsurance placements:

- Consideration could initially be given to removing requirements related to risks for which domestic capacity is unavailable as these requirements seem to have little impact on encouraging placement with domestic reinsurers. In addition, exceptions to placement requirements could be provided (or strengthened) for innovative products and multinational company business in order to allow the domestic market to leverage the benefits of innovation elsewhere (and to ensure the placement requirements do not pose an impediment to inward foreign investment in the economy).
- A second step (where relevant) might be to remove requirements that impede cedants' ability to seek quotes from any (authorised) reinsurer as this would allow cedants to benefit from the best

pricing and terms available in the market while not impeding the participation of domestic reinsurers in the placements. While such a step would contribute to providing greater choice for cedants, it may not be sufficient to allow full access to what might be available in the market as foreign reinsurers may be reluctant to offer capacity if preferential placement requirements remain and lead foreign reinsurers to ultimately lose business to domestic reinsurers.

Domestic reinsurers would be expected to continue to play an important role in all of these markets even if all of the placement requirements were removed as:

- cedants have developed trusted relationships with domestic reinsurers who are perceived to have superior knowledge of domestic market conditions and needs;
- domestic reinsurers often offer the most competitive pricing for reinsurance coverage;
- some cedants have had challenges in collecting claims payments from reinsurers operating without a local presence; and
- domestic reinsurers are perceived to be a more stable source of reinsurance capacity than international reinsurers due to concerns that the appetite of international reinsurers for domestic risk may be impacted by events elsewhere in the region.

The domestic reinsurers in India, Indonesia and the Philippines indicated that they are prepared for the possibility that placement requirements could be removed and expect to be in a position to compete more effectively with international reinsurers within the next two or three years as they continue to develop technical expertise and risk advisory capacity and accumulate the necessary capital to assume more business.

Ultimately, greater access to international reinsurance markets may be necessary to provide domestic cedants in India, Indonesia, Myanmar and the Philippines with the reinsurance capacity that they need to properly manage their growing exposure to catastrophe risks. Continued economic development, a changing climate – and increased insurance penetration – will lead to a greater potential for insured losses in years to come and an increased need for additional (reinsurance or insurance) capital to back those exposures.

Box 3.7. Summary of recommendations

Primary insurance for natural catastrophes

Quantifying catastrophe exposure:

- Myanmar: support the collection of data on past insured catastrophe losses and the development of catastrophe models
- India, Indonesia, Philippines: encourage (or continue to encourage) greater use by insurance companies of catastrophe models (from a diversity of providers) for managing exposure

Addressing underestimation of risk:

- All: encourage (or mandate) insurance companies to offer catastrophe peril coverage to policyholders on an opt-out basis, supported by specific information on risk exposure
- All: consider requirements for lenders to take into account catastrophe exposure when establishing insurance requirements for borrowers

Supporting adequate pricing and insurance affordability:

- All: domestic reinsurers should be encouraged to ensure adequate pricing by primary insurers for the risks that they reinsure.
- All: examine the non-premium drivers of insurance pricing, including commissions and taxes and measures that could reduce the cost of insurance, including through the use of emerging technology and innovation.
- Indonesia, Myanmar, Philippines: support a transition to premium pricing reflective of risk at the level of individual properties by building internal capacity for the review of pricing strategies and allowing insurers to demonstrate adequate underwriting expertise.

Access to reinsurance - oversight of cedant risk transfer:

Ensuring sound reinsurance (and retrocession) programmes

- India: submitted reinsurance programmes should take into account reinsurers' claims payment record, provide information necessary for IRDAI oversight of concentration risk and should be expanded to include submission of similar information by reinsurers on retrocession programmes.
- Indonesia: a set of principles for cedants' reinsurance programmes should be established to guide the development of reinsurance programmes and the claims payment record of reinsurers should be included as a specific criteria.
- Myanmar: consider gathering information on reinstatements and ensure that similar oversight requirements are applied to domestic reinsurers' retrocession programmes.
- Philippines: a single set of guidance on the submission of reinsurance programmes by cedants applicable to all treaty and facultative arrangements should be established and should include a set of principles to guide the development of reinsurance programmes. Criteria linking retention levels to financial capacity and integrating the claims payment record of reinsurers should also be established.
- All: cedants should be required to assess the potential implications of their reinsurance arrangements on liquidity management and to demonstrate their capacity to manage this risk.
- All: reinsurance arrangements should become a critical component of stress testing of primary insurers.

Ensuring sound management of retentions:

- Indonesia: minimum retention requirements appear to be generally higher than required to ensure sound underwriting while an exemption to minimum retention requirements could be considered for policies aimed at multinational corporations.
- India: a reduction in minimum retention requirement for foreign reinsurer branches could be considered in the future as the business model of branches usually involves more significant risk transfer to group parent companies.
- All: a principles-based approach should be considered as a replacement to quantitative limits on retention.

Ensuring appropriate capital treatment of risk transfer:

- Indonesia: the credit risk charge applied to domestic reinsurers provides too generous an upward adjustment to account for sovereign credit rating ceilings.
- India, Myanmar: the development of risk-based capital standards should allow for credit risk charges that take into account the financial capacity of a cedant's reinsurers.
- All: other approaches to reducing counterparty risk in reinsurance programmes should be considered, including provisions related to dispute settlement and insolvency.

Providing recognition to alternative risk transfer arrangements:

- All: a framework for recognising alternative risk transfer as authorised/effective reinsurance arrangements should be established, taking into account the different credit (market) and execution risks that may arise in the use of these instruments.

Access to reinsurance - oversight of reinsurance placements:

Authorising reinsurer access to the market:

- India, Philippines: financial capacity requirements for the establishment of branches in India (net-owned fund) and that trigger paid-up capital requirements for cross-border reinsurers in the Philippines (credit rating threshold) are high relative to requirements in other markets and should be reduced in order to expand the pool of foreign reinsurers able to establish branches or assume risks on a cross-border basis.
- India: to support India's attractiveness as a global reinsurance hub, consideration should be given to ensuring that tax rates applied to foreign reinsurance branches are competitive relative to those imposed on reinsurers operating from other jurisdictions.
- All: supervisors should increase their reliance on supervision undertaken by home supervisors. The innovative information exchange provisions and cedant protections included in the US-EU and US-UK covered agreements could be a model for future revisions to the framework for authorising reinsurers.

Reducing reinsurance placement requirements:

- All: reinsurance placement requirements should be removed (over time), beginning with requirements on risks for which domestic capacity is unavailable and for innovative products developed with foreign reinsurers and multinational company business, followed by impediments to seeking quotes from any authorised reinsurer. Ultimately, greater access to international reinsurance markets will provide domestic cedants with the reinsurance capacity that they need to properly manage their growing exposure to catastrophe risks.

Annex A. Policy framework for accessing international property catastrophe reinsurance markets

Preconditions for leveraging the capacity of reinsurance markets

There are some basic preconditions to the emergence of a reinsurance market. Reinsurers will normally be more reluctant to assume risks when they are unable to quantify the exposure that they are taking on. Demand for reinsurance by cedants will normally be lower if the level of primary insurance premium written is low.

Quantification of catastrophe exposure

The ability to assess and quantify the level of catastrophe exposure, with some level of confidence, is a prerequisite for a functioning insurance and reinsurance market (and a critical element of disaster risk management more generally).

Data on hazards that could potentially impact a given area (including frequency of return and intensity of impact at specific locations) as well as assets that could potentially be affected and the structural vulnerability of those assets are critical for pricing insurance and reinsurance coverage and the allocation of capital by insurance and reinsurance companies to manage their exposure.

This information may be available in hazard[63] or risk maps[64] or catastrophe models[65] developed by government agencies or commercial providers ((re)insurance intermediaries, (re)insurance companies or commercial catastrophe modelling companies).

Data on damages and losses incurred due to past catastrophe events provide an important source of information for testing and calibrating hazard and risk maps and catastrophe models and could provide a basis for underwriting insurance and reinsurance coverage where maps and models are not available.

Higher quality assessments of risk will reduce the uncertainty of underwriting and capital allocation decisions by insurance and reinsurance companies and should support the availability and affordability of insurance and reinsurance coverage (although, if the level of risk was previously underestimated, an improved understanding of risk could lead to a reduction in the availability and affordability of insurance).

Higher levels of insurance coverage will normally increase demand (and create markets) for commercial maps and models and provide incentives for improving the quality of risk assessments.

Primary insurance coverage for catastrophe risks

The level of interest that reinsurance companies will have in entering a given market and offering property catastrophe coverage (as well as the level of demand for reinsurance coverage) will depend on the amount of primary insurance coverage written for catastrophe perils (as well as the potential for future growth).

The share of residential properties that are insured may be low in countries with lower levels of insurance market development although the presence of large multinational corporations may lead to high levels of coverage for commercial property.

The availability and cost of insurance coverage for catastrophe perils (along with other factors such as the level of risk awareness) will have an impact on the amount of primary insurance coverage written for catastrophe perils. The availability of hazard and risk maps and catastrophe models to support insurance underwriting, pricing and capital allocation will have an impact on the availability and cost of primary insurance coverage. The availability of affordable reinsurance could also have an impact on the availability and cost of primary insurance coverage.

The form of catastrophe risk insurance coverage and level of compulsion will normally have an impact on the insurance penetration rate. Where coverage for catastrophe risk is mandatory (or must be offered) or automatically included with coverage for other perils (such as fire), penetration rates and premiums written for catastrophe coverage are generally (but not always) higher.

The structure of the primary insurance market will have an impact on the demand (and need) for reinsurance coverage. In general, if the main providers of primary insurance coverage for catastrophe perils account for a large share of the market (or are part of large international insurance companies), the demand for reinsurance may be lower as large companies may be better able to diversify their risk exposure without accessing reinsurance coverage (although large insurers will also accumulate catastrophe risk for which reinsurance protection may be necessary).

The demand for reinsurance coverage will likely be higher where there is significant exposure to catastrophe risk and the potential level of insured losses is high relative to the amount of primary premiums collected.

Principles for the establishment of a regulatory and supervisory framework for reinsurance

The transfer of risk from the cedant to the reinsurer can lead to risks to the cedant's ability to meet its obligations to its policyholders. The main types of risks that could materialise as a result of risk transfer to reinsurance markets include:

- **Counterparty (credit) risk:** From the perspective of cedants, reinsurance coverage backing primary insurer policy liabilities provides a substitute to holding reserves and capital to cover those obligations. However, unlike reserves and capital, reinsurance is based on the promise of the reinsurer to pay claims in the future (relative to capital and reserves that are already in the possession of the cedant). As a result, the transfer of risk to reinsurance markets generally involves a degree of counterparty risk, i.e. the risk that the reinsurer will not be able to meet its future obligations to the cedant. In the case of alternative reinsurance coverage, funds are raised and placed in a special purpose entity for the full limit extended (net of premiums). These funds are invested, which potentially leads to a risk that the collateral could be insufficient to payout the full limit at the time the coverage is triggered (e.g. if there is a significant market disruption that leads to a reduction in the value of the invested funds (market risk) - although investments are usually limited to low risk assets).
- **Execution risk:**[66] The potential for reinsurance coverage to not respond as expected by the cedant creates execution risk. For example, there will likely be some differences between the terms and conditions of coverage provided by the reinsurer and the terms and conditions of coverage in the underlying policy which could potentially lead to a lower level of indemnification of cedant claims.[67] In the case of alternative reinsurance coverage that is designed to trigger based on a non-indemnity

trigger (e.g. parametric, modelled loss or industry loss), execution risk could materialise as a result of a mismatch between the payout and cedant's actual losses (i.e. basis risk).

- **Liquidity risk:** Cedants may be faced with liquidity risks in cases where there is a significant delay between payouts on reinsurance coverage and the cedant's payments to policyholders (which could be exacerbated if there are disagreements about the terms and conditions of the reinsurance arrangements).

Regulators and supervisors should address these risks in two ways: (i) by establishing a framework for the regulation and supervision of reinsurance companies; and (ii) by establishing a framework for the regulation and supervision of cedant’s risk transfer to reinsurance markets.

Consistent with the IAIS Insurance Core Principle 13 (IAIS, 2019[71]), when developing frameworks for the regulation and supervision of reinsurance companies and cedant’s risk transfer to reinsurance markets (as well as for the restrocessionaires and retrocedants risk transfer to retrocession markets), regulators and supervisors should take into account the benefits of reinsurance in terms of geographical diversification of exposure, both for individual cedants and for insurance market (and economy) more generally - and the concentration risks that could materialise as a result of placing impediments on risk transfer to international reinsurance markets (see Box A A.1.).

Box A A.1. ICP 13 guidance on geographical diversification

The introductory guidance for the ICP 13 states that:

- "Geographical diversification of risk, which typically involves risk transfer across jurisdictional borders, is a key element of ceding insurer’s and reinsurer´s capital and risk management;"
- "By ceding insurance risk across borders, ceding insurers in the jurisdiction, and the jurisdiction as a whole, can benefit from a reduced concentration of insurance risk exposures at the ceding insurer and jurisdiction level respectively. This may also contribute to the financial stability of the jurisdiction;" and
- Referring to constraints to cross-border risk transfer: "the supervisor should be aware of and take into account the potential impacts of such limitations on individual ceding insurers and reinsurers as well as on the soundness and efficiency of the insurance market."

Source: (IAIS, 2019[71])

ICP 13 also encourages supervisors, when overseeing the cross-border reinsurance arrangements of cedants, to take into account the supervision performed in the jurisdiction of the reinsurer. ICP 3 on *Information Sharing and Confidentiality Requirements* provides guidance on how supervisors can exchange information with other jurisdictions and specifically encourages supervisors to respond promptly to information requests from other jurisdictions. The IAIS Multilateral Memorandum of Understanding (MMoU) has been established to provide a framework for cooperation and information exchange between supervisors (including an assessment process to ensure appropriate safeguards are in place for the handling of confidential supervisory information). By adhering to the MMoU, signatories indicate their intention to cooperate in terms of exchanging information with other supervisors (IAIS, n.d.[92]).

Regulatory and supervisory framework for reinsurance companies

Reinsurance (retrocession) companies should be regulated and supervised with the aim of ensuring that they are able to meet their obligations to their policyholders (cedants/retrocedants). Similar to primary insurers, reinsurers/retrocessionaires face a number of risks to their ability to meet obligations to their policyholders (cedants/retrocedants) including underwriting risk, asset risk and operational risk.

Traditional reinsurance companies are regulated from a prudential perspective in jurisdictions where they have a legal presence and are normally required to comply with regulatory standards aimed at ensuring financial soundness such as licensing, financial reporting requirements and minimum capital requirements. As reinsurance involves a transaction between a cedant and a reinsurer (or retrocessionnaire) (i.e. between professional counterparties), reinsurance (and retrocession) arrangements are not normally subject to consumer protection requirements such as policy form or rate regulation (where such forms of regulation are in place) (IAIS, 2019[71]).

A licensed (re)insurer is involved in most alternative reinsurance transactions and subject to (sometimes differing) prudential (insurance) regulation/supervision while the instruments used to fund or provide the coverage may be subject to securities or derivatives-related regulatory requirements, depending on the type of instrument (see Box A A.2).

Box A A.2. Regulatory requirements applied to alternative reinsurance coverage

Most alternative reinsurance coverage (with the exception of Industry Loss Warranties (ILWs)) is provided by a special-purpose entity (in some jurisdictions, the entity may be a licensed (re)insurance company). The special-purpose entity issues securities (equity, such as preferred shares or debt, such as catastrophe bonds) to capital markets investors to fully fund the reinsurance liabilities that it assumes.

Some jurisdictions have established a special licensing regime for (re)insurers solely involved in providing alternative reinsurance coverage. In Bermuda, for example, (re)insurers that: (i) carry on insurance business in the area of insurance-linked securitisations; (ii) have been established to enter into a single transaction or a single set of transactions; (iii) fully collateralise their obligations; and (iv) carryout transactions only with a limited number of sophisticated participants can be licensed as Special Purpose Insurers (BMA, 2019[93])

The securities issued by the special-purpose entity must comply with relevant securities regulatory requirements. Catastrophe bonds are regulated as securities and are normally issued pursuant to the US Securities Act Rule 144A (i.e. can be bought and traded only by qualified institutional buyers). There is also a market for private placement catastrophe bonds (offered under Section 4(a)(2) of the US Securities Act) which face more limited disclosure requirements.

ILWs offered as derivatives could be subjected to regulation. In the United States, ILWs that meet certain criteria (related to their use as insurance) are not considered to be swaps or security-based swaps for the purposes of regulatory requirements (Wilkie Farr & Gallagher, 2016[94]).

The IAIS has established specific guidance for the supervision of cedants use of alternative reinsurance arrangements in ICP 13 (IAIS, 2019[71]).

Reinsurers with a domestic legal (capitalised) presence should be regulated and supervised in an equivalent way, whether owned by domestic or foreign shareholders, private or state-owned. The focus of regulators and supervisors should be on ensuring that reinsurance companies with a domestic legal presence have sufficient capital and provisions to meet their obligations to domestic cedants.

Foreign reinsurers that are financially sound and meet the solvency requirements of their home jurisdiction should be authorised to establish domestic branches with the ability to assume risk from domestic cedants. The authorisation of branches could be contingent on: (i) the submission of sufficient financial information by the reinsurer to allow for an assessment of the financial strength of the reinsurer on an ongoing basis (and, where feasible, supported by the implementation of information sharing arrangements with the home supervisor[68]); and/or (ii) a commitment by the assuming reinsurer to recognise the jurisdiction of domestic courts and to pay all final judgements obtained by the cedant. Any requirement for local capital or collateral should take into account the importance of capital mobility for the functioning of international reinsurance markets and should not exceed the amount of the assuming reinsurer's obligations to domestic cedants.

Foreign reinsurers that are financially sound and meet the solvency requirements of their home jurisdiction should also be authorised to assume risk from domestic cedants without an established local presence (subsidiary or branch). The authorisation to assume risk from domestic cedants without a local presence could be contingent on: (i) a registration requirement; (ii) the submission of sufficient financial information by the reinsurer to allow for an assessment of the financial strength of the reinsurer (and, where feasible, supported by the implementation of information sharing arrangements with the home supervisor); and/or (iii) a commitment by the assuming reinsurer to recognise the jurisdiction of domestic courts and to pay all final judgements obtained by the cedant. Foreign reinsurers without a local presence that meet the conditions above should not be impeded from promoting their services to local cedants.

Reinsurers authorised to operate in the domestic market, no matter their form (state-owned, domestically-owned, foreign subsidiary, branch, foreign reinsurer without local presence (and authorised where authorisation is required)), should be provided with equal opportunity to assume risk from domestic cedants. If there are remaining concerns about the financial capacity of specific reinsurers to meet their obligations to domestic cedants (including the ability to meet the local capital requirements or to collect amounts owed in the event of insolvency), these concerns should be reflected mainly in the level of capital credit provided to – or the counterparty risk charge imposed on – cedants to reinsurers with questionable financial capacity (rather than restrictions on the choice of reinsurance provider).

Regulatory and supervisory framework for risk transfer to reinsurance markets

As the transfer of risk from the cedant to the reinsurer can lead to risks to the cedant's ability to meet its obligations to its policyholders, regulators and supervisors have a role in ensuring that this risk is properly mitigated.

Cedants can mitigate risks related to reinsurance and other forms of risk transfer in how they arrange their reinsurance programmes:

- Counterparty risk can be mitigated by: (i) securing reinsurance coverage from multiple reinsurance companies or by accessing multiple forms of reinsurance coverage (traditional and alternative reinsurance) in order to reduce the level of exposure to a single reinsurance provider (i.e. concentration risk); (ii) choosing to place reinsurance only (or mostly) with reinsurance companies that have a minimum level of financial strength; or (iii) requiring that some form of security be placed by the reinsurer to back the obligations assumed.[69]
- Execution risk can be mitigated by ensuring close alignment between the coverage provided to policyholders and the coverage secured through reinsurance arrangements. Some execution (basis) risk should be expected in the case of reinsurance arrangements providing non-indemnity coverage (e.g. coverage with a parametric or model-based trigger) although the relative simplicity of payout triggers should facilitate quicker payouts, reducing the potential for liquidity risk.
- Liquidity risk can be reduced by including allowances for advance payment or through collateralisation or deposit arrangements.

Consistent with Insurance Core Principle 13 (ICP 13 "Reinsurance and Other Forms of Risk Transfer"), the role of regulators and supervisors is to oversee "reinsurance risk" by requiring cedants to effectively manage their use of reinsurance and other forms of risk transfer and by integrating the reinsurance programme into the cedant's risk and capital management strategies (IAIS, 2019[71]). Insurance regulators and supervisors should ensure that cedants are properly managing the counterparty, execution and liquidity risks that could materialise through their reinsurance arrangements and holding sufficient capital and provisions to respond should these risks materialise.

Regulators and supervisors may also be concerned by the potential for risk transfer to reinsurance markets to be used as a form of regulatory arbitrage. For example, a foreign reinsurance company could potentially enter a market by making an arrangement with a licensed cedant to assume all (or virtually all) of the risks written by the cedant. While, as a writer of primary insurance, the cedant would still be responsible for all obligations entered into with the policyholders and subject to applicable business and market conduct requirements, there would be differences in terms of the level of access that the supervisor would have to the foreign reinsurance company ultimately holding the risk (relative to if the risk had been retained by the cedant).

Regulators and supervisors should normally have a number of tools to oversee the management of reinsurance risk by cedants, including:

- The authority to assess cedants' reinsurance programmes on an ongoing basis, including the consistency of a programme with the cedant's risk appetite, and make recommendations to improve the cedant's management of reinsurance risk; and
- The authority to establish requirements for the application of capital credits/counterparty risk charges for risk transfer to reinsurance markets.

In making recommendations on managing reinsurance risk and applying capital credits/counterparty risk charges, the regulator/supervisor should take into account a number of factors[70], including:

- Factors related to the level of risk concentration in the cedant's reinsurance programme (i.e. concentration of reinsurance risk with a single[71] or small number of reinsurers);
- Factors related to the financial strength and claims payment record of the individual reinsurers to whom the cedant has transferred risk as well as the supervisory regime that is applied to those reinsurers by the home supervisor and the level of cooperation and information exchange with the home supervisor; and
- Factors related to the structure of individual reinsurance transactions, including the level of credit risk mitigation in place (including the commitment of the reinsurer to pay final judgements obtained by the cedant), consistency of the reinsurance coverage with the terms and conditions of the underlying policy (or policies) and the potential for basis risk.

After taking into account these factors (and the other relevant factors identified in ICP 13), regulators and supervisors should strive to achieve equivalent treatment of risk transfer to traditional and alternative reinsurance markets and risk transfer to foreign and local reinsurers.

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Notes

[1] This excludes standalone health insurers and specialised (agriculture and export credit) insurers that are not authorised to offer coverage for property risks.

[2] The Government is reportedly considering an amalgamation of some or all of the public insurance companies and an eventual privatisation (The Economic Times, 2019[95]). One public insurance company (New India) has listed 15% of its shares.

[3] In 2020, in Government Regulation 3/2020, the Government of Indonesia approved amendments to Government Regulation 14/2018 to allow insurance companies that were more than 80% foreign-owned at the time of the initial regulation to continue at the existing foreign-ownership level although with the stipulation that the foreign share of ownership cannot be increased (Republic of Indonesia, 2020[96]).

[4] Based on data provided by the Financial Regulatory Department on property insurance premiums written in 2017.

[5] In Myanmar, the Ministry of Planning and Finance (MOPF) is responsible for the oversight of the insurance sector. Decisions on insurance regulation and supervision are made by the Insurance Business Regulatory Board (IBRB). The Financial Regulatory Department (FRD) within MOPF acts as a secretariat for the IBRB and undertakes day-to-day supervision of licensed insurance companies. IBRB's oversight responsibilities include oversight of state-owned Myanma Insurance (which is also subject to relevant insurance legislation) although FRD is only responsible for the supervision of the private insurance companies that have been established since 2013.

[6] Estimate provided by the Insurance Commission.

[7] Among OECD countries, the largest five non-life (or composite) insurance companies accounted for more than 45% of non-life premiums in 2017 in all countries except Germany (23.7%), Greece (42.7%) and Spain (39.2%). On average, the top five non-life or composite companies had a market share of 67.8% in 2017 (among the 26 OECD countries for which this data is available).

[8] For all three countries, this estimate excludes health, personal accident and life insurance related coverage provided by non-life insurance companies. No data was available for Myanmar.

[9] Some insurance companies suggested that the prescribed rates for motor vehicle coverage, on the other hand, were too low.

[10] The OECD does not collect statistics on claims incurred by class of business so it is not possible to calculate disaggregated loss ratios for the property line of business. However, many OECD countries publish this data directly. For example, in the United States, losses incurred as a share of net earned premium for the commercial multiple peril line of business was 58.0% in 2017 (NAIC, 2018[97]). In Australia, the net loss ratio for the Fire and Industrial Special Risks line of business was 63% for the year ending September 2018 (APRA, 2019[98]). In Japan, net claims as a share of net premiums for the fire insurance line was 60.2% for the fiscal year ending March 2018 (GIAJ, 2018[99]).

[11] Large insured sums are systematically ceded to international reinsurers – for insured sums below USD 8 million (approximately 12.1 billion kyats), Myanma Insurance retains 30% and cedes the rest to international reinsurers; for insured sums above USD 8 million, Myanma Insurance retains USD 2.5 million and cedes the rest.

[12] Myanma Insurance has an excess-of-loss property reinsurance treaty covering fire losses (although not catastrophe perils). The reinsurance is acquired on annual basis through a tender issued to reinsurance brokers.

[13] The Insurance Commission provided data on the cession ratios of the 10 largest underwriters of earthquake, typhoon and flood coverage in 2017. Overall, these insurance companies retained 43% of earthquake premium, 39% of flood premium and 37% of typhoon premium although with significant variation across the largest insurers.

[14] Data on gross and net written premium for direct property business was available for 25 of 36 OECD member countries.

[15] There is relatively limited international experience with the failure of reinsurance companies (OECD, 2018[42]). One study of non-life insurer impairments in the United States between 1969 and 2014, for example, found that a reinsurance failure was the primary driver for only 3% of all non-life insurance company impairments and for only one impairment since 2000 (AM Best, 2015[100]).

[16] A full alignment of terms and conditions between cedant and reinsurer coverage would normally increase the cost of reinsurance.

[17] As private insurers in Myanmar are not currently permitted to cede risk to reinsurers, this type of requirement is not applicable.

[18] Fronting refers to a business practice where a policy is distributed by a primary insurers although all (or almost all) of the risk is assumed by a reinsurer. Under such arrangements, the primary insurer may have limited incentives to ensure sound underwriting as the primary insurer will bear none (or very little) of the risk. While there are a number of legitimate uses for fronting arrangements (e.g. multinational

programmes), this approach might also act as a means for a (reinsurance) company to underwrite a significant amount of business without a local primary insurance license.

[19] Life insurers must retain 25% of the sum at risk across their pure protection life insurance business portfolio and 50% of the sum at risk for the other components of their life insurance business portfolio.

[20] The Reinsurance Directive establishes a minimum retention requirement for life insurers of 20% and requires non-life insurers to maximise retention commensurate with the insurer's financial strength. The new directive also prohibits fronting to cross-border reinsurers (Insurance Business Regulatory Board, 2020[46]).

[21] Reinsurance recoverables refer to the amount of funds that are owed by the reinsurer to the cedant (but not paid), including incurred claims not paid, estimated losses on claims that have been incurred but not reported and related loss adjustment/claims management expenses.

[22] In Indonesia, insurance and reinsurance companies are only allowed to hold a single operating license which would not allow for the establishment of a separate legal entity to transfer risk to capital markets.

[23] The state-owned reinsurers in India and the Philippines have a mixed ownership structure. GIC Re (India) was partially privatised in 2017 through an initial public offering (although the government continues to own approximately 85% of the company). Nat Re (Philippines) is partially owned by a government insurer (Government Service Insurance System – 25.7%). The remaining shareholders in Nat Re include banks, insurance companies and individuals (Nat Re, 2019[101]).

[24] A private, domestically-owned reinsurer (ITI Re) was licensed to commence business by December 2016 although its license was revoked in 2019 as the company had not begun assuming any reinsurance business (Sheehan, 2019[102]).

[25] Nasional Re is a subsidiary of state-owned insurer (Askrindo). Article 1 of the Indonesia Ministry of State-Owned Enterprises Regulation No. 3 Year 2012 defines a state-owned enterprise as an enterprise that is fully or partially owned by the government through a *direct* investment (Pemerintah Pusat, 2012[104]). As a result, Nasional Re is not considered to be a state-owned reinsurer in Indonesia although it would be considered as such under the OECD definition of a State-Owned Enterprise (OECD, 2015[103]).

[26] In some countries, branches of insurance or reinsurance companies can operate without placing capital or assets locally.

[27] In the Philippines, branches of foreign insurers are required to have paid-up capital of at least PHP 1 billion (approximately USD 19.6 million) which is the same amount of paid-up capital required for a domestic insurance company and less than the required level of paid-up capital for a domestic reinsurance company (which PHP 3 billion) (Insurance Commission, 2015[105]). Twenty-five percent of the paid-up capital must be invested in public sector bonds or securities (including state-owned companies) while the remaining 75% can be invested in other securities as permitted by the Insurance Commission. In Myanmar, at the time of writing, requirements for foreign reinsurer branches had not been outlined by the Insurance Business Regulatory Board.

[28] Foreign Reinsurer Branches must comply with IRDAI Investment Regulations and minimum retention requirements applicable to Indian reinsurers and can only repatriate any surplus funds (above required solvency margins) with permission from IRDAI. They must also ensure that underwriting of Indian business (as well as claims settlement and regulatory compliance functions) takes place at the branch office and that training is provided to Indian underwriters for various classes of business (IRDAI, 2015[52]).

[29] Net-owned funds refer to the reinsurance company's paid-up equity capital and free reserves (IRDAI, 2015[52]).

[30] In Myanmar, cross-border reinsurers can also assume risk from companies operating in the Thilawa Special Economic Zone although this special authorisation arrangement will become unnecessary when the new Reinsurance Directive is implemented.

[31] Among the largest international reinsurers, only four have a credit rating of AA or higher.

[32] The mandatory placement and mandatory offer requirements do not apply to life insurance (or life insurers) although life insurers are encouraged to utilise domestic capacity before accessing reinsurance coverage from cross-border reinsurers.

[33] An Indian reinsurer is a domestically-incorporated reinsurer with a minimum of three years of credit ratings. Given the restriction on foreign ownership of a domestically-incorporated reinsurer, only GIC Re and any future reinsurance company (or companies) owned by Indian investors are eligible to be Indian reinsurers.

[34] Most international reinsurers have credit ratings above A-.

[35] An Indian reinsurer that does not meet the requirement for three years of credit ratings can participate under similar conditions as foreign reinsurer branches (i.e. second priority) – although currently, there is no Indian reinsurer other than GIC Re.

[36] For simple risks (risks for which sufficient data on loss experience is available, including motor vehicle insurance, health insurance, accident insurance, credit insurance, death insurance, and surety), 100% of reinsurance coverage must be provided by domestic reinsurance companies, except in the following cases: (i) insurance products that provide global coverage (e.g. travel, health) or that are specifically designed for multinational companies; (ii) for life insurance, new insurance products whose development is supported by foreign reinsurers in which case cedants can seek reinsurance coverage from foreign reinsurers for four years from the time the insurance product is reported to OJK (OJK, 2015[45]). In June 2020, amendments to these requirements were made to lower the amount of reinsurance coverage that must be provided by domestic reinsurers to 50% for "modest" risks (OJK, 2020[56]).

[37] For property treaty placements, the minimum amount that must be placed with domestic reinsurers is IDR 210 billion for proportional placements and IDR 185 billion for non-proportional placements (approximately USD 15.1 million and USD 13.3 million, respectively). For property facultative placements, the minimum amount that must be placed with domestic reinsurers is IDR 620 billion (approximately USD 44.5 million) (OJK, 2015[55]).

[38] Most international reinsurers have credit ratings above BBB.

[39] For certain lines of business (marine hull, aviation and robbery insurance), the facultative placement must be offered to two domestic insurers, one foreign authorised insurer (branch) and Nat Re.

[40] For the Philippines, this estimate was calculated based on Nat Re's reported reinsurance premiums for the fire line business and an estimate of total premiums ceded (net written premium/gross written premium) (Nat Re, 2016[60]), (Nat Re, 2018[59]).

[41] According to one of the local reinsurers, local companies can absorb approximately 20% of property facultative placements for policies with insured values above USD 1 billion. The state-owned domestic

reinsurer and the reinsurer owned by a state-owned insurer in Indonesia indicated that some large specialty risks (aviation, energy/oil and gas) are mostly placed with foreign reinsurers as there was limited domestic capacity.

[42] Based on data provided to the OECD by a number of large international reinsurers for their operations in China, Japan, Korea, India and Chinese Taipei.

[43] Some of the (re)insurance companies consulted indicated that there was significant proportional reinsurance capacity available from international reinsurers (including foreign reinsurer branches) for some Indian cedants.

[44] Simple average for countries where data is available: Australia, Austria, Belgium, Chile, Denmark, Finland, Germany, Hungary, Ireland, Israel, Italy, Japan, Latvia, Lithuania, Luxembourg, Norway, Poland, Portugal, Slovenia, Spain, Sweden and Switzerland (OECD, 2019[14]).

[45] In Indonesia, foreign ownership of intermediaries is limited to 80%, as in the case of foreign ownership of insurance companies.

[46] In September 2020, the OECD and the Asian Development Bank submitted a report to APEC Finance Ministers on Leveraging technology and innovation for disaster risk management and financing thatl examines how emerging technologies and innovation can be leveraged to improve disaster risk management and financing. The report will be published in the fourth quarter of 2020.

[47] Regulatory sandboxes have been established by OJK in Indonesia (Rahayu, 2018[106]) and by IRDAI in India (Jenkins, Pathak and Misra, 2019[107]).

[48] The Insurance Commission has also been collecting information on facultative obligatory arrangements which have some similarities to treaty arrangements in terms of the automatic nature of the cession.

[49] The full set of factors recommended for supervisory review in ICP 13 are: (i) proportion of business ceded so that the net risks retained are commensurate with the ceding insurer's financial resources and risk appetite; (ii) structure of the programme, including any alternative risk transfer mechanisms; (iii) financial condition and claims payment record of the reinsurers in question (both in normal and stressed conditions); (iv) levels of exposure to a single reinsurer or different reinsurers being part of the same group; (v) extent of any credit risk mitigation in place; (vi) expected resilience of the reinsurance programme in stressed claims situations, including stress related to the occurrence of multiple and/or catastrophic events; (vii) cession limits, if any, applicable in the jurisdiction; (viii) the supervisory regime in place in the jurisdiction of the reinsurer; (ix) level of effective risk transfer; and (x) extent to which relevant functions are outsourced by the ceding insurer, including the criteria for the selection of reinsurance brokers. Some of these factors are addressed in other elements of the reinsurance regulatory framework in the case study countries.

[50] Fronting could allow a reinsurer to effectively act as a primary insurer and underwrite significant direct risk without requiring a primary insurance license. While the primary insurer fronting the reinsurer's business would remain accountable to the policyholder for the risk transferred to the reinsurer (and for ensuring that all consumer protection requirements are fulfilled), the supervisor might not have the same ability to oversee the activities of the reinsurer that is ultimately assuming the risk as they would if the risk was carried by the primary insurer.

[51] A significant share of GIC Re's assumed premium for the property line of business is for risks outside of India although a breakdown by third countries is not available.

[52] At least three Indonesian reinsurers have international ratings from Fitch although none have an international rating of AAA: Indonesia Re (BBB-), Nasional Re (BB+) and Marein Re (BB+).

[53] For example, Fitch provides a national rating to companies based in countries with lower sovereign ratings. In Indonesia, domestic reinsurers have received the following national ratings: Indonesia Re (AA), Nasional Re (AA-), Tugu Re (A+) and Marein Re (AA-), although, according to Fitch ratings, these specific ratings are not internationally comparable.

[54] Foreign reinsurance companies are usually not interested in establishing domestically-incorporated subsidiaries given their desire to manage their assets and liabilities on a global basis so this is not likely a significant practical impediment to accessing international reinsurance capacity.

[55] IRDAI is a signatory of the IAIS MMoU. FRD (Myanmar) has a number of cooperation agreement with insurance regulators in other countries, including Japan, India and Thailand, although it does not have any information sharing arrangements in place for the sharing of supervisory information. OJK has MoUs for info sharing and on-site examination with supervisors in other countries including Bank Negara Malaysia and the Financial Services Commission (Korea). The Insurance Commission (Philippines) does not have any formal supervisory cooperation arrangements in place.

[56] The minimum credit rating requirement of BBB imposed on cross-border reinsurers in India and Indonesia is relatively low and should not impede the availability of reinsurance capacity significantly. Less than 1% of the global non-life reinsurance capacity provided by the largest 50 reinsurers in 2017 was provided by reinsurers with a credit rating below A- (although entities unrated by S&P did provide a more significant share (13%) of global reinsurance capacity).

[57] It should be noted that credit ratings are not part of the formal requirements for allowing foreign reinsurers to assume risk in the host market.

[58] The Government of India and IRDAI have indicated an interest in establishing India as a global reinsurance hub. Some foreign reinsurer branches suggested that the high tax rate works against that objective by making it relatively more costly to provide reinsurance coverage to cedants in other countries through their Indian branches than through their operations in other countries with lower tax rates.

[59] OSFI also established requirements related to the treatment of insolvency of either the cedant or the reinsurer in the reinsurance contract, aimed at ensuring that reinsurance recoverables remain at the disposal of the cedant or its estate (OSFI, 2019[74]).

[60] While it is likely too early to make any definitive conclusions, there is some evidence that the volatility in reinsurance market cycles has declined in recent years, potentially as a result of the growth of the alternative reinsurance markets (see (OECD, 2018[42])).

[61] Some primary insurance companies and intermediaries indicated that there are 10-15 primary insurance companies in the Philippines that pose an acceptable level of credit risk.

[62] Knowledge transfer to local insurers by foreign reinsurer branches in India and domestic reinsurers in Indonesia is a specific regulatory requirement.

[63] Hazard maps provide information on geographical areas at risk of being affected by a given hazard, normally for a given measure of probability/return period.

[64] Risk maps provide information on the potential impact of a hazard, such as potential casualties and damages, normally for a given measure of probability/return period.

[65] Catastrophe models can provide estimates of the likely damage from a range of scenarios based on the physical parameters of the hazard event and the stock of assets that would be affected (taking into account the level of structural vulnerability of those assets).

[66] For simplicity, this framework considers contract execution risk and basis risk as forms of "execution risk" as all involve the risk that the reinsurance agreement will not perform as anticipated by the cedant. ICP 13 treats basis risks as distinct risks (not as a component of execution risk).

[67] A full alignment of terms and conditions between cedant and reinsurer coverage would normally increase the cost of reinsurance.

[68] ICP 3 on *Information Sharing and Confidentiality Requirements* provides guidance on how supervisors can exchange information with other jurisdictions and specifically encourages supervisors to respond promptly to information requests from other jurisdictions. The IAIS Multilateral Memorandum of Understanding (MMoU) has been established to provide a framework for cooperation and information exchange between supervisors (including an assessment process to ensure appropriate safeguards are in place for the handling of confidential supervisory information). By adhering to the MMoU, signatories (which include all of the major reinsurance hubs) indicate their intention to cooperate in terms of exchanging information with other supervisors (IAIS, n.d.[92]).

[69] A cedant can also mitigate some of the risks related to the insolvency of a reinsurer through the use of offset clauses in its reinsurance agreements, which allow the cedant (and the reinsurer) to net any amount due to the other against those payable before making any payment.

[70] This policy framework outlines a simplified set of issues that should be monitored by regulators and supervisors. A comprehensive set of guidance is available in the IAIS ICP 13 on reinsurance and other forms of risk transfer.

[71] The business model of a cedant that is a subsidiary or branch of a parent with international operations may involve the ceding of all unretained risk to a parent company or internal reinsurer.

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