

Chapter 3

Financing a sustainable recovery from the COVID-19 pandemic

The fiscal and monetary environment in Emerging Asia remains challenging. The current context calls for innovative financing solutions to finance the recovery post-pandemic. The chapter explores these solutions at length. First, policy makers should consider options for managing the stock of public debt, including participation in multilateral initiatives, swap arrangements, or debt buybacks. Alternative financing sources such as green, social and sustainability bonds can enable a sustainable and equitable recovery. The development of this market segment requires resolute policies, including robust regulatory frameworks, higher supply of sovereign bonds, and incentives to increase investor participation. In addition, insurance-linked securities could provide an extra layer of financial coverage against extreme events such as pandemics. There is also scope for regional co-operation in financing the recovery. For instance, sovereign catastrophe risk pools could provide a mechanism for Emerging Asian governments to enhance their financial preparedness against pandemics and other large external shocks.

Introduction

All around the world, the COVID-19 pandemic has exposed gaps in healthcare systems, disrupted businesses and public services, derailed supply chains, and shattered job markets (see Chapters 1 and 2). Although conditions have improved in many countries as vaccination rates have increased, recovering from one of the biggest global socio-economic crises in decades will involve many challenges, particularly for Emerging Asian economies.

Ensuring the availability of suitable financing in a way that does not put the stability of financial markets and fiscal policy at risk is a critical consideration as governments address the challenges of the pandemic. As it stands, Emerging Asian governments do have some room for manoeuvre, yet they are also dealing with rising levels of fiscal stress. Against this backdrop, this chapter aims to contribute to policy making by discussing financing options for the public sector in detail. In so doing, it presents options for financing policies in a more sustainable manner.

Firstly, the chapter sets out a number of ways in which governments can manage their current stock of debt. It then looks at how they can narrow financing gaps by harnessing bond markets, and at policies that can deepen the markets for government debt. More specifically, it looks at how green, social and sustainability bonds can be used to finance a sustainable and equitable recovery from the pandemic. The chapter then discusses insurance-linked securities, and the role of multilateral institutions in lowering the cost of credit. Finally, it reviews regional risk-pooling mechanisms to hedge potential losses from catastrophic events.

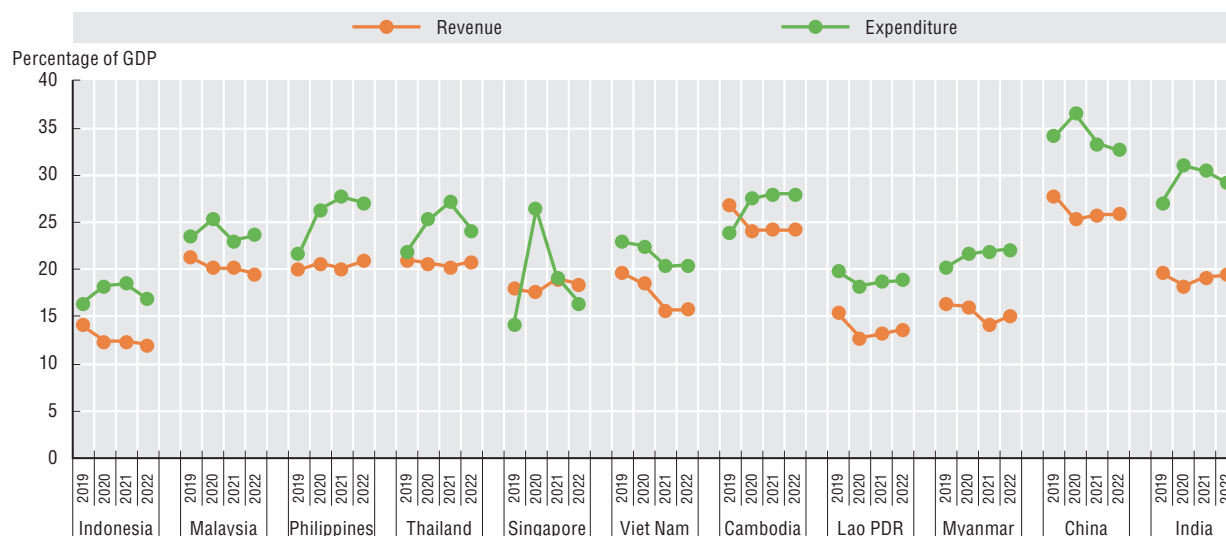
The current economic environment calls for innovative financing options

As the pandemic drags on, the economic environment remains challenging, and designing fiscal and monetary interventions is increasingly complex. Considering the tightness of their fiscal headroom, policy makers face a trade-off between maintaining policy support in the near term, and preserving financial stability in the medium term. At this juncture, there is still arguably some space for governments in the region to intervene in many Emerging Asian economies; although constraints could harden if a new wave of COVID-19 cases were to stress healthcare systems, or if monetary policies began to tighten in response to increasing inflationary pressure.

The current fiscal environment – the pandemic has already stretched public finances

The COVID-19 pandemic has significantly increased the pressure on public finances due to supportive measures such as cash-transfer packages and higher healthcare budgets. In certain cases, governments in the region have already had to reduce or suspend some expenditure items in favour of the pressing need to lessen fiscal burdens. The ratio of general government spending to gross domestic product (GDP) in the region has risen markedly, increasing to a range of 18-37% in 2020, from 14-34% in 2019 (Figure 3.1). The uptick in spending to manage the response to the pandemic coincided with a drop in revenues as economic activity fell back. Still, the spending-to-GDP ratio is expected to stabilise by the end of 2021, and decline in 2022, as governments rein in their budgets.

Figure 3.1. General government revenues and expenditures in selected Emerging Asian economies, 2019-22
(Percentage of GDP)



Source: IMF (2021a).

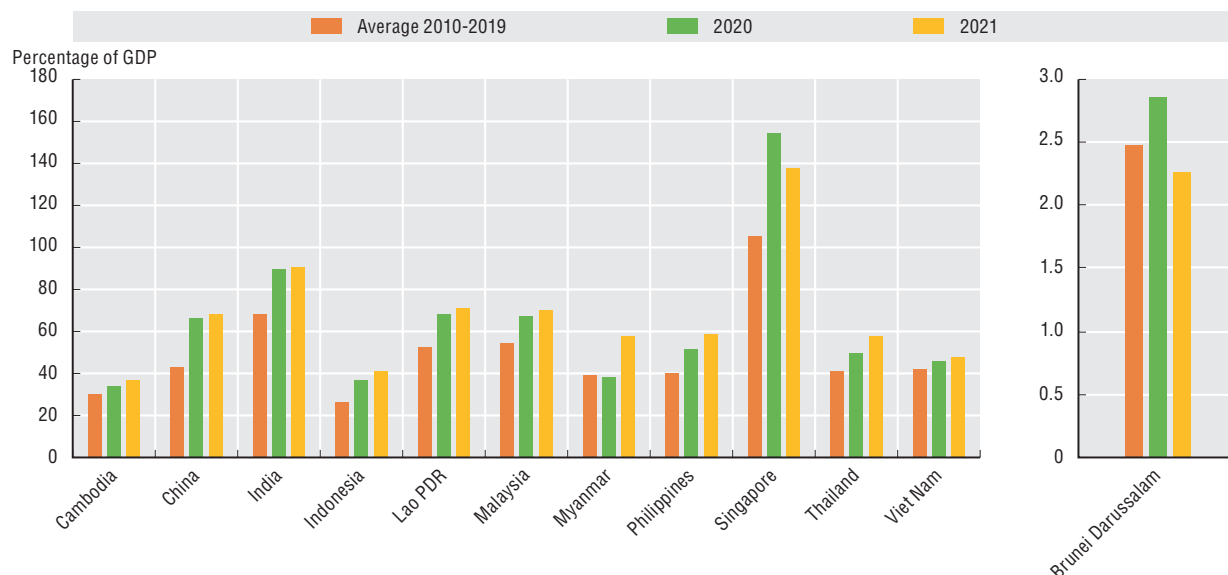
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Near-term fiscal concerns mostly revolve around the debt-service burden of an economy, and data on this seem to provide some grounds for reassurance. Still, the rather muted changes in interest payments thus far have been against a backdrop of persistently low interest rates across Emerging Asia, a trend that will be discussed in detail in the subsequent section. Meanwhile, general government borrowing as a proportion of output jumped sharply across Emerging Asian economies in 2020. Moreover, it is anticipated to continue to inch upwards in some of the countries in 2021, albeit at a slower pace. Indonesia, Malaysia, Myanmar, the Philippines, Thailand, and Viet Nam are projected to record higher net borrowing ratios by the end of 2021 compared to 2020, before these ratios begin to recede.

The levels and sustainability of public debt in Emerging Asia are cause for concern

The widening deficits expectedly led to a significant rise in governments' stock of debt (Figure 3.2, Panel A) after the outbreak of the pandemic. The public debt of Emerging Asia (excluding Brunei Darussalam) increased by an average of 15.5 percentage points from 2019 to 2020. Moreover, debt levels are forecast to have risen by the end of 2021. With GDP levels generally declining in 2020, debt-to-GDP ratios have surged by an average of about 9 percentage points since 2019 across the 12 economies of Emerging Asia. Public debt ratios at the end of 2020 ranged from roughly 2.9% in Brunei Darussalam, to 154.9% in Singapore (Figure 3.2, Panel A). Notably, the general government gross debt ratios of Singapore, the People's Republic of China (hereafter "China"), India, Cambodia and Thailand hit all-time highs in 2020. In parallel, fiscal deficits have widened sharply in 2020 in all countries in Emerging Asia and are anticipated to have deteriorated further in 2021 in Indonesia, Malaysia, Myanmar, the Philippines, Thailand and Viet Nam (Figure 3.2, Panel B). Furthermore, a comparison with the pre-pandemic period 2010-2019 shows that both debt levels and fiscal deficits have deteriorated markedly in 2020 and 2021 compared to that period.

Figure 3.2. General government gross debt in Emerging Asia



Note: The data for 2021 are estimates. Fiscal balance data are unavailable for Singapore.

Source: IMF (2021b), *World Economic Outlook Database*, <https://www.imf.org/en/Publications/WEO/weo-database/2021/October>.
StatLink  <https://doi.org/10.1787/888934304685>

As sovereign debt has increased sharply worldwide, the question of its sustainability has come to the fore. The standard framework of analysis suggests that four main factors determine debt sustainability: the initial level of debt, economic growth, the degree of fiscal balance, and the burden of debt-service (Bohn, 1998). Box 3.1 provides a brief overview of the general considerations and features of the fiscal frameworks that governments adhere to. Fiscal frameworks are indeed an important tool for supporting fiscal sustainability and increasing the predictability of public policies. Another important attribute of fiscal frameworks is that they facilitate communication with – and accountability to – the public.

Box 3.1. Fiscal frameworks: General considerations and features

Fiscal frameworks – which comprise fiscal rules, fiscal institutions and budgetary procedures – are an important tool for supporting fiscal sustainability and increasing the predictability of public policies. Most countries rely on a combination of numerical and procedural rules. The design of fiscal frameworks should achieve three main goals. The first of these is to ensure the sustainability of the public finances. The second is to support the stabilisation of the economy through counter-cyclical fiscal policy whenever this is appropriate. Finally, the third main goal is to facilitate communication with, and accountability to, the public (IMF, 2021b).

On the other hand, and as noted by Debrun and Jonung (2019), meeting these three objectives simultaneously can be challenging and can lead to the so-called policy trilemma. For instance, long-term fiscal targets that are based on numerical rules, such as the debt-to-GDP ratio, may in fact take an excessively narrow view of sustainability.

Additional features that are desirable in fiscal frameworks include resilience, ease of monitoring, operational guidance, and enforcement (IMF, 2021b). Furthermore, Ardanaz et al. (2021) argue that fiscal rules should include features to accommodate exogenous shocks.

Box 3.1. Fiscal frameworks: General considerations and features (cont.)

The literature on the impact of numerical fiscal rules has grown in recent decades. Most studies suggest that the implementation of numerical fiscal rules has been effective in achieving both fiscal sustainability and macroeconomic stability (Gomez-Gonzalez, Valencia and Sanchez, 2021; Bergman and Hutchison, 2015; Frankel, Vegh and Vuletin, 2013; Neyapti, 2013). Strong fiscal rules are likewise associated with an improvement in the current account balance (Afonso et al., 2021) as well as with an improvement in access to markets, due to lower bond spreads and higher sovereign ratings (Sawadogo, 2020). Another strand of literature explores the advantages and drawbacks associated with different types of numerical and non-numerical fiscal rules. Table 3.1 summarises some of these findings.

Table 3.1. Advantages and limitations of different types of fiscal rules

Type of fiscal rule	Advantages	Limitations
Expenditure rule	<ul style="list-style-type: none"> • Clear operational guidance in the budget-planning process. • Relatively easy to monitor and communicate. • Permits the conduct of counter-cyclical fiscal policy by constraining spending during booms. 	<ul style="list-style-type: none"> • Could lead to unintended changes in the distribution of spending if governments shift spending to categories that are not subject to the ceiling. • May leave too much scope to increase debt.
Revenue rule	<ul style="list-style-type: none"> • Can improve revenue management. • Permits the conduct of counter-cyclical fiscal policy. 	<ul style="list-style-type: none"> • No direct link to the control of public debt.
Budget balance rule	<ul style="list-style-type: none"> • Clear operational guidance in the budget-planning process. • Easy to monitor and communicate. • Close link to debt sustainability. 	<ul style="list-style-type: none"> • Budget balance can be affected by unexpected shocks, which are outside the control of the government (e.g. pandemic shock).
Structural budget balance rule	<ul style="list-style-type: none"> • Corrects for the economic cycle, and for one-off events. • May improve the overall sophistication of public debates about fiscal policy. 	<ul style="list-style-type: none"> • The estimation of the structural balance is challenging. • Difficult to communicate to the general public.
Debt rule	<ul style="list-style-type: none"> • The debt-to-GDP ratio is a simple, easy-to-monitor statistic, and has predictive power for crises. 	<ul style="list-style-type: none"> • No clear operational guidance in the short-run, as the impact of policy on the debt ratio is not immediate. • The debt ratio may not capture well the cost of debt if interest rates trend downward. • Where the debt anchor is combined with a deficit limit, the long-term stable debt ratio consistent with a given deficit limit will be higher if the long-term economic growth rate has declined. • Rule could be met via measures that are temporary in character (e.g. below-the-line transactions).
Procedural rules	<ul style="list-style-type: none"> • Provide more flexibility than numerical rules. 	<ul style="list-style-type: none"> • May be harder to communicate and monitor without numerical targets.

Note: Expenditure rules limit the amount of government spending or the rate of growth in government spending. Revenue rules place constraints on the tax-to-GDP ratio, and impose restrictions on government revenues raised in excess of projected amounts. Budget-balance rules include requirements to run a balanced position, not to exceed a defined deficit limit, or to attain a defined minimum surplus. The structural fiscal balance is the difference between government revenues and expenditures, which is then corrected for effects that could be attributed to the economic cycle and one-off events. Debt rules limit the amount of debt that governments can accumulate. Procedural rules comprise various non-numerical rules, such as fiscal institutions and budget procedures.

Source: Authors' elaboration based on IMF (2021b), Schaechter et al. (2012).

In practice, however, markets' tolerance of debt levels necessitates a case-by-case analysis. The precise thresholds are a matter of market judgement and can be dynamic or change over time.

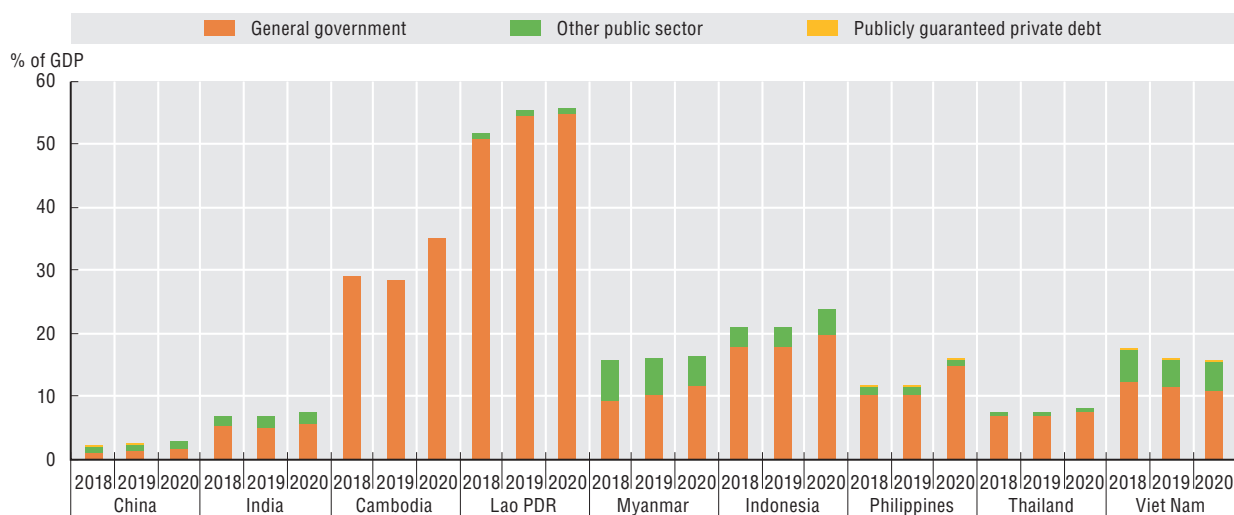
The OECD countries implemented various policies in terms of securing long-term fiscal sustainability. Medium-term expenditure frameworks, for example, are an important tool for overcoming the limitations of the annual budget cycle by adopting a medium-term perspective (i.e. at least three years from the current budget) for achieving fiscal objectives (OECD/ADB, 2019). Another tool is performance budgeting, which has been widely adopted by OECD countries

starting from the 1990s. Performance budgeting is defined by the OECD as “the systematic use of performance information to inform budget decisions, either as a direct input to budget allocation decisions or as contextual information to inform budget planning, and to instil greater transparency and accountability throughout the budget process, by providing information to legislators and the public on the purposes of spending and the results achieved” (OECD, 2019).

Spending reviews represent an additional tool for streamlining fiscal management. They entail an assessment of the implementation efficiency and effectiveness of existing government policies and have proven to be an important tool for governments to control total expenditure, to align spending allocations with government priorities and to improve the effectiveness of policies and programmes (OECD, 2021a). In addition, independent fiscal institutions (i.e. independent parliamentary budget offices and fiscal councils) have been established across OECD countries to “provide independent analysis of fiscal policy and performance, thus promoting fiscal transparency, sound fiscal policy and sustainable public finances” (OECD, 2020a). Finally, green budgeting frameworks could support the achievement of environmental and climate-related objectives by providing policy makers with a clearer understanding of the environmental and climate impact of budget choices. Green budgeting relies on four key mutually reinforcing building blocks, namely: a strong strategic framework; tools for evidence generation and policy coherence; reporting to facilitate accountability and transparency; and an enabling budgetary governance framework (OECD, 2020b).

Drawing on the lessons of the Asian financial crisis of 1997-98, and in order to mitigate risks related to exchange rates, governments in Emerging Asian economies have favoured domestic sources of credit over external ones. Since the crisis, Emerging Asian economies have been especially keen to keep their external public debt-to-GDP ratios in check. In 2020, public and publicly-guaranteed external debt did rise, however, driven by spending on support measures to ride out the pandemic (Figure 3.3).

Figure 3.3. Public and publicly-guaranteed long-term external debt of selected Emerging Asian economies, 2018-20
(Percentage of GDP)

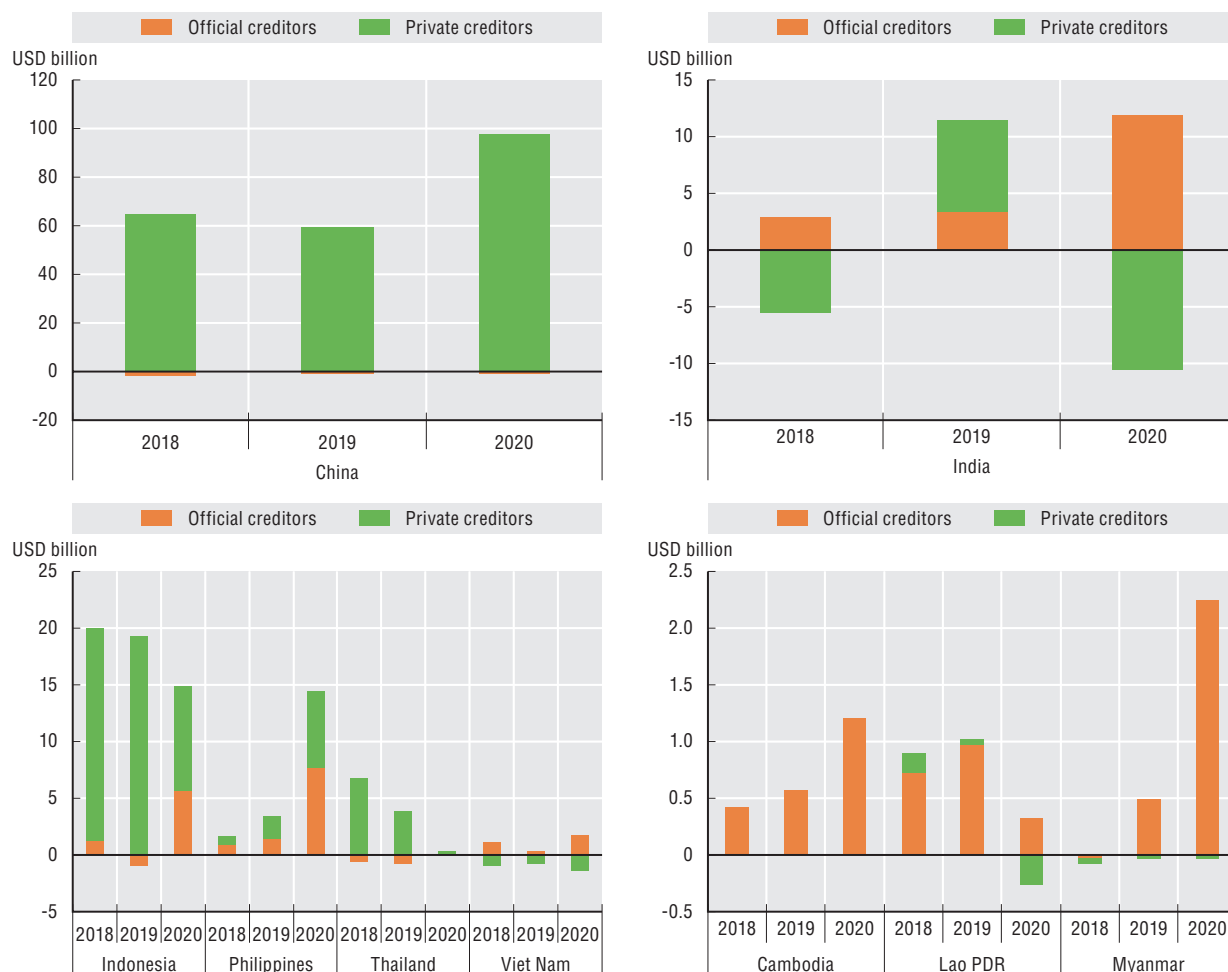


Note: A separate item of IMF credit is included in the calculation of the general governments' external debt.

Source: Authors' calculations based on data from World Bank (2021a), *International Debt Statistics 2022 Database*, <https://data.worldbank.org/products/ids> and IMF (2021b), *World Economic Outlook Database*, <https://www.imf.org/en/Publications/WEO/weo-database/2021/October>.
StatLink <https://doi.org/10.1787/888934304704>

For many countries in the region, multilateral development banks and official bilateral sources have stepped in to meet a substantial chunk of long-term foreign currency financing demands of their public sectors (Figure 3.4). The exceptions are China, which relied more on private creditors, and to some extent, Thailand.

Figure 3.4. Annual change in public and publicly-guaranteed long-term external debt of selected Emerging Asian economies, by creditor, 2018-20
(USD billion)



Note: Official creditors include multilateral institutions and bilateral partners. The separate item of IMF credit is included in the calculation.

Source: Authors' calculations, based on World Bank (2021a), *International Debt Statistics 2022 Database*, <https://data.worldbank.org/products/ids>. StatLink  <https://doi.org/10.1787/888934304723>

Thus far, credit rating agencies have arguably been more flexible than in previous years in applying their ratings frameworks in their assessments of credit risk despite the marked rise in the gross sovereign debt stock. In Emerging Asia, save for the four rating downgrades outlined in Table 3.2 (i.e. dark orange cells), credit rating agencies have mainly adjusted their outlooks downwards. The changes were also not unanimously on the downside, with Viet Nam receiving outlook upgrades in the first half of 2021 from all three of the major credit rating agencies.

Table 3.2. Latest credit rating by selected credit rating agencies, plus changes in sovereign credit ratings of Emerging Asian economies, 2020-21

	Standard & Poor's	Remarks	Moody's	Remarks	Fitch	Remarks
Cambodia	N/A	N/A	B2	Rating and outlook unchanged since March 2014.	N/A	N/A
China	A+	Rating and outlook unchanged since September 2017.	A1	Rating and outlook unchanged since May 2017.	A+	Rating and outlook unchanged since March 2019.
India	BBB-	Rating and outlook unchanged since September 2014.	Baa3	Rating downgraded in June 2020, from Baa2.	BBB-	Outlook downgraded in June 2020; rating maintained.
Indonesia	BBB	Outlook downgraded in April 2020; rating maintained.	Baa2	Rating and outlook unchanged since April 2018.	BBB	Rating and outlook unchanged since December 2017.
Lao PDR	N/A	N/A	Caa2	Rating downgraded in August 2020 from B3; outlook changed to negative in August 2020.	CCC	Rating downgraded in September 2020 from B-.
Malaysia	A-	Outlook downgraded in June 2020; rating maintained.	A3	Rating and outlook unchanged since January 2016.	BBB+	Rating downgraded in December 2020 from A-.
Philippines	BBB+	Rating and outlook unchanged since April 2019.	Baa2	Rating and outlook unchanged since December 2014.	BBB	Outlook downgraded in July 2021; rating maintained.
Singapore	AAA	Rating and outlook unchanged since March 1995.	Aaa	Rating and outlook unchanged since June 2002.	AAA	Rating and outlook unchanged since May 2003.
Thailand	BBB+	Outlook downgraded in April 2020; rating maintained.	Baa1	Outlook downgraded in April 2020; rating maintained.	BBB+	Outlook downgraded in March 2020; rating maintained.
Viet Nam	BB	Outlook upgraded in May 2021; rating maintained.	Ba3	Outlook upgraded in March 2021; rating maintained.	BB	Outlook upgraded in April 2021; rating maintained.

Note: Light orange indicates outlook downgrade, dark orange indicates rating downgrade, and light green indicates outlook upgrade. "N/A" stands for not applicable. The three credit rating agencies were selected based on their market share in the market for sovereign credit ratings. Data are as of 1 March 2022.

Source: Authors' compilation, based on World Government Bonds, <http://www.worldgovernmentbonds.com/world-credit-ratings/>; Moody's, Rating actions for Asia-Pacific, <https://www.moodys.com/researchandratings/region/asia-pacific/-/004000?tb=0&ol=-1&lang=en>; and Fitch Ratings, Rating actions, <https://www.fitchratings.com/search/?expanded=racs&filter.language=English&filter.reportType=Rating%20Action%20Commentary&viewType=data>.

Apart from containing expenditure and targeting it more effectively, there is also scope for governments to improve revenue collection through specific policies. For instance, the digital economy, which has grown rapidly in Emerging Asia in the past few years, is a potential avenue to expand the tax base. At the same time, governments can also leverage digital tools more than they already do, in order to facilitate compliance and improve tax administration (Box 3.2). However, it should be acknowledged that tax increases may be difficult to implement in the post-pandemic recovery phase and are thus not the first option of choice.

Box 3.2. Expanding the tax base and improving tax administration amid rapid digitalisation

As an alternative to taking on additional debt, and in light of structural changes such as digitalisation, it is important for governments to explore income streams that they have not yet tapped. Higher tax rates are not necessarily a good strategy in periods of crisis, as they may stifle recovery and overburden pandemic-weary firms and workers. However, in economies in which compliance is weaker, and where the informal sector is large, it is an opportune time to find solutions in order to expand the tax base.

In this respect, many governments are now looking to broaden the tax base through wider regulatory coverage in the digital space. As the OECD (2021b) has argued, fiscal policy must adapt in order to take account of a digitalised environment that imposes “new constraints on social protection systems and income tax bases”. The OECD report also underlines that digitalisation provides opportunities for fiscal policy, in that it can enable efficient public administration and enhanced tax compliance given the appropriate infrastructure and systems. As the Asian Development Bank (ADB) has observed (ADB, 2021c), a number of Asia’s developing economies have responded to the fiscal challenges of the pandemic by setting forth tax rules for the domestic e-commerce businesses.

The OECD’s framework recommends a two-pillar approach to managing the tax challenges of a digitalised economy. The first pillar concerns governments’ rights to levy taxes that go beyond a company’s physical presence of establishment. Pillar two, meanwhile, seeks to create a global minimum tax on multinational enterprises, in order to address remaining questions of tax-base erosion, as well as issues of profit shifting (OECD, 2021c). Another relevant recommendation in the OECD’s framework, given the importance of the value added tax (VAT) as a source of revenue in Emerging Asia, is to strengthen the integrity and performance of VAT regimes.

On tax administration, Kochanova and Larson (2016), who utilised a cross-country dataset on e-government systems, found that “e-filing systems reduce tax compliance costs in general, while e-procurement has an observable impact in countries with higher levels of development and better-quality institutions”. Separately, the OECD (2021d) argues that it was clear from the outset that the digitalisation of tax administrations could significantly help in blunting the impact of the COVID-19 crisis on operations. And the governments have responded accordingly. According to the OECD report, the experience of the pandemic has convinced about 60% of the governments surveyed to consider changing their previous strategy on the digitalisation of tax administration processes, while about three quarters of them plan to continue moving audit work from operations in the field to the virtual or digital space.

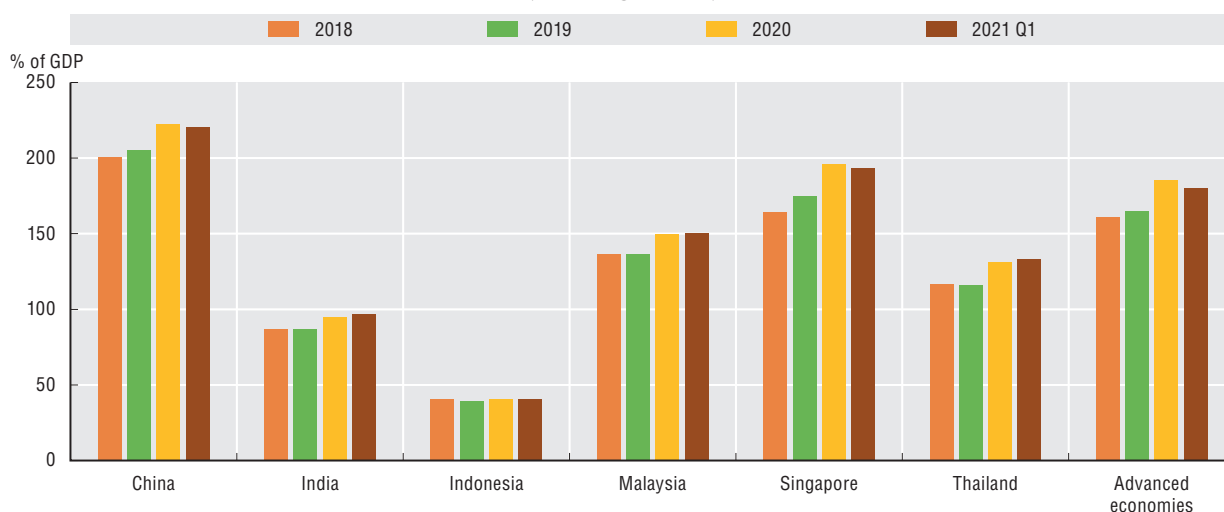
Finally, co-operation between tax administrations in Emerging Asia is essential in the fight against tax evasion and to protect the integrity of domestic tax systems. The exchange of information for tax purposes is a key pillar of this co-operation. There have been calls for increased attention to this matter within Southeast Asia. For instance, ASEAN draws attention to tax co-operation as one of the key elements for supporting regional competitiveness and expresses commitment to improving the implementation of exchange of information processes in line with international standards (ASEAN Secretariat, 2015).

The private sector is also struggling to stay afloat

The financial standing of the private sector has also been badly hit by the pandemic in Emerging Asia. Notwithstanding the support measures that governments have implemented, many firms – particularly micro, small and medium enterprises (MSMEs) – have closed down. Interestingly, Vandenberg (2021) provides evidence that bankruptcies have actually fallen in some relatively high-income economies in Asia over the course of the pandemic, but also notes that enterprises may fail or close permanently without actually undergoing an insolvency or bankruptcy procedure. The author posits that the lower number of bankruptcies could be associated with the speed and “unreservedness” of government stimulus measures. If enterprises that have so far managed to avoid bankruptcy thanks to government support measures are to continue surviving, the author contends that “measures need to continue until economic recovery takes hold”.

In some countries in the region, private sector debt-to-GDP ratios are already well-over 100% of GDP (Figure 3.5). In China, the ratio even exceeds the average levels of emerging and advanced economies alike. This is a critical metric because the pandemic has placed enormous pressure on corporate earnings and ultimately on the serviceability of private debt. Meanwhile, as anticipated, the share of non-performing loans to gross loans in some Emerging Asian countries went up in 2020 and 2021 (Figure 3.6). While the absolute ratios remain arguably generally benign, the large share of big firms in the aggregate borrowing figures, and the significant degree of regulatory forbearance in facilitating the restructuring of loans, may have masked the severity of the situation.^{1,2} Indeed, the impact on MSMEs, which already were underfinanced by formal credit channels even before the pandemic, may only be partially captured.

Figure 3.5. Private sector debt
(Percentage of GDP)



Note: The data refer to the total credit to the private non-financial sector (core debt). Advanced economies comprise: Australia, Canada, Denmark, the euro area, Japan, New Zealand, Norway, Sweden, Switzerland, the United Kingdom and the United States.

Source: BIS (2021), *Credit to the Non-financial Sector database*, <https://www.bis.org/statistics/totcredit.htm>.


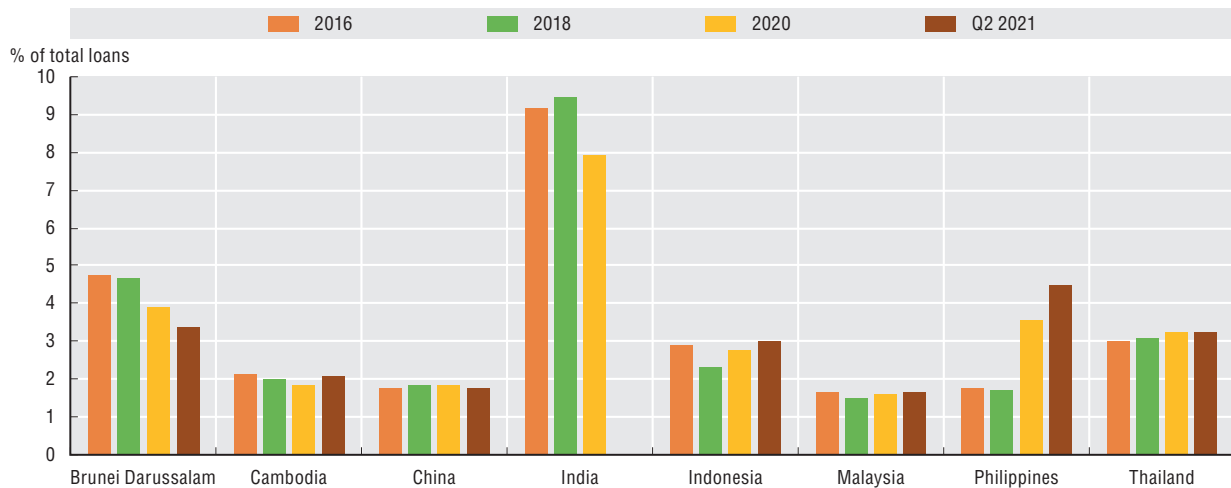

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Figure 3.6. Non-performing loans
(Percentage of total loans)



Source: IMF (2021c), *Financial Soundness Indicators database*, <https://data.imf.org/?sk=51B096FA-2CD2-40C2-8D09-0699CC1764DA>.
StatLink  <https://doi.org/10.1787/888934304761>

The recovery from the COVID-19 pandemic will be shallow and highly exclusive if the financing needs of MSMEs, which the pandemic has hit especially hard, are not addressed appropriately. MSMEs' fundamental importance in economic and social welfare cannot be overemphasised. They are a critical component both of well-functioning domestic marketplaces and of external trade. In Asia, they comprise over 95% of firms, accounting for 30-60% of output, and providing 50-70% of employment (Yoshino and Taghizadeh-Hesary, 2018). Beyond their economic contribution, MSMEs are also immensely important in maintaining and strengthening the domestic supply chains. Ensuring that they flourish is a critical factor in bolstering the social fabric of an economy.

Banks are the primary source of formal credit of MSMEs in Emerging Asia, and few of them have access to equity and bond markets. Since banks generally see MSMEs as riskier clients, however, many of them are unable to obtain the loans that they need. Channelling funds into MSMEs to help them meet their needs has, therefore, long been an important public policy issue. Even before the COVID-19 pandemic, financing for MSMEs was a challenge in many countries, including those in Emerging Asia, even though some governments were already providing support. Such measures include mandated credit programmes in countries like Indonesia and the Philippines.

With the global economy and international trading conditions facing considerable uncertainties, banking sectors have become more risk-averse, and some of the services they provide have become more costly.³ In the recent period of tighter credit conditions, smaller firms appear to have been affected disproportionately compared to the larger ones. The findings of Kim et al. (2021) indicate that while small and medium enterprises account for only around 23% of the demand for trade finance at the banks featured in the survey, they account for 40% of trade-finance rejections.

Box 3.3. Supporting MSMEs' access to finance during the COVID-19

Against a backdrop of tight credit conditions, governments are under pressure to mobilise alternative financing solutions for MSMEs, as they navigate the challenges of the COVID-19 pandemic. Alleviating the liquidity constraints that MSMEs face, regardless of whether they are involved in trade, has to involve the banks one way or the other. However, banks themselves also need help at this time, even if only temporarily.

The results of a 2020 survey by the International Financial Corporation that covers banks involved in trade finance show that, although they have crisis response strategies in place, 91% of the banks in the survey said they need some form of additional support from development finance institutions (Starnes et al., 2021). Furthermore, 96% of banks' detailed requests in this regard related to the need to expand their financial capacity.

The International Chamber of Commerce (ICC, 2020) has outlined some specific interventions that governments and other stakeholders have undertaken, also listing other actions that could help to alleviate the credit tightness. While mainly focusing on trade finance, some of these measures are also applicable to, and supportive of, MSMEs as a whole. The suggested ways forward tend to cover multiple fronts, and several of them are potentially applicable to Emerging Asian economies.

One such suggestion is transitioning to paperless trading by voiding all legal requirements for trade documents to be in paper format, and fast-tracking the adoption of the United Nations Commission on International Trade Law's Model Law on Electronic Transferable Records.

Revisiting the application of the Basel III macroprudential rules is another relevant suggestion, in an effort to limit the capital constraints that may hinder the deployment of essential finance, particularly to MSMEs, and for governments also to consider reducing the risk weights for banks' exposures to MSMEs.

The other potentially practicable suggestions for the region include expanding the guarantees on banks' trade exposures, in order to free up their balance sheets and, in turn, to free up funding resources; ensuring that export-credit agencies are equipped to provide adequate support for short-term trade transactions, with appropriate coverage limits and geographical scope; and enlarging the scale of development bank schemes, in order to provide liquidity for trade-finance transactions and mitigate the corresponding risks.

Financial technology (FinTech) solutions, including digital banks, can also be leveraged to meet the financing needs of MSMEs. In a study that analysed the lending behaviour of digital banks towards micro and small enterprises in China, Sun (2021) found that digital banks managed to evaluate these borrowers remotely, and to sustain lending during the COVID-19 pandemic. In sub-Saharan Africa, IFC (2021) likewise observes that, among financial institutions, "FinTech and mobile money companies saw their businesses grow while more traditional institutions such as banks, savings, and credit co-operatives and microfinance institutions, experienced downturns".

However, building on these encouraging developments in future will require a digital infrastructure that is stable, affordable, and secure. It will also require enterprise managers with sufficient understanding of the process, and the capacity to access financing through these channels. Finally, it will require regulations that cover micro- and macroprudential risks appropriately, while supporting the development of innovative tools.

Source: Authors' elaboration.

The current monetary environment: Prolonged monetary accommodation has kept borrowing costs low

Emerging Asian economies have implemented a mixture of monetary policies to keep the system as liquid and accommodative as possible, and to avert a significant loss in market confidence. These policies include, among others, direct lending and forbearance, loan guarantees, loan reclassification and restructuring, and adjustments to interest rates and reserve requirements.⁴ Taken together, these measures exert a downward pressure on the already-low cost of borrowing.

As things stand, the policy interest rates of many Emerging Asian economies are at multiple-year, if not historic, lows. In India, the prevailing central-bank repurchase agreement, or repo, rate of 4% is the lowest in over two decades. Bank Indonesia's seven-day reverse repo rate of 3.5%, which it adopted as its key rate in August 2016, is at its lowest since the publicly available time series was first released in June 2015. The same can be said of Bank Negara Malaysia's overnight policy rate (1.75%), Bangko Sentral ng Pilipinas's overnight reverse repurchase rate (2%), and Bank of Thailand's policy rate or 1-day bilateral repurchase rate (0.5%), all of which are at record lows since the respective data series based on the current definitions were published in April 2004, June 2016, and May 2000⁵ (see Chapter 1).

Natural rates of interest have generally declined, and are hovering around historic lows in some countries

The natural rate of interest is a key variable for analysing debt dynamics and the sustainability of sovereign debt. For instance, a lower natural rate of interest may also imply lower potential growth, as many of the factors that affect the natural rate of interest also influence potential growth. Lower potential growth is likely to weigh on governments' ability to deal with rising debt stocks. In theory, it is the real (inflation-adjusted) interest rate that would prevail when actual output equals potential output (Borio, Disyatat and Rungcharoenkitkul, 2019). Meanwhile, the drivers of the natural interest rate can include demographic profiles, productivity, the extent of risk aversion, efficiency of financial intermediation, and investment-specific technology (Brand, Bielecki and Penalver, 2018; Sudo, Okazaki and Takizuka, 2018).

Despite the challenges inherent in measuring them, there seems to be a consensus that natural interest rates are trending downwards in developed and developing economies alike (see Box 3.4). Emerging Asian economies are no exception, although there are also cases in the region where the trend is on the rise. As Figure 3.7 shows, every one of the five Emerging Asian economies selected for the sample experienced a decline in their real natural rate of interest over the period under analysis. This finding concurs with the results of previous analyses, which showed a decline in the natural interest rate in Emerging Asian countries (Zhu, 2016; Maybank, 2018). This decline was already in progress for these countries in the early 1990s, but then the Asian financial crisis halted the trend (Tanaka, Ibrahim, Brekelmans, 2021). During the crisis, Thailand, Indonesia, Malaysia and the Philippines experienced sharper spikes in natural interest rates, reflecting how deeply the crisis affected their economies. Following the crisis, the decline in natural real interest rates resumed at the start of the 2000s in all countries in the sample. In Singapore and Thailand, the trend turned in

an upward direction once again from 2013 onwards, after a tightening of monetary policy in the United States. In Indonesia and Malaysia, meanwhile, the real natural interest rate appears to have stabilised since the global financial crisis.

Box 3.4. Globally declining natural interest rates

There is broad consensus that the natural rate of interest has been declining globally over recent decades, although the magnitude of the decline varies among studies. Those based on US data show that the natural rate of interest has declined since the 1980s, particularly since the Great Recession (Williams, 2015). Another estimate showed that the natural rate of interest in the United States dropped to close to zero during the global financial crisis, and stayed there until 2016 (Holston, Laubach and Williams, 2017).

Elsewhere in the literature, Lubik and Matthes (2015) find a secular decline in the US natural rate over the last few decades. Furthermore, Del Negro et al. (2017) observe a decline in the natural rate of interest in the United States since the 1990s, attributing most of this decline to investors' increased preference for safe and liquid short-term assets. However, estimates of the decline differ, ranging between 0% and 2%, depending on the concept used in the study (Fiedler et al., 2018).

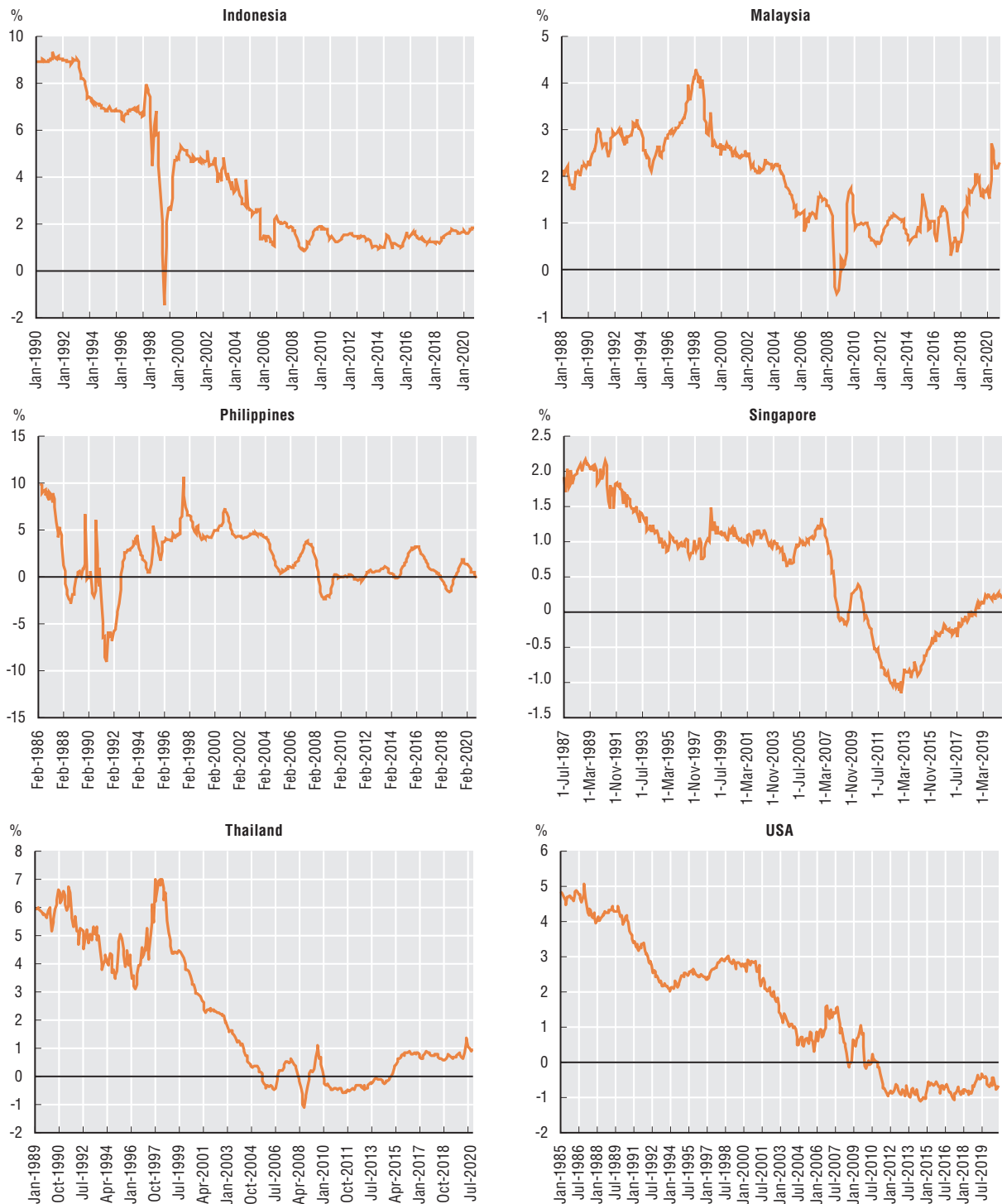
A declining natural rate of interest trend has likewise been observed in other advanced economies, including Canada, the euro area, and the United Kingdom, over the 55 years from 1961 to 2016 (Holston, Laubach, and Williams, 2017; Hong and Shell, 2019). Similar results were found by other studies focusing on Canada (Mendes, 2014), the euro area (Constâncio, 2016; Bonam, et al. 2018), and Japan (Fujiwara et al., 2016). In addition, Haavio, Juillard and Matheron (2017) have shown that the natural rate of interest in the euro area was negative during the Great Recession, and has remained so ever since. Furthermore, Galesi, Nuño and Thomas (2017) have also found support for the observation that the natural rate of interest has dropped over the past few decades, and has even turned negative in some advanced economies.

In general, estimating the natural rate of interest in emerging economies is more challenging, due to the limited length of data series and ongoing structural changes (Goyal and Arora, 2013). However, some studies have tried to provide estimations for Asian economies. For instance, Perrelli and Roache (2014) document the sizeable decline in the natural rate of interest in 24 emerging economies, including in Asia. In emerging economies, the authors reveal, the likely ranges for the natural rate of interest fell by more than 200 basis points between 2002 and 2013.

Similarly, Zhu (2016) shows that, apart from in China, the natural rate of interest in Emerging Asian economies has fallen by more than 4% in recent decades. Other estimates show that the natural rate in ASEAN countries has been declining for two decades. Global factors that are also likely to have contributed to the decline include lower global interest rates, lower public debt, reduced sovereign risk, and an increased supply of savings that have translated into a deepening of financial markets (Maybank, 2018).

Source: Tanaka, Ibrahim and Brekelmans (2021).

Figure 3.7. Real natural rate of interest in selected ASEAN economies
(Percentage)



Source: Authors' calculations.

StatLink  <https://doi.org/10.1787/888934304780>

Overall, the Southeast Asian countries, especially Singapore and Thailand, show a similar overall trend with regard to real natural rates of interest to that of the United States. Still, all of them display idiosyncrasies that cannot purely be associated with shifts in the US interest rate. For instance, in the Southeast Asian countries, the shock of the Asian financial crisis had a much larger impact on the natural rate of interest than in the United States. In addition, while the natural rate of interest remained stable after 2010 in the United States, there were slight increases in some Southeast Asian countries after 2013.

Managing the current stock of debt is crucial to a robust recovery

In the current fiscal and monetary environments as described above, policy makers in Emerging Asia should consider a range of options for managing public debt. In this regard, this chapter discusses various options for managing the current stock of debt, including multilateral initiatives, swap arrangements, debt buybacks, and debt cancellations and write-downs.

As governments may need to take continuous supportive measures in 2022, this chapter also reviews a range of financing sources. These include capital market solutions, such as Environmental, Social and Governance (ESG)-themed bonds, and innovative tools such as insurance-linked securities. This chapter also emphasises how regional co-operation could play in bringing the various financing options fully into operation, through means such as regional risk pools.

Multilateral initiatives are critical in keeping highly indebted economies afloat

With the encouragement of the International Monetary Fund and the World Bank, the Group of Twenty (G20) countries launched the Debt Service Suspension Initiative (DSSI), which aims to lessen the debt burden of low-income and least-developed countries, as they recover from the impact of the COVID-19 pandemic. The DSSI suspends debt service payments (both principal and interest), and provides emergency relief for 73 eligible countries (World Bank, 2021c). In Emerging Asia, Cambodia, Lao PDR and Myanmar are eligible for the DSSI, although only Myanmar is currently participating as of 5 November 2021 (World Bank, 2021c). Cambodia and Myanmar are classified as low-risk countries both for external and overall debt distress. By contrast, Lao PDR is classified as high-risk on both metrics. Myanmar's participation stands to save the country about USD 379.9 million (0.6% of GDP) from May-December 2020, and USD 793.7 million (1.0% of GDP) from January-December 2021 (World Bank, 2021c).

The DSSI comes with a number of conditions, the purpose of which is to balance the needs of debtors with the needs and rights of creditors. The conditions require that savings be channelled into social, health, or economic spending, for the purposes of navigating the COVID-19 crisis. Under the terms of the initiative, debt restructuring must also be neutral in net present value (NPV), and countries must not take on new non-concessional debt while still participating in the initiative.⁶ The NPV neutrality is a critical feature of the programme, serving to mitigate moral hazard. The repayment period is five years, with a one-year grace period for a maximum term of six years. All the Paris Club creditors have agreed to these conditions, and the IMF and World Bank also strongly encourage other creditors to adopt similar terms, whether the debt is sovereign or private.

Swap arrangements are a valuable tool for restructuring debt

Depending on the national context, swap agreements can also be used in renegotiating the terms of debt. In the process of renegotiation, payments can be earmarked for a particular objective. The debt-for-policy swap is an umbrella term for a type of financial swap where a sovereign issuer accepts debt relief in exchange for participation in a mandated policy action. Under such a scheme, the creditor buys the debt of a participating debtor country in exchange for a commitment to channel payments directly into achieving policy goals selected by the creditor. This is instead of directing the payments into servicing debt. Debt-for-environment swaps (also called “debt-for-climate” swaps) are perhaps the most common instruments of this kind.

Debt-for-climate swaps have the potential to provide debt relief for Emerging Asian economies while simultaneously promoting projects and policies to advance climate change mitigation or disaster prevention goals. These may be particularly useful for Asian island nations which are some of the most exposed to climate and natural disaster risks worldwide. This approach would not be entirely novel to Emerging Asia. For instance, the United States Tropical Forest and Coral Reef Conservation Act (TFCRA) is a “debt-for-nature” swap that allows eligible countries to redirect payments of concessional debt owed to the United States to approved grant-making programmes if they meet certain economic and political criteria. From 1998 to 2020, USD 233.4 million were used to restructure loan agreements in 14 countries, providing USD 339.4 million to 20 projects. TFCRA agreements saved more than 67 million acres of tropical forest over this period including in the Philippines and Indonesia (Nature, 2020). Cassimon, Essers and Renard (2009) find that a series of debt-for-education swaps between Germany and Indonesia in the 2000s did not open much fiscal space for Indonesia, but the earmarking required in the agreement may have contributed to the construction and equipment of 511 learning resource centres for advanced teacher training (teacher upskilling), and the construction of 100 junior high schools in the eastern provinces. Notably, these objectives were not unilaterally imposed by Germany, but rather consistent with education goals of the Indonesian government at that time. The desires of the country receiving relief must be taken into account in any of these arrangements; therefore setting up debt-for-policy swaps may be difficult in countries with weaker medium- or long-term sectoral plans.

Debt-for-equity swaps are another variation on this arrangement, and they are utilised in both the public and private sectors. In this type of deal, a share in a public or private company is exchanged for an equivalent amount of debt. This provides a mutual benefit, both to the debtor (debt-relief and investments), and also to the creditors (partial recovery of debt beyond what would be expected otherwise) (World Bank, 1993).

Debt buybacks can be a strategy for lowering the cost of debt service over time

In the same way, a debt buyback, wherein debtors offer a lump-sum payment in exchange for the cancellation of the remainder of the outstanding debt, can also be an option for some countries. Creditors are more likely to accept these terms when it appears that the lump-sum payment is the best possible outcome for them with respect to the debt in question.

Diwan and Spiegel (1991) examine this approach to debt management, by exploring its implementation in the Philippines in 1989. In September of that year, the Philippines reached an agreement with creditors whereby the government would purchase USD 1.3 billion in debt at the rate of 50 cents per dollar, and banks would provide USD 715 million in new money

at a rate 0.675% above the London Interbank Offered Rate (LIBOR), with a 15-year maturity and 7.5 years of grace (total duration of 22.5 years). The new money was disbursed in three tranches, and the buyback was executed on 3 January 1990, with the Philippines ultimately paying a net price of 24 cents on the dollar (Diwan and Spiegel, 1991).

Stiglitz and Rashid (2020) suggest that voluntary buybacks could provide savings for governments if the debt to be bought back is trading at a discount. “Agree[ments] to spend the savings on creating and promoting global public goods’, [such as] public health expenditures and climate change mitigation and adaptation (but not loss-and-damage)” will create future climate financing space at the expense of present reserves.

Debt cancellations and write-downs are an option under extreme conditions

Under extreme conditions, and when it becomes apparent both to debtors and creditors that a full and timely repayment of debt is highly unlikely (e.g. Haiti’s earthquake), the parties involved may conclude agreements to cancel and write down debt.

Although debt cancellations and write-downs could provide some relief to governments struggling to manage their stock of debt, recourse to these options is currently not considered in the Emerging Asia region. This is due to the fact that these options may have some harmful long-term effects. Debt cancellations and write-downs present potential moral hazards. Governments may engage in more profligate spending and debt accumulation in anticipation of some of the debt being cancelled or written down, or they may respond to a successful negotiation of a debt cancellation or write-down by assuming more debt in the space opened by the cancellation or write-down. As such, debt cancellations and write-downs must be an absolute last resort available only in cases of clearly-defined emergencies and be accompanied by strict legislative prohibitions against taking on new debt for a period of time with similarly extremely narrow and clearly-defined exceptions.

As with debt cancellations, elaborating the terms of a debt write-down can be a protracted and costly endeavour if it requires the conclusion of several individual bilateral arrangements. The development of common term sheets to which parties agree through a joint initiative can reduce administrative costs for debtors, and may allow creditors to start accessing repayments more quickly (UNESCAP, 2020).

Examples of debt cancellations or write-downs by Paris Club creditors include three-year payment deferrals for Honduras and Nicaragua after Hurricane Mitch in 1998, one-year payment deferrals for Sri Lanka and Indonesia after the Indian Ocean tsunami in 2004, and a three-year deferral of payments for Liberia in 2008 amid significant long-term political upheaval in the country (Club de Paris, n.d.). While the debt stocks were not reduced, creditors absorbed a loss in terms of net present value by accepting deferred payments.

Broadening financial options for the recovery from COVID 19 – harnessing ESG bond markets and other tools

Prevailing conditions present significant opportunities for policy makers. First, there is an opportunity to increase the efficiency of how the financial resources that are available in the system are put to use. Second, there is an opportunity to harness other financing modalities in order to facilitate recovery from the pandemic. Against this backdrop, this section discusses the financing options for the public and private sectors in Emerging Asia, with the aim of laying a robust foundation for a sustainable and equitable economic recovery.

In particular, this section examines four key topics. The first of these is the viability of themed bonds, or of bonds that are in accordance with environmental, social and governance (ESG) principles. The second key area of focus is to look at considerations for issuing offshore bonds. The third key area to examine is the role that multilateral institutions can play in harnessing innovative tools. A fourth key area to look at, meanwhile, is ex-ante financial measures and, in particular, insurance-linked securities.

Given the significant differences between Emerging Asian countries, however, it is important to underline that certain options that are viable for one country may not be viable for another, or may simply not be appropriate at present. Similarly, financing needs and challenges can vary depending on what the money is needed for, and in which sector. Needs may also vary depending on the level of development of financial markets, including the infrastructure of these markets in the country in question. The preparedness of regulatory architecture to accommodate different types of market participants on both the demand side and the supply side also matters.⁷

ESG-themed bonds have a lot to offer to enable a sustainable recovery

Issuing debt securities as interest rates hit rock bottom is a reasonable option as governments seek to fund their recovery from the COVID-19 pandemic. Nevertheless, considering the other pressing challenges at present, and in particular those that relate to climate change, it is important to tailor financing in a manner that takes ESG factors into account. Indeed, sustainable finance has arguably become a premium investment class in recent years. Moreover, the fixed income securities market is a critical space in the drive towards sustainable finance, and there is growing momentum for this market to develop in the direction of ESG-themed debt securities.

In this respect, two key areas require discussion. The first of these is green bonds, and the barriers to overcome in order to develop this market. Then there is the question of social and sustainability bonds, either those relating specifically to managing the COVID-19 pandemic, or to other social outcomes.

Green bonds herald a number of advantages for governments seeking finance

One potential upside of bond and security instruments that are in line with ESG principles is that they help guide how the funding is used. Green bonds that focus on environmentally responsible projects are used widely, and are one of the most promising financial instruments for financing the transition to a low-carbon economy (OECD, 2017). Another advantage of green bonds is their feature to spread the cost of funding the mitigation of climate change across several human generations. This characteristic makes green bonds particularly suitable for raising funding for green investments, both public and private (Sachs, 2015; Monasterolo and Raberto, 2018). Green bonds are also a good option for attracting a broad spectrum of institutional investors (OECD, 2017).

Due to their explicit link with tangible policies, green bonds may also represent a way for governments in Emerging Asia to increase the credibility of their sustainability objectives. In combination with the attractive risk-return profile of green bonds from the perspective of investors, these factors strengthen the argument for further broadening and diversifying the investor base by opening up the market to new types of institutional investors, as well as to retail investors. Depending on what the proceeds are to be used for, several types of

green bonds exist on the market, including standard green bonds, green revenue bonds, green project bonds, green securitised bonds, and green certificates. The characteristics of these instruments are summarised in Box 3.5, and will be discussed in detail in the paragraphs below.

Box 3.5. Types of green instruments

The most common type of green debt securities are the standard, so-called “use-of-proceeds”, green bonds. These can be defined as debt securities used to fund projects that have a positive environmental impact, or that deliver climate-related benefits (Table 3.3). Proceeds are clearly earmarked for climate-friendly investments, and yet green bonds are backed by the issuer’s entire balance sheet. Issuing green bonds does entail additional transaction costs, however, to the extent that issuers must track, monitor and report on the use of the proceeds.

Table 3.3. Types of green bonds by debt recourse

Type of green bond	Recourse to the issuer
Standard (“use-of-proceeds”) green bonds	Backed by the full balance sheet of the issuer.
Green revenue bonds	Backed by the pledged cash flows of the revenue streams, fees and taxes.
Green project bonds	Risks are borne entirely by the underwriter.
Green securitised bonds	Backed only by the underlying assets.
Green certificates	Backed by the full balance sheet of the issuer.

Source: Authors’ elaboration.

Green revenue bonds are non-recourse-to-the-issuer debt obligations, for which the credit exposure is to the pledged cash flows of the relevant revenue streams, fees and taxes (ICMA, 2017). Meanwhile, green project bonds are bonds issued for a single project, or for a number of pooled green projects, for which risks are borne entirely by the underwriter –with or without potential recourse to the issuer (ICMA, 2017).

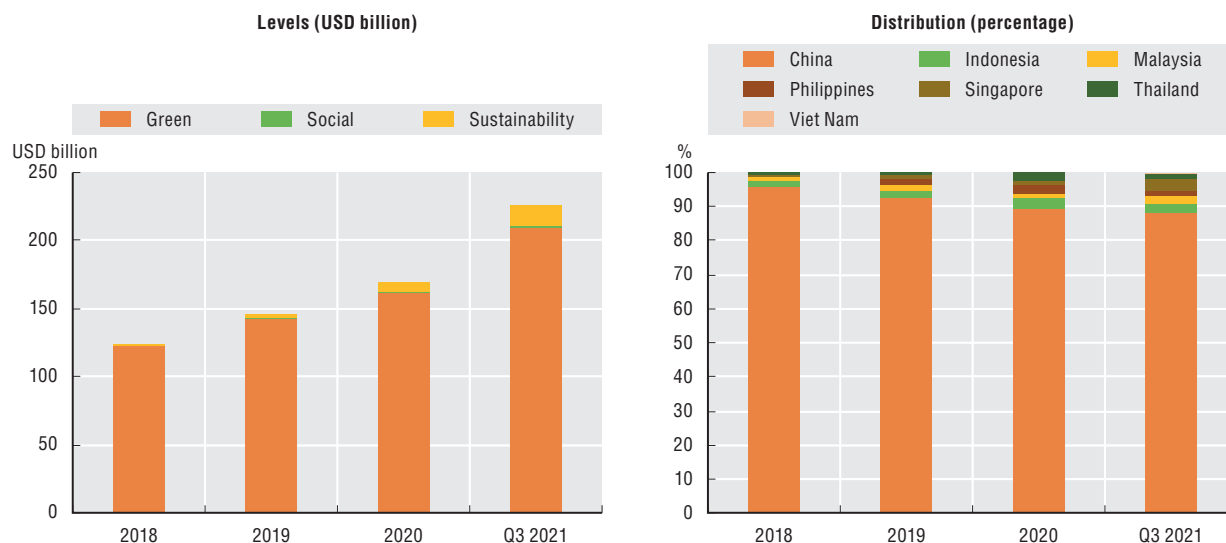
As regards green securitised bonds, they are collateralised by one or more specific green projects. This category includes, but is not limited to, covered bonds and asset-backed securities. In the event of default, green securitised bonds could provide recourse to the issuer, but only to the underlying assets. The repayment of green securitised bonds usually depends on the cash flows that are generated by these assets. For instance, cash flows could take the form of charges paid by consumers to use infrastructure that has been built using the proceeds of a green bond (Kaminker and Stewart, 2012).

Another option is to attach a green certificate to a standard government bond, as a pledge for equivalent green spending rather than specifically earmarking funds for green projects. According to some researchers, green certificates have lower costs and are more liquid than standard green bonds. This design would also make market prices more informative about environmental performance (Bongaerts and Schoenmaker, 2020).

In terms of market size, data as of the third quarter of 2021 show that the combined value of outstanding green, social, and sustainability bonds in the seven economies in Emerging Asia for which data are available is more than USD 225 billion (Figure 3.8), which is still fairly small. In 2020, these bonds accounted for nearly 0.9% of the total for all


outstanding bonds (i.e. local and foreign currency bonds). Nevertheless, the debt stock has grown at an encouraging pace of about 24% annually in compounded annual growth terms between 2018 and the first three quarters of 2021, even when pandemic bonds are excluded. China still accounts for the highest share in outstanding bonds, but the other economies in the region are gradually catching up.

Figure 3.8. Outstanding green, social and sustainability bonds in selected Emerging Asian economies, 2018-Q3 2021



Note: The countries included in the calculation are China, Indonesia, Malaysia, the Philippines, Singapore, Thailand and Viet Nam. The data exclude pandemic bonds.

Source: Authors' calculations based on ADB (n.d.).

StatLink  <https://doi.org/10.1787/888934303868>

With regard to the currency profile of these assets, while over 70% of outstanding green bonds in ASEAN are denominated in the local currency, social and sustainability bonds are mostly denominated in foreign currency (ADB, n.d.). However, local currency issuances are expected to expand further in the coming years, as domestic markets for these themed bonds develop. The interest in these instruments in Islamic financial markets (e.g. Indonesia and Malaysia) is also likely to result in more local currency issuances.

Challenges to the further development of green bond markets in Emerging Asia

Setting out clear parameters for the classification of green bonds, and establishing a credible system of certification, are critical elements in erecting a robust architecture for the ESG financial market to build upon. In this regard, the current debate revolves around the complexity of the existing evaluation process. This is especially the case for green bonds. Meanwhile, the appropriateness and clarity of national regulatory frameworks are also important considerations.

The issuance of a green bond involves a series of specific steps, and is more complex compared to plain-vanilla bonds. As a result, the entire process requires staff with knowledge of climate-related issues and environmental accounting and communication processes. Among other recommendations, the International Capital Markets Association's

(ICMA) Green Bond Principles encourage green bond issuers to seek out external reviews in order to evaluate both the alignment of green bonds with the Principles themselves, and to make a qualitative assessment of the overall “greenness” of the bonds. These reviews can in themselves be complicated and lengthy. The salient features of Green Bond Principles are explained in Box 3.6.

Box 3.6. The salient features of Green Bond Principles

The Green Bond Principles developed by ICMA are voluntary guidelines that encompass four core criteria. The first of these is the use of the proceeds, the second considers the selection and evaluation of projects, the third criterion relates to fund management, and the fourth is about reporting. For as long as a green bond is outstanding, the Green Bond Principles recommend that the issuer should disclose both a reconciliation of the green account (i.e. the total amount of proceeds from the green bond issuance) against project expenditures, and information on how the unallocated balance (i.e. the difference between the green account and total project expenditures) is placed. Furthermore, the Green Bond Principles identify four types of external reviews, namely: second-party opinion, verification, certification by the Climate Bonds Initiative (CBI), and green credit ratings (Dorfleitner et al., 2021).

Second-party opinions are the most popular external reviews for green bonds. They contain a thorough and detailed description of the issuer’s green bond framework, and of the rules and procedures for climate-related activities. Verification reports are less lengthy and detailed compared to second-party opinions, and are typically issued by auditing firms. The CBI certification scheme is based on scientific criteria that ensure consistency with the goal of the Paris Agreement to keep global warming well below 2 degrees Celsius. Finally, green credit ratings are more quantitative in their nature, and focus on an issuer’s environmental performance data. They are issued by traditional credit rating agencies.

The reporting of specific information is likely to pose similar challenges from an issuer’s perspective. The issuers of green bonds must prepare, keep and make available an information file on the use of the proceeds. This information needs to be updated each year, until all of the funds have been allocated, and as necessary thereafter. This information file must include the list of projects in which the funds have been invested, the amounts invested, and the impact that these investments are expected to have. When confidentiality clauses, or the multiplicity of underlying projects, make it difficult to disclose sufficiently detailed information, the Green Bond Principles recommend presenting the file in generic terms, or on the basis of aggregated portfolios (i.e. the percentages allocated to certain categories of projects).

Transparency is a key factor in communicating about the expected impact of projects. The Green Bond Principles recommend using qualitative and, where possible, quantitative performance indicators. Examples of quantitative indicators in this regard include energy capacity, power generation, the degree of reduction or elimination of greenhouse gas emissions, the number of people who have gained access to clean energy, the size of the reduction in the volume of water consumed, and the reduction in the number of vehicles needed. The Green Bond Principles also outline the main underlying methodology or assumptions that should be used in providing quantitative assessments. Issuers that are able to quantify the ultimate impact are encouraged to include it in their regular reporting.

The importance of dedicated regulatory frameworks

Most developing economies, including those in Emerging Asia, lack a dedicated legal framework for the issuance of green bonds (ADB, 2018b). This means that they lack clear definitions, that there is a risk of “greenwashing”, and also that they lack a common framework for the classification of green bonds. This lack of an adequate over-arching framework tends, in turn, to curtail the supply of green bonds, while also fuelling investors’ apprehensions. As pointed out by Shishlov et al. (2016), one of the major challenges for the green bond market is guaranteeing its environmental integrity in order to tackle the greenwashing risks that could hamper its success. Investors are fully aware of the existence of a greenwashing risk. An investor survey carried out by the Climate Bonds Initiative showed that green credentials and transparency on the part of issuers are the most important factors for green bond investors making investment decisions (CBI, 2019).

Nevertheless, there are a number of reasons to be optimistic for the future as far as market infrastructure is concerned. As mentioned above, groups such as ICMA and CBI have put together voluntary guidelines. ICMA has separate guidelines for green, social, sustainability and sustainability-linked bonds that also cover traditional and sukuk bonds. Meanwhile, the CBI has developed its own standard for the certification of green bonds.

Apart from these two umbrella groups, government institutions in countries including China, India, Indonesia, Malaysia, the Philippines, and Thailand have started developing their own frameworks and guidelines, although the scope and depth of these do vary. In 2015, China published a set of guidelines on green bonds, as well as a catalogue of endorsed projects (Yu, 2016; WRI, 2016). For its part, India released an official set of requirements for green bonds in 2016, closely mirroring the general architecture of the Green Bond Principles (SEBI, 2017). In addition, Indonesia rolled out a framework on green bonds and sukus in 2018 (Government of Indonesia, 2021). Malaysia published a framework for “sustainable and responsible” sukus in 2014 (Government of Malaysia, 2019). Furthermore, the Philippines released a set of guidelines on issuing green bonds in line with ASEAN’s Green Bonds Standards in 2018 (Government of the Philippines, 2018). Even more recently, Thailand published a sustainable financing framework in 2020 (Government of Thailand, 2020).

Multilateral organisations have also adopted green bond guidelines, and established various taskforces and working groups for greening the financial system. Examples of such initiatives include the joint roadmap for a sustainable financial system from the United Nations and the World Bank (UN Environment and World Bank, 2017), and also the work of the Taskforce for Climate-related Financial Disclosures (TCFD, 2017). At the same time, ASEAN is developing a common taxonomy for sustainable finance, which will provide the bloc with a common language in this domain, while also complementing initiatives at the national level (ASEAN, 2021).

In addition to the regional approaches, developing frameworks that are coherent at the global level could yield various benefits. Indeed, a global taxonomy could attract institutional investors and reduce the cost of cross-border capital flow transactions. An important initiative in this respect is the G20 Sustainable Finance Working Group (hereafter “SFWG”), established by the G20 member countries.⁸ In 2021, the SFWG has been tasked with developing a multi-year G20 Sustainable Finance Roadmap (hereafter “Roadmap”), which identifies the G20’s priorities in the area of sustainable finance. The Roadmap also sets

out the work to be carried out by the SFWG on three specific priority areas: improving the comparability and interoperability of approaches to align investments to sustainability goals; overcoming information challenges by improving sustainability reporting and disclosure; and enhancing the role of International Financial Institutions in supporting the goals of the Paris Agreement and 2030 Agenda (SFWG, 2021).

The supply of sovereign green bonds remains rather limited

Demand for green bonds tends to outweigh supply. Furthermore, leading issuers such as the World Bank and the European Investment Bank have so far carried out part of their issuance through private placements, a type of transaction that does not bring any real additional liquidity to the market. A generalisation of public green bond issuances, however, could achieve this kind of desirable liquidity.

In Emerging Asia, the supply of sovereign green bonds is relatively sparse outside the core markets of China and India. In ASEAN, meanwhile, only Indonesia and Thailand have so far issued sovereign green bonds. Indonesia is leading the way, with four green bond and sukuk issuances between 2018 and 2020, for a total of USD 2.8 billion (Table 3.4). Meanwhile, the Thai government issued the country's first sovereign sustainability bond in August 2020. It was for USD 2.06 billion, and the government allocated the proceeds to transport and land use. Relative to domestic GDP, however, the amounts that Indonesia and Thailand have issued do appear very low. In Indonesia, each issuance was below 0.5% of GDP, while Thailand's issuance was equivalent to 1.82% of GDP. These low levels show that there is significant potential for stepping up sovereign issuance in these two countries alone.

Table 3.4. Sovereign issuance of green bonds or sukuku in Indonesia and Thailand, 2018-20

Sovereign issuer	Issue date	Amount issued	Amount issued relative to domestic GDP	Use of proceeds
Indonesia	March 2018	USD 1.25 billion	0.49%	Energy, buildings, transport, waste, land use
Indonesia	February 2019	USD 0.75 billion	0.29%	Energy, waste, water
Indonesia	June 2020	USD 0.75 billion	0.30%	Energy, waste, water
Indonesia	December 2020	USD 0.39 billion	0.10%	Energy, buildings, transport, water, waste, land use
Thailand	August 2020	USD 2.06 billion	1.82%	Transport, land use

Note: The Indonesian figures capture both standard green bonds and Islamic-labelled bonds (sukuk).

Source: Authors' elaboration based on CBI (2021).

It is important for issuers to reassure investors with regard to risk

For any investment product, the risk-return ratio remains the first criterion of choice for investors. Thus, the profile of the issuer is a critical factor for investors. This is also true for green bonds, most of which continue to be issued by entities with elevated credit ratings, such as the World Bank. This reasoning is all the more true as prudential rules, such as the internationally-applied Basel III measures, have a tendency to get stricter. In turn, these strict regulations have the effect of encouraging investments in the least risky assets.

Investing in green bonds presents a range of specific risks for investors, such as reputational risk if the project that the bonds are financing fails to meet its stated green objectives. This risk notwithstanding, investors with reasonable doubts that a bond will actually meet the required environmental expectations only have limited opportunities

for legal enforcement of the asset's green integrity. Looking ahead, investors' confidence may increase if they can seek penalties if the bonds fail to achieve the anticipated impacts.

Policy options for addressing challenges and developing a green bond ecosystem

In order to develop sustainable finance, it is important to address barriers both for issuers and investors. In particular, a broad pool of investors is crucial to ensuring the successful development of sovereign green bond markets, and to make sure yields respond accurately to fundamentals. The following sub-section of this chapter seeks to bring several options to the attention of policy makers in Emerging Asia. Table 3.5 summarises these options, both on the supply side and on the demand side.

Table 3.5. Summary of existing challenges, and policy options to support the development of sovereign green bond markets in Emerging Asia

Stakeholder	Challenges	Policy options
Sovereign issuer	The complexity and cost of external review and reporting procedures.	<ul style="list-style-type: none"> • Seek support from international financial institutions (i.e. ADB, IMF, World Bank), in order to reduce the cost and complexity of external review and reporting procedures. • Envisage private placements of green bonds in order to reduce costs (although this can be detrimental to liquidity).
	Regulatory barriers relating to the management of proceeds from green bond issuance.	<ul style="list-style-type: none"> • Develop sound processes for managing the proceeds of green bonds. • Remove any regulatory barriers that could hinder the effective allocation of proceeds from the issuance of green bonds.
Investor	The lack of clear definitions, and the risk of greenwashing.	<ul style="list-style-type: none"> • Endorse internationally-agreed standards. • Agree on a standardised framework at the regional level.
	Limited supply of sovereign green bonds.	<ul style="list-style-type: none"> • Increase issuance by national governments and subnational entities, in particular cities. • Establish public green banks.
	Reduced incentives for domestic institutional and retail investors to participate in green bond markets.	<ul style="list-style-type: none"> • Hold investor roadshows in order to boost awareness of green bonds. • Encourage the participation of institutional investors, in particular pension funds. • Encourage the participation of retail investors. • Provide tax incentives to investors. • Tackle reputational risk through penalty mechanisms (e.g. bond buyback obligations).

Source: Authors' elaboration.

Leveraging external support and private placements to overcome complexity and cost

In order to reduce the cost of external reviews and streamline the reporting process, governments in Emerging Asia should take advantage of the support they can get from organisations and experts such as development banks, structuring advisors, and stock exchanges. In particular, public development banks could play a multifaceted role in the green, social and sustainability bond market. For instance, public development banks have the potential to mobilise private investors by issuing guarantees or by providing first loss tranches to enhance the risk/return profiles of projects in developing economies. In addition, public development banks can provide technical support to prepare sovereign issuances (OECD, 2021e).

As an example from Emerging Asia, the ADB assisted Thailand's government in designing and issuing the country's first sustainability bond in 2020. The ADB has provided its technical assistance within the framework of ASEAN's Catalytic Green Finance Facility. Its assistance includes help with external reviews, the development of internal systems to monitor the use

of bond proceeds, and the preparation of post-issuance reports. Thailand's sustainability bond raised 30 billion Thai baht (THB), or approximately USD 964 million, and was oversubscribed three times. The country's government will use the proceeds of the bond to finance green infrastructure, namely the eastern section of the Orange Line of Bangkok's MRT mass rapid transit system. The Thai sustainability bond will also fund social impact projects to support the country's recovery from the COVID-19 pandemic, such as public health measures, job creation through small and medium-sized enterprises, and the development of local public infrastructure with social and environmental benefits (ADB, 2020a).

Notwithstanding the longer-term desirability of a generalisation of public issuance in order to foster liquid markets, governments could also potentially cut costs by envisaging private placements of green bonds, selling them directly to a limited number of investors. In addition to cutting costs, private placements can also speed up the issuance of a bond.

To date, private placements of green bonds have largely been used in emerging market economies as a market-development tool by multilateral development banks. However, private placements could also fulfil a niche role in the sovereign green bond market in Emerging Asia, in particular when multilateral development banks are supporting the issuance. The types of investors that may participate in private issuances, such as state-owned enterprises, mutual funds, pension funds, and other asset managers, have ample endowments, and typically turn to government securities to minimise investment risk. The Indonesian government, for example, turned to these types of investors in April 2020 when it placed debt privately in order to finance its response to the COVID-19 pandemic (Box 3.7).

Box 3.7. Indonesia's use of private placements to finance its response to COVID-19

In April 2020, the country's government raised 62.6 trillion Indonesian rupiah (IDR), or around USD 4.05 billion, by selling three series of bonds through private placements. The buyers in the private placement sale were domestic banks that were looking to meet the central bank's new requirement of higher reserves in the form of government bonds.

In addition, the government of Indonesia and Bank Indonesia agreed on a burden sharing scheme in July 2020, in light of the government's increased financing needs triggered by the pandemic. A new law has been issued in March 2020, authorising Bank Indonesia to purchase long-term government bonds in the primary market. To ensure a transparent market mechanism, Bank Indonesia's purchase of government bonds in the primary market is conducted in line with the following priority order: a regular auction; an additional auction, known as greenshoe option; and a private placement. In this respect, a private placement is to be held when the issuance target has not been fulfilled even with the green shoe option.

In order to finance the public goods package – comprised of health spending, social protection, as well as support of key economic sectors and local governments – Bank Indonesia has committed to purchase bonds through private placements and bear the full interest expense until their maturity dates. These bonds had maturities between five and eight years and coupons equivalent to the weighted average of the 3-month reverse repo rate. As of early November 2020, Bank Indonesia had purchased IDR 253 trillion (equivalent to approximately USD 18 billion) of government bonds via private placements to finance the public goods package, and absorbed the full interest cost of these bonds.

Source: Authors' elaboration based on AMRO (2021), Diela and Suroyo (2020) and national sources.

Developing sound procedures to manage the proceeds of green bonds

The Green Bond Principles require issuers to disclose how they will use the proceeds, and to prove that all of the money will flow into green projects throughout the life of the bond. In addition, it is essential to make sure that the amount of capital raised matches up with the cost of the projects that it will finance, and that there are enough green projects in progress or in the pipeline to account for the proceeds. As such, sovereign issuers should plan in advance for how they will manage the proceeds if they do not expect to invest them immediately and there have to be safeguards to track the allocation of proceeds, and to make sure that the same eligible green project does not get listed more than once. In Malaysia and Thailand, for example, the countries' green bond frameworks mention explicitly that they will maintain a register to record the allocation of proceeds, and that they will manage and invest any unallocated proceeds in short-term liquid instruments (Box 3.8).

Box 3.8. Examples of how sovereign issuers in ASEAN manage the proceeds of green bonds

In **Indonesia**, the proceeds of each green bond or sukuk are managed within the government's general account, in accordance with prudent treasury-management policies. Upon request from specific ministries, this general fund then credits proceeds from green bonds and sukus to a designated account at the ministry in question in order to fund projects that fit the definitions set out in Indonesia's green bond framework.

Malaysia has also developed a specific framework for a Sustainable Development Goal (SDG) sukuk. Under the terms of this framework, the net proceeds of the sukuk will be transferred to the government's specific development fund. In turn, the finance ministry will maintain an SDG Sukuk register to track and manage the allocation process. The register will contain information on the parameters of each sukuk issuance, such as the pricing date, the maturity date, and a list of eligible expenditures. The Malaysian government plans to fully allocate the net proceeds to eligible projects within the first year of issuance. Unallocated proceeds will be held in cash and cash equivalent.

In the case of **Thailand**, the net proceeds of any green, social and sustainability financing instrument will be transferred to the government's treasury reserve account. Safeguards are in place to ensure that the allocation of proceeds does not allow any double listing of the same eligible green or social project. The balance of the net proceeds will be adjusted on a regular basis to match allocations for eligible green and social projects made during the life of the financing instruments. In addition, a register will be maintained in order to record the allocation of the proceeds. Pending the full allocation of the net proceeds to eligible green or social projects, any unallocated funds will be managed and invested in temporary liquid instruments (i.e. cash or cash equivalents).

Source: Authors' elaboration based on World Bank (2018) and national sources.

In making sure that net proceeds from a green bond flow into a suitable form of allocation, an important question is whether governments should open a special account to manage the funds that they raise from green bonds. Practice differs among the ASEAN countries that have already adopted specific frameworks for sovereign green bonds (Box 3.8). In Indonesia and Thailand, the net proceeds are held in the government's general treasury account, while

in Malaysia they are transferred to the government's development fund. Although there is currently no consensus on the best practice in this regard, setting up a special account for the management of net proceeds may streamline the allocation process and enhance investor confidence. In Fiji, for example, the economy ministry opened a designated, ring-fenced sub-account in order to store the proceeds from the issuance of green bonds (RBF, 2017).

Developing clear and standardised definitions to reduce the risk of greenwashing, and facilitate cross-border transactions

For green sovereign bond markets to thrive in Emerging Asia, they need to attract institutional and retail investors alike. Policies aimed at diversifying and increasing the participation of both institutional and retail investors in the sovereign green bond market are, therefore, of the utmost importance for policy makers across the region.

One of the biggest bottlenecks for the development of green bond markets in the countries of Emerging Asia is the lack of an overarching framework to define and classify green bonds. In most countries across the region, the market for green bonds is generally not subject to government regulation. And in countries that lack a clear regulatory framework for green bonds, the risk of greenwashing is arguably higher.

Yet despite the limited development locally of comprehensive frameworks of this kind, the ICMA Green Bond Principles are, at the current juncture, considered to be the most widely accepted standards to promote transparency and disclosure in the green bond market, and to reduce the risk of greenwashing. Issuers of sovereign bonds in Emerging Asia need to adhere to the ICMA principles in order to enhance the integrity of the green bond market, and thus to send a signal of reassurance to investors.

Indonesia, for example, has integrated the ICMA Green Bond Principles into its framework for green bonds and sukuk. Under the terms of the framework, the proceeds of each green bond and sukuk will be used exclusively to finance or re-finance expenditure that relates directly to eligible green projects. These are defined as projects that promote the transition to a low-carbon economy and to climate-resilient growth. They must fall into at least one of the several sectors that the framework sets out (Government of Indonesia, n.d.). These include renewable energy, energy efficiency, resilience to climate change for highly vulnerable areas and sectors. They also encompass projects to reduce disaster risk, sustainable transport, and facilities that convert waste into energy. Furthermore, they also include waste management, the sustainable management of natural resources, green tourism, and sustainable buildings and agriculture.

Other examples in this respect are the various initiatives undertaken by public authorities in China and India towards ensuring clear and standardised definitions of green bonds, in line with international standards.

As mentioned above, China's central bank published a set of guidelines for green financial bonds in 2015, including criteria for the management of proceeds, and requirements on disclosure (Yu, 2016). It also took decisive steps towards the standardisation of green bonds, by publishing a catalogue of endorsed projects (WRI, 2016). The catalogue describes the types of projects that are eligible for green bonds, and is based on Chinese environmental policies and international environmental standards. As regards the specific types of endorsed green projects, the latest version of the catalogue contains a four-level classification, which grades green projects into several categories. These encompass saving energy and protecting

the environment, cleaning up industrial production and the energy sector, developing the so-called eco-environment industry, upgrading infrastructure in an environmentally sustainable manner, and green services. The 2020 catalogue contains more sectoral standards and regulations than previous editions, thus increasing the requirements for third-party verification of green bonds (CBI, 2020).

In India, there is a set of official requirements for green bonds from the country's Securities and Exchange Board, which follows the general architecture of the Green Bond Principles, turning some of their recommendations into firm requirements. These requirements cover the definition of green bonds, plus external review, the tracking of the proceeds, and disclosure (SEBI, 2017).

In order to facilitate cross-border transactions in Emerging Asia, the standardisation of definitions for green bonds is essential, but without resorting to a heavy-handed approach. Imposing overly detailed standards has the potential to increase issuance costs, so standards should allow enough room for flexibility to respond to the different constraints that issuers may face. As noted above, there has already been some movement in Emerging Asia to create regional standards for green bonds, notably in the form of the joint statement from ASEAN's seventh meeting of finance ministers and central bank governors, affirming that action is underway to develop a sustainable finance taxonomy (ASEAN, 2021).

Increasing the supply of sovereign green bonds, in particular from sub-national entities

More sovereign issuers in Emerging Asia could launch green bonds. In so doing, they would signal support for the market, and would contribute to its deepening by increasing the supply of green bonds in the medium term. Arguably, the issuance of sovereign green bonds could send a strong signal that governments are committed to supporting the market, by providing opportunities to invest in a broad range of projects and at relatively low yields. A deeper market would create favourable conditions for a decline in yields.

Furthermore, increasing the supply of sovereign green bonds will attract more investors. In turn, this will then also incentivise more private actors to issue green bonds. Aside from national governments, the relevant public actors that could issue green bonds are sub-national entities, such as regional or provincial governments, and municipalities. Looking ahead, public green banks (Box 3.9) are relatively new financial institutions that could also potentially play a role in expanding the offering of green bonds in Emerging Asia.

Box 3.9. The policy design of the state-backed infrastructure bank in the United Kingdom

In November 2020, the UK's national infrastructure strategy set out the government's intention to establish a new infrastructure bank. The new bank will pursue two central policy objectives through its interventions in the infrastructure market. The first of these is to tackle climate change, in line with the UK's target of bring greenhouse gas emissions to net zero by 2050. The second main objective is to support regional and local economic growth through better connectivity, opportunities for new jobs, and higher levels of productivity. Although the new infrastructure bank's initial focus will be climate change, the government will review the case for expanding it to include other areas, such as strengthening the country's natural capital.

Box 3.9. The policy design of the state-backed infrastructure bank in the United Kingdom (cont.)

In terms of capital and financial management, the Bank will start with 22 billion pounds (GBP) of financial capacity. This will consist of GBP 12 billion to enable lending and investment, plus GBP 10 billion in the form of guarantees. The bank will be able to borrow up to GBP 7 billion from a government credit facility administered by the Debt Management Office, and also from private markets, including through the issuance of green debt instruments.

The Bank was officially launched in June 2021 and made its first private sector transaction in early December 2021. The transaction will help capitalise a new GBP 500 million fund with NextEnergy Capital, a leading investment manager in the solar infrastructure sector. The fund, NextPower UK ESG, is a private 10-year solar infrastructure fund that aims to raise GBP 500 million to invest into subsidy-free solar power plants in the United Kingdom. The Bank is providing financing to the initial seed assets of the fund, comprising two major subsidy-free solar farms in the United Kingdom, and plans to invest up to GBP 250 million on a match-funding basis with the private sector.

Source: HM Treasury (2021) and UKIB (n.d.).

Just as national governments can issue government bonds to finance green investments in areas like clean energy or energy efficiency, cities, regions, provinces and public utilities could issue green bonds to finance investments in green public infrastructure. And since a large share of greenhouse emissions originates in cities, and with cities across Emerging Asia expected to grow further, green bonds can be a means for cities to secure funding for green investments. Aside from cities issuing green bonds directly, another option is to issue them through municipal bond agencies. Such agencies can act on behalf of several municipalities or other sub-national actors. One example of this is the Municipal Bond Agency in the United Kingdom (CIPFA, n.d.). While green bond issuance by municipalities is not new in OECD countries (Box 3.10), no cities in Emerging Asia have so far issued this type of debt.

Box 3.10. The city of Gothenburg's green bond framework

In 2013, the Swedish city of Gothenburg was the first municipality in the world to issue green bonds. The net proceeds have been allocated to finance or refinance, in whole or in part, the city's investment in building a low-carbon, climate-change resilient, and ecologically-sustainable society. By contrast, none of the proceeds can be allocated to projects with links to producing energy from fossil or nuclear fuels, to the weapons and defence industry, to resource extraction that may harm the environment, or to gambling and tobacco.

Green project evaluation and selection process is the first stage in the decision-making process. The process to evaluate, select and allocate green bond proceeds to eligible green projects comprises three steps. As a first step, the relevant project manager evaluates potential green projects and presents them to the Green Bond Committee. Second, the Green Bond Committee approves the potential green projects based on adherence to the Green Bond Framework and approved green projects are subsequently included in the City of Gothenburg's pool of approved green projects. Finally, decisions regarding the approved green projects are documented and filed.

Box 3.10. The city of Gothenburg’s green bond framework (cont.)

As regards the management of proceeds, the net proceeds are credited to a special green account. For as long as the bonds are outstanding and the green account has a positive balance, funds may be deducted from it for disbursements made over the year towards eligible green projects. While any green bond net proceeds remain unallocated, the City of Gothenburg will temporarily place funds in the liquidity reserve and manage them accordingly. The maximum period that net proceeds may be unallocated is 12 months. Unallocated proceeds may not be invested in fossil fuel-related assets.

To ensure transparency, the city of Gothenburg provides annual reports to investors until the bonds reach maturity. These reports contain information about the allocation of proceeds and the environmental impact of the green projects. Allocation reporting will include the following information: a summary of green bond developments; the outstanding amount of green bonds issued; the balance of the green account; the total proportion of green bond net proceeds used to finance new green projects and the proportion of green bond net proceeds used to refinance green projects completed earlier; and the total aggregated proportion of green bond net proceeds used per green project category.

Source: City of Gothenburg (2019).

In many countries in Emerging Asia, sub-national entities do not necessarily issue green bonds, and they could benefit from support measures from the national government in areas such as financial management and accounting practices, credit enhancements, and temporary tax incentives. The World Bank’s City Creditworthiness Initiative is one example of such efforts. Another is the various green city bond coalitions that have been emerging around the world. Such coalitions aim to build up cities’ capacity to issue green bonds, through training programmes and toolkits such as how-to-issue guides, through the provision of strategic support through development banks, through the sharing of best practices among cities’ treasuries, and also through investor awareness campaigns. In 2015, a Green City Bond Coalition was established in the United States, while similar coalitions are currently in the pipeline for India, China and Asia-Pacific (CBI, 2015).

Increasing the participation of domestic institutional and retail investors in green bond markets

Institutional investors may have specific constraints that can limit their investment options. According to a CBI survey of European green bond investors carried out in 2019, investors have to work within restrictions regarding currency and deal size, and these can affect their capacity to invest in green bonds (CBI, 2019). As they seek to make their offerings as attractive as possible, sovereign issuers of green bonds need to carefully balance the duration of the projects that they wish to finance with the appetite of investors. For instance, longer tenors tend to attract insurance companies and pension funds that seek to match their long-term liabilities with long-term assets.

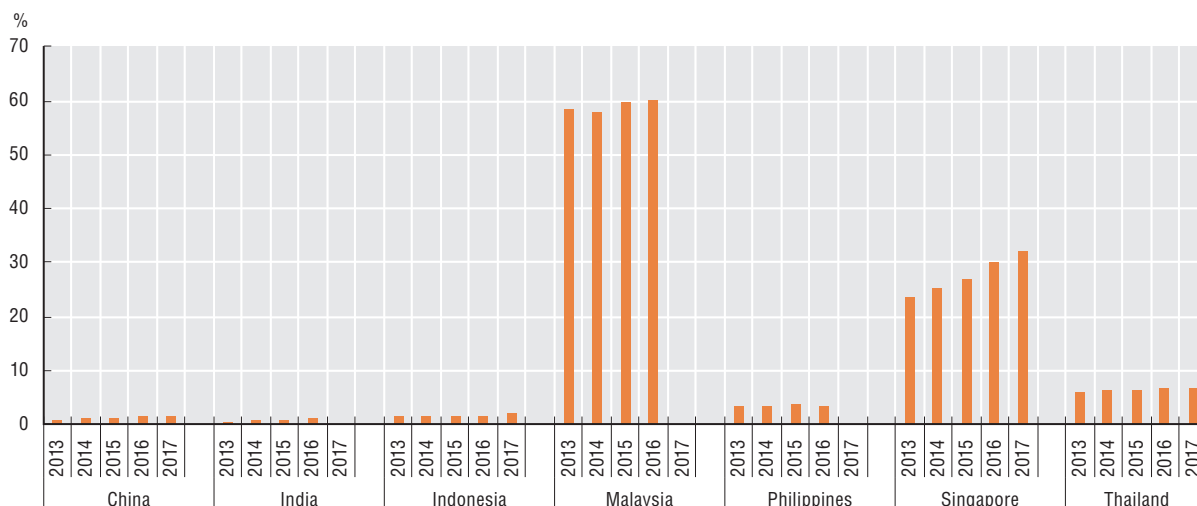
In order to put investors’ minds at ease about the potential for reputational risk, meanwhile, one solution is to introduce penalty mechanisms into the terms of a green bond. Such penalty mechanisms could take the form of bond buyback obligations on the side of the issuer. This would mean that the issuer would repurchase its green bonds from

bondholders if it does not fulfil its obligations. This could be because of a failure to achieve the desired green impact, or a loss of green ratings for the respective bond.

In addition, governments may apply tax incentives to green bonds. One example of this is exempting investors from having to pay income tax on the interest they earn on a green bond. Evidently, investors' demand for green bonds tends to be higher in jurisdictions where such tax incentives are in place. There have been tax incentives of this kind in the United States for bonds financing renewable energy and green buildings. Tax incentives have also been proposed for green bonds in some countries in Emerging Asia, such as India and Malaysia. In India, some tax exemptions were introduced to stimulate domestic demand for green bonds and the market responded favourably. For example, the tax-free bond issued by the Indian Renewable Energy Development Agency in 2016 was more than five times oversubscribed (Agliardi and Agliardi, 2019).

Authorities in Emerging Asia could consider launching regular investor roadshows both within the region and beyond, in order to promote participation in green bond markets. The focus should be on attracting institutional and retail investors for both private and public sectors, including some public pension funds. The size of the sector is particularly large in Malaysia, where pension fund assets relative to GDP amounted to 59.9% in 2016, and also in Singapore, where they amounted to 32.2% of GDP in 2017 (Figure 3.9).

Figure 3.9. Pension fund assets in selected Emerging Asian economies, 2013-17
(Percentage of GDP)



Note: Data for 2017 are unavailable for India, Malaysia and the Philippines. Data capture both public and private pension funds.

Source: World Bank (n.d. a), *Global Financial Development Database*, <https://databank.worldbank.org/reports.aspx?source=global-financial-development>.

StatLink  <https://doi.org/10.1787/888934304799>

If the participation of domestic investors remains low, tapping international markets might be a more attractive option for some governments in Emerging Asia. This may allow for a further diversification of the existing investor base and open opportunities to governments to issue larger volumes at longer maturities. However, issuing bonds on international markets entails specific risks, such as foreign-exchange fluctuations, and the higher transaction costs that can stem from additional regulatory and documentation requirements.

According to a report by the Climate Bonds Initiative, local currencies have dominated the ASEAN social and sustainability bond markets to date. In 2020, the combined share of bonds denominated in local currencies stood at 60%, while issuance in hard currency (mainly US dollars) accounted for the remaining 40% (CBI, 2021). Many Emerging Asian sovereigns have a history of issuing in US dollars, most notably Singapore and Indonesia. This practice could be extended to include green bonds. For instance, sovereign issuers in the region could sell green bonds denominated in the world's most heavily-traded currencies, in order to attract cross-border investment. Indonesia's sovereign green bond issuance, for example, met with a positive reception from investors (Box 3.11).

Box 3.11. Sovereign green issuance from Indonesia saw increased investor interest

Investors' interest in sovereign green bonds and sukus from Indonesia increased between 2019 and 2020. Interest from the retail sector also increased over this period. The green sovereign sukuk issued in December 2020 for USD 383.7 million attracted 16 992 retail investors, up from the 7 735 retail investors involved in the 2019 issuance.

In addition, the five-year green sukuk that the Indonesian finance ministry issued in June 2020 amounting to USD 0.75 billion to accommodate the state budget's deficit in response to the pandemic was oversubscribed 7.73 times. Green investors accounted for 33.74% of the pool of investors, an increase from 29% in the 2018 and 2019 issuances. The proceeds were allocated to the financing and refinancing of green projects. This signals a growing interest from investors, including retail investors, in supporting the government's actions in the area of sustainability.

In June 2021, the government of Indonesia launched a three-tranche sukuk for a total of USD 3 billion. The issuance comprised a USD 1.25 billion five-year tranche maturing in June 2026; a USD 1 billion 10-year tranche maturing in June 2031; and a USD 750 million 30-year tranche due in June 2051, which is the first 30-year sukuk in the world. Despite a difficult international environment due to the COVID-19 crisis, investor demand was steady. The initial price guidance compressed by 40 basis points on the five-year tranche and by 45 basis points on both the 10-year and 30-year tranches. Furthermore, the final order size amounted to USD 10.3 billion, corresponding to an oversubscription rate of more than 3.43 times the target of USD 3 billion issuance.

Source: DDCAP Group (2021); Ministry of Finance of the Republic of Indonesia (2021); and CBI (2021).

Different kinds of social and sustainability bonds currently exist on the market for ESG-themed investments

Social and sustainability bonds are similar to green bonds. Social bonds finance projects that directly aim to address or mitigate a specific social issue, or seek to achieve positive social outcomes. Meanwhile, sustainability bonds refer to bonds that raise funds for undertakings that have green or social aspects. A related, but relatively new, debt instrument is the key performance indicator (KPI) bond. These bonds are target-based instruments that tend to incentivise the issuer to obtain higher ESG standards across the full gamut of its activities, as opposed to on a per-project basis. They give issuers considerable flexibility in their scope

to raise capital on ESG-linked grounds (Lamdouar and Wong, 2021). However, a firm that issues KPI bonds can be penalised with a coupon step-up if it fails to achieve its targets in a given time frame. Thus, as well as the prospect of reputational risk, the firm may also lose an enforceable monetary stake.

Different kinds of ESG thematic bonds have been issued by private and sovereign entities around the world, according to needs and feasibility. Table 3.6 presents a succinct comparison of these debt options.

Table 3.6. General characteristics of ESG bonds

	Project-based structures			Target-based structures
	Green bonds	Social bonds	Sustainability bonds	KPI-linked bonds
Short description	Funds dedicated to green projects Follow the ICMA GBPs framework	Funds dedicated to social projects Follow the ICMA SBPs framework	Funds dedicated to both green and social projects Follow the ICMA GBPs and SBPs frameworks	No requirements for the use-of-proceeds The issuer is committed to mean green target(s); coupon/return increases otherwise ICMA guidelines for this structure are recent
Subject to a framework	●	●	●	●
Project based	●	●	●	
Funds committed	●	●	●	
Issuer retains flexibility	●	●	●	●
Direct impact if KPI not met				●
Included in green indices	●			
Impact report	●	●	●	

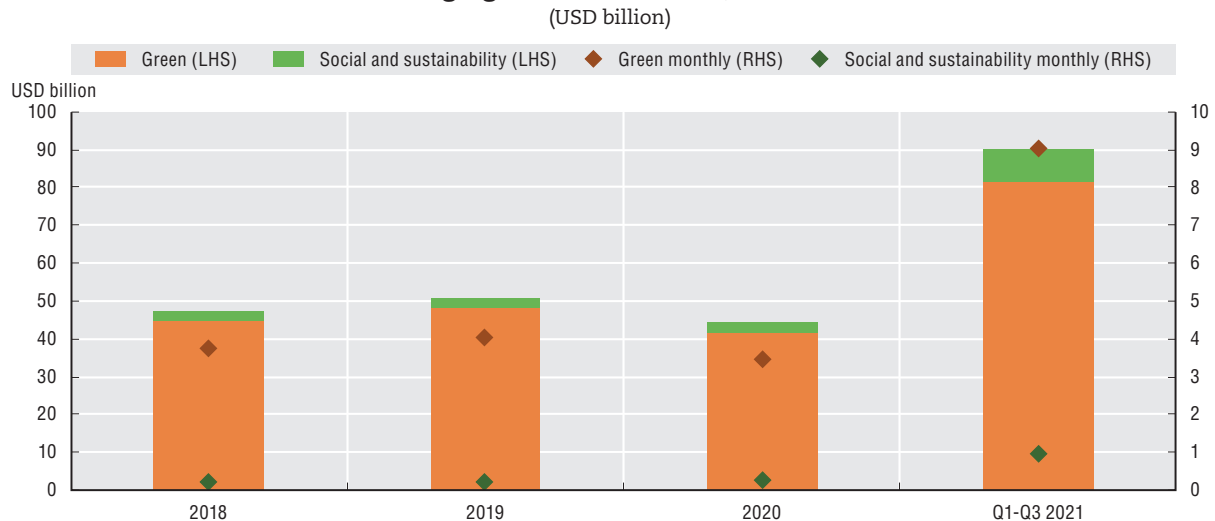
Notes: Data are as of 17 May 2021. KPI denotes key performance indicators; ICMA denotes International Capital Market Association; GBP denotes Green Bond Principles; SBP denotes Social Bond Principles.

Source: Lamdouar and Wong (2021), citing AllianceBernstein, <https://www.alliancebernstein.com/library/making-sense-of-esg-bond-structures.htm>.

As shown in Figure 3.8, the outstanding value of social and sustainability bonds is still marginal by comparison with green bonds. However, available data show a rising tide of interest in these bonds in Asia following the COVID-19 outbreak in early 2020. For instance, Mehta et al. (2021) note that, in the immediate aftermath of the initial outbreak of the pandemic, green bonds were “overshadowed by social and sustainability bonds, driven by an increasing need for financing inclusive and poverty alleviation projects, as well as to meet the approaching United Nations Sustainable Development Goals (SDGs).”


Even if pandemic bonds are excluded, the average monthly issuance of social and sustainability bonds in Emerging Asian economies for which data are available rose more than fivefold from 2019 through to the third quarter of 2021, reaching nearly USD 1 billion (Figure 3.10). The outstanding amounts accordingly increased roughly fourfold, from about USD 2.2 billion in 2019, to USD 8.9 billion by end of September 2021. Among the economies of Emerging Asia, China, Malaysia, and Singapore are leading the way.

Figure 3.10. Total and average monthly issuance of green, social, and sustainability bonds in selected Emerging Asian economies, 2018 to Q1-Q3 2021



Note: “Monthly” means monthly average. LHS means left hand scale. RHS means right hand scale. The countries included in the calculation are China, Indonesia, Malaysia, the Philippines, Singapore, Thailand and Viet Nam. The data exclude pandemic bonds.

Source: Authors’ calculation based on ADB (n.d.).

StatLink  <https://doi.org/10.1787/888934304818>

The emerging asset class of COVID-19 pandemic-related social bonds

Social and sustainability bonds come in different shapes and sizes, and pandemic-oriented bonds are now increasingly a type of social bond among others, whose proceeds can finance the fight against the COVID-19 pandemic and help mitigate its economic and social repercussions. It is now very much the case that goals relating to recovery from the COVID-19 pandemic can be the underlying objectives of social and sustainability bonds. In this regard, the ICMA broadened its framework for social bonds in June 2020 to include COVID-19 themed bonds. Under the framework, the illustrative examples for eligible projects encompass three main categories. Firstly, projects can be eligible if they increase capacity and efficiency in healthcare services and the equipment that these require. The second type of project that qualifies is loans to small and medium-sized enterprises (SMEs) that support employment in small businesses that have been affected by the pandemic. The third kind of qualifying projects are those that are specifically designed to prevent or alleviate unemployment stemming from the pandemic (ICMA, 2020).

One early example was the African Development Bank’s “Fight COVID-19” social bond, which it issued in March 2020 for USD 3 billion with a three-year maturity. It was the largest social bond in the world at the time of issuance. Its proceeds will be used to alleviate the impact of the pandemic on livelihoods and economies across Africa (AfDB, 2020).

Governments in Emerging Asia have also begun to explore the potential of social bonds to finance COVID-19-related public spending. In April 2020, the Government of Indonesia issued its first pandemic bond, raising more than USD 4.3 billion. The issue included a USD 1 billion fifty-year tranche, which constitutes the longest-dated dollar-denominated debt tranche ever issued in Asia. The Indonesian government indicated that part of the proceeds would be deployed to fund its COVID-19 relief and recovery efforts, while the bulk would cover the country’s widening fiscal deficit (ADB, 2020b).

Further broadening the scope: Education, gender, and health bonds

Other types of social or sustainability bonds include education bonds, health bonds and gender bonds (ADB, 2021a). As their names suggest, the proceeds of such bonds support education and health sector projects, or further the empowerment of women and gender equality. Water bonds, meanwhile, fund improvements to the quality and scope of water infrastructure.

In Asia, multilateral institutions such as the Asian Development Bank (ADB), are some of the most active issuers of these bonds. There are, however, promising signs that other stakeholders are willing to participate in this market. In the case of gender bonds, for example, a number of non-sovereign, non-multilateral issuances followed in the wake of the gender bond that the ADB issued in 2017 for 10 billion Japanese yen (JPY), and which was purchased in its entirety by Japan-based Dai-ichi Life Insurance Company. Elsewhere, Thailand-based Bank of Ayudhya issued a gender bond in 2019, which was bought by the International Finance Corporation (IFC) and the Deutsche Investitions und Entwicklungsgesellschaft (DEG) (Table 3.7). Furthermore, Indonesia-based Bank OCBC NISP, and Singapore-based Impact Investment Exchange (IIX), have also sold gender bonds.

Table 3.7. Prominent issuances of gender bonds in ASEAN

Issue/issuer	Purpose	Issuance date	Size	Key performance indicators and metrics
ADB gender bond	To finance projects promoting gender equality and women's empowerment, such as ADB's support of financial inclusion for women.	November 2017	JPY 10 billion (≈ USD 90 million)	Not specific. Part of ADB's wider operations and support of ADB's Strategy 2030 which includes accelerating progress in gender equality.
Bank of Ayudhya Krungsri women SME bond	To boost lending to women-led small and medium-sized enterprises in Thailand.	October 2019	USD 220 million	Loans outstanding to women-led small and medium-sized enterprises in Thailand.
Bank OCBC NISP Gender Program	To enable the Bank to increase lending to women entrepreneurs and women-owned small and medium-sized enterprises.	March 2020	IDR 275 trillion (≈ USD 200 million)	Not disclosed.
IIX Women's Livelihood Series	To create sustainable livelihoods for over 250 000 underserved women in the Asia-Pacific region.	December 2020 (third issue)	USD 150 million	Social return on investment, which tabulates the total net impact generated (monetised) per dollar of investment across the life of the bond. Number and percentage of female beneficiaries. Number of households positively impacted.

Source: Authors' adaptation from Gouett (2021).

In fact, the IIX's Women's Livelihood Bond (WLB) series, which was first issued in 2017, was the world's first impact investing instrument to be listed on a stock exchange (on the Singapore Exchange). It also had the distinction of being Asia's first multi-country listed gender bond. Following on from the success of this first issuance worth USD 8 million,

IIX issued the WLB2 in January 2020, for USD 12 million, and the WLB3 in December 2020, for USD 150 million. The proceeds of these bonds are earmarked to support women-focused enterprises in India, Indonesia, Cambodia, and the Philippines in their efforts to rebuild livelihoods that have been affected by the COVID-19 pandemic.

The challenges of social and sustainability bonds

As with green bonds, some Emerging Asian countries have already developed frameworks for social and sustainability bonds. However, the adoption of common standards like those espoused by the ICMA has been relatively slow, and the lack of a standardised set of metrics to measure their impact has led to concerns about “social washing”, or so-called “pink washing”. As is the case for green bonds, ADB (2021b) notes that many Asian sovereign and corporate issuers that would like to participate in the social bond market are currently discouraged in doing so by the lack of dedicated social bond frameworks. Understandably, it takes time, money, and skilled human resources to develop ICMA-compliant issuance procedures, and these constitute limited resources in many developing Asian economies. The due diligence requirements of ICMA-compliant securities, for instance, can be a significant hurdle for many potential issuers, thus throwing up an obstacle to participation in this market.

For the social and sustainability bond market to grow further, more issuance by sovereign and sub-sovereign entities is essential since these actors have a wider mandate to provide social services than do private institutions. Some emerging structural changes could also support long-term growth in the public sector’s issuance of social and sustainability bonds in Emerging Asia. These include aging populations, as well as increased concerns over food security and public health. As for green bonds, governments in Emerging Asia could consider getting support from multilateral organisations, such as the ADB or the World Bank, in order to streamline the issuance of social and sustainability bonds, and to lower the costs associated with the issuance.

As discussed above in the section about green bonds, social and sustainability bonds would benefit from a broadening of the investor base. However policy and strategy adjustments may be needed to attract a wide range of investors to this asset class. It is for one crucial to improve the transparency and reporting practices to mitigate apprehensions relating to “social washing”. Information campaigns can also be made more targeted. Social and sustainability bonds can be marketed as good diversification options for institutional investors. Similarly, the collective investment schemes that invest in social and sustainability bonds can be leveraged to encourage more retail investors to participate in this market.

If the conditions are appropriate, offshore debt issuance can be an option

When choosing the geographical market in which to base a bond, domestic debt issuances are typically preferred on the grounds that they mitigate risks with regard to exchange rates and liquidity. Currently, most emerging economies are still not able to tap the offshore market using their local currencies. This difficulty in accessing the offshore market using the home currency is commonly referred to as the “original sin” that affects this asset class (Eichengreen, Hausmann and Panizza, 2007).

Relatively low sovereign credit ratings, which partly determine the cost of borrowing, pose another issue in a number of Emerging Asian economies. Incidentally, the ratings of private sector firms are capped somewhat in offshore markets by the ratings of the sovereign, even if they are top-rated in the domestic market. As posited by Mohapatra, Nose and Ratha (2016), the “sovereign rating often acts as a ‘ceiling’ for the sub-sovereign ratings in most instances, although the ratings of the sub-sovereign entities have sometimes exceeded the sovereign rating”.

Nevertheless, the offshore bond market has potential to close funding gaps. This is notably a function of historic low interest rates in advanced economies, whose currencies are commonly used to denominate emerging-market foreign bonds. It is also due to the amount of liquidity that is available in the wake of aggressive monetary accommodation. Against this backdrop, there is scope for Emerging Asia’s policy makers to take advantage of the much bigger offshore investor base, which contains many investors who are keen to invest in ESG-linked instruments. In addition, ESG instruments can provide an additional dimension to the efforts to recycle the sizeable savings pool in Asia within the region.

In order to capitalise on this opportunity whilst also mitigating debt-servicing risks, Emerging Asia can bolster the capacity of the cross-country systems that are already in place. One important facility in this respect is the Multi-Currency Bond Issuance Framework (AMBIF), which the ASEAN+3 grouping (including China, Japan and Korea) put together in order to make the recycling of the region’s savings more efficient and inclusive, but without overlooking individual countries’ peculiarities (ADB, 2015). Its framework, whose implementation guidelines were first released in 2015, aims to “enable issuers in ASEAN+3 to issue bonds, notes, or sukuk (Islamic bonds) in the professional market or market segment of any participating economy in a comparable manner, using the same or similar practices and a standardised approach to disclosure” (ADB, 2020c).⁹ Recent published data show that there have been 12 issuances under the AMBIF, and that these are denominated in seven different local currencies.¹⁰

Together with other regional initiatives, such as the ADB’s Credit Guarantee and Investment Facility (CGIF), which dates from 2010, the AMBIF framework can be leveraged further by Emerging Asian economies in accessing the offshore market as they pursue their sustainable recovery agenda. The CGIF’s performance, in terms of its profitability and the guarantees that it has executed (CGIF, 2021), suggests substantial upsides to scaling up operations. Its coverage, which includes both sovereign and non-sovereign issuers, also makes it broadly inclusive. Thus far, 10 of the 12 aforementioned issuances under AMBIF are guaranteed by the CGIF facility.

Smaller Emerging Asian economies can also leverage strong bilateral relations in order to gain access to offshore markets, as exemplified by Lao PDR’s issuances denominated in Thai baht. The government of Lao PDR issued up to THB 46.7 billion worth of baht-denominated bonds in a variety of tenors through the Ministry of Finance from 2013 to 2018. Thailand’s relaxation of restrictions on unrated bonds, its cancellation of regulations governing the issuance of baht-denominated bonds by foreign entities, and the widespread use of the Thai baht in Lao PDR created an optimal environment for Lao PDR to issue the bonds in Thailand.

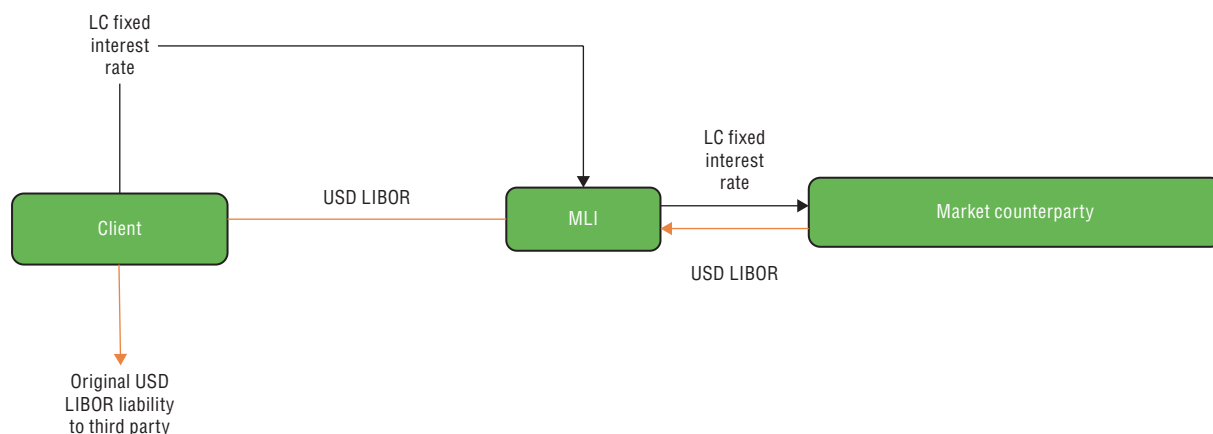
Multilateral lending institutions play a pivotal role in bringing innovative instruments into the mainstream

Multilateral institutions and development banks will continue to have a big role to play in helping emerging economies, both to raise funds, and to ensure the sustainability of their debt as they recover from the impact of the COVID-19 pandemic. Their assistance is particularly critical for low-income economies with very tight fiscal situations, and highly under-developed domestic capital markets.

Aside from direct commitments, there is also scope to scale up swaps for third-party liabilities in order to hedge risks related to interest and exchange rates. Products of this kind include interest rate swaps, cross-currency swaps, and local currency swaps, which transform a foreign currency liability into a local currency liability (ADB, 2020d; World Bank, 2021d).¹¹ Aside from risk management, meanwhile, multilateral institutions can also leverage their high credit ratings to reduce the cost of borrowing for their clients, both sovereign and private.

Figure 3.11 shows a basic schematic diagram of a local currency swap arrangement, whereby the foreign currency obligation (in this case in US dollars) can be transformed into a local currency obligation, with the multilateral lending institution acting as an intermediary.¹² Although it can be challenging to find counterparties to swap loans that are denominated in foreign currency (e.g. US dollar loans) for local-currency ones, there are indications that, with innovative solutions and the right mix of capital from investing institutions, it can work, and that “currency risk can be hedged even in frontier markets – at a reasonable price and with a decent return” (Giugale, 2021).

Figure 3.11. Schematic diagram of a local currency swap for third-party liability



Note: LC = local currency. LIBOR = London Interbank Offered Rate (The use of the LIBOR rate is only for illustration purposes, as the LIBOR is currently being phased out). MLI = multilateral lending institution. The diagram is a slightly modified version of Figure 3 in ADB (2020d). Source: ADB (2020d).

Multilateral institutions can also intermediate syndicated loans. Their role can be particularly important in securing large funding for private-sector financing in economies where domestic capital markets are still nascent (Box 3.12). On the credit supply side, they can provide market access to global banks and major global financial institutions. On the credit demand side, meanwhile, they can lower the cost of lending.

Generally, a perception of high risk raises the cost of borrowing and tends to limit long-term flows of capital to developing countries. In light of this, Gurara, Presbitero and Sarmiento (2018) contend, citing previous studies, that: “multilateral development banks (MDBs) can (i) help reduce the high risk perception by signalling the profitability of projects through allocation of their own money in projects and loan syndicates and taking a subordinate loan position and extending their de facto preferred creditor status; and (ii) leverage their informational and monitoring capacity advantages – without which private lenders would be reluctant to invest in projects that are considered to be too risky”. The authors also provide empirical evidence of MDBs’ greater willingness to fund high-risk projects that the private sector would not agree to finance, as well as of the role that they can play in reducing spreads and lengthening loan maturities.

Box 3.12. Emerging Asian governments could resort to syndicated loans for urgent financing needs

Syndicated loans can be defined as credits extended to a borrower by a group of lenders. Loan syndication typically occurs when a single borrower requires a large loan, usually above USD 1 million, which a single lender may be unable to provide. Overall, syndicated loans combine characteristics both of relationship loans and of public debt, whereby the lead bank may have some form of relationship with the borrower (Altunbas, Kara and Marques-Ibanez, 2009). Global syndicated lending activity totalled USD 3.5 trillion in 2020. With a total syndicated lending volume of USD 460.5 billion, Asia-Pacific accounted for approximately 13% of the total volume extended in 2020 (Refinitiv, 2020).

In addition to allowing borrowers to access larger loans, a major advantage of syndicated loans is that they require less time and effort on the part of the borrower. Since they are negotiated, syndicated loans also require fewer disclosures compared to bonds or bilateral loans. It is worth noting that the lead arranger is responsible not just for due diligence, but also for the allocation of the loan to other syndicate members, and for subsequent monitoring. As a result, the other financial institutions in the syndicate typically rely on the lead arranger’s reputation in making lending decisions (Ross, 2010), thus speeding up the overall lending process.

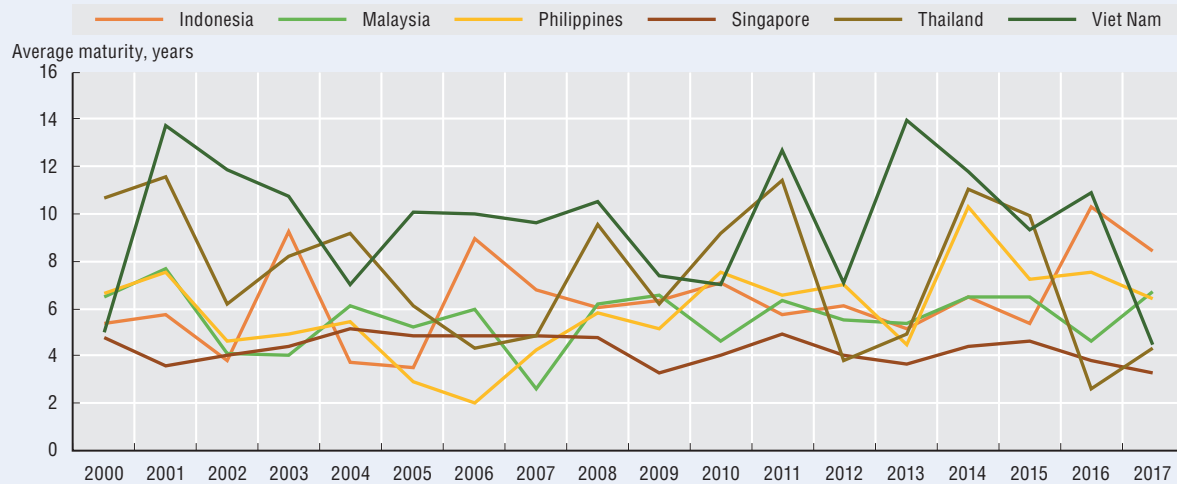
Another advantage of syndicated borrowing is the possibility for the borrower to diversify the loan terms. Since multiple lenders contribute to a syndicated loan, the loan can be structured to encompass different types of loans and terms. This renders syndicated lending more flexible for the borrower. In addition, the syndicate can be composed of both domestic and international banks. As Gopalakrishnan and Mohapatra (2019) have shown, a diversified syndicate structure is associated with lower loan spreads for riskier borrowers compared to loans made by non-diversified syndicates.

One of the shortcomings of syndicated loans, however, is that they have shorter tenures compared to bonds and bilateral loans. As shown in Figure 3.12, below, the average maturity of a syndicated loan in a group of selected ASEAN countries did not exceed 14 years between 2000 and 2017. In 2017, the average maturity of a syndicated loan ranged from 3.3 years in Singapore to 8.4 years in Indonesia. In the two most recent years for which such data are available, the average maturity tended to fall, in particular in the Philippines, Singapore and Viet Nam.

In addition, syndicated loans tend to be more expensive compared to other debt instruments. Hence, some governments have resorted to debt management operations in order to replace syndicated loans with other instruments that provide more favourable financing conditions. One way of doing this is to re-finance relatively expensive syndicated loans with long-dated debt instruments (IMF, 2021a).

Box 3.12. Emerging Asian governments could resort to syndicated loans for urgent financing needs (cont.)

Figure 3.12. Syndicated loan maturity in selected ASEAN economies, 2000-17
(Average maturity, years)



Note: The data capture the average maturity of syndicated loans granted during the respective year to both sovereign and non-sovereign borrowers.

Source: World Bank (n.d.), *Global Financial Development Database*, <https://databank.worldbank.org/reports.aspx?source=global-financial-development>.

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Insurance-linked securities can enhance resilience

It is impossible to rule out the recurrence of pandemics or of other similar catastrophes. Considering their potential impact, hedging the associated risks is, therefore, critically important. Insurance-linked securities (ILS), which emerged at the beginning of the 1990s, can offer insurance companies and governments some respite in challenging situations, by transferring risks to investors. In a typical ILS scheme, a reinsurance company transfers part of its risk exposure to a single-purpose vehicle (SPV). In exchange for agreeing to bear the risk, the SPV receives a premium paid by the cedant insurer/reinsurer, which is then invested in short-term, fixed-coupon bonds. The SPV then issues bonds with a maturity of less than three years, and pays a variable-rate coupon. If the underlying event, such as a natural disaster or a pandemic, does not occur, the SPV pays the coupon and returns the principal when the bond reaches maturity. On the other hand, if the event does occur, and if the pre-established trigger conditions are met, the SPV returns the principal to the re-insurer. Table 3.8 lists various ILS instruments that could be used to cope with pandemic-related risks.

Turning to further potential sources of funding, pandemic bonds are an ILS mechanism worthy of consideration in the coming years. They are similar to catastrophe bonds in structure, and are distinct from pandemic social bonds. A prominent example of pandemic bonds is the Pandemic Emergency Financing Facility (PEF) bond that raised USD 325 million when it was issued in 2017 (World Bank, 2017a). That issuance, which took place under the aegis of the World Bank's "capital at risk" programme, was supplemented

by USD 105 million in swaps, and about USD 190 million in donations (World Bank, 2017a; Jonas, 2019).

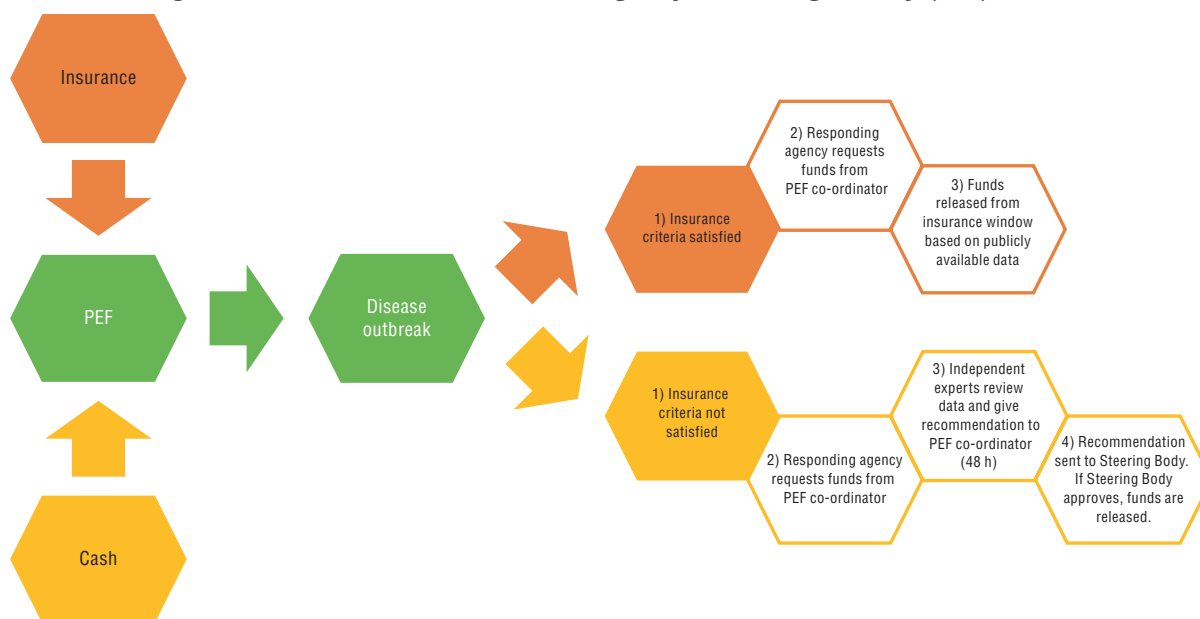
Table 3.8. Overview of ILS that could be used to cope with pandemic-related risks

Type of ILS	Description
Pandemic/COVID-19 bonds	Securities whose proceeds could be used to mitigate the economic and social repercussions of the COVID-19 pandemic.
Extreme mortality bonds	Short-term securities, whose pay-out is linked to a mortality index.
Pandemic futures and options	Exchange-traded futures, or options linked to widely followed COVID-19 metrics (e.g. case fatality rate).
Mortality swaps	Agreements to exchange one or more cash flows in the future based on the outcome of at least one (random) survivor or mortality index.
Pandemic risk pools, partly financed through the issuance of pandemic bonds	Mechanisms for the sharing of pandemic-related risks between public and private insurance companies and the government.

Source: Authors' elaboration.

The PEF tender marked the first attempt to transfer pandemic risk in low-income countries to the financial markets. It covers six viruses that were seen as being most likely to cause a pandemic. Financing for eligible countries is activated when an outbreak reaches predetermined levels of contagion. The parameters include the number of deaths, the rate of spread of the disease, and the degree of cross-border transmission (World Bank, 2017a). The PEF mechanism is succinctly described in Figure 3.13.

Figure 3.13. How the Pandemic Emergency Financing Facility (PEF) works



Source: Authors' elaboration, based on World Bank (2021f).

The COVID-19 pandemic has recently triggered the fund to pay out. And while the mechanism has not been without its share of criticisms, the PEF Fact Sheet divulges that “by 30 September 2020, the entire USD 195.84 million COVID-19 insurance pay-out had been transferred to the beneficiary countries, providing additional financial support to

their COVID-19 response, including essential and critical lifesaving medical equipment and personal protective equipment” (World Bank, 2021e).

Another relevant and related initiative is risk pooling. In this mechanism, different stakeholders contribute to a fund. The list of contributors typically includes insurance companies and, sometimes, government entities as well. Instruments like catastrophe bonds or pandemic bonds are issued in order to generate revenues. Coupon payments are then paid on a regular basis, as long as the underlying event does not occur.

One example is the Indian insurance regulator’s proposal in 2020 to create an Indian Pandemic Risk Pool (Evans, 2020). Pandemic bonds would back up this pool, and it would have a multiple-trigger mechanism, in order to respond both to epidemics and pandemics. It would cover immediate losses to income caused by business interruption resulting from a pandemic, and from the restrictions that may ensue in order to curb its spread in the first phase. Cover may not extend to losses sustained in a second phase, as the priority is to cover aspects related to business interruption, especially in the context of India’s informal labour sector (IRDAI, 2020).

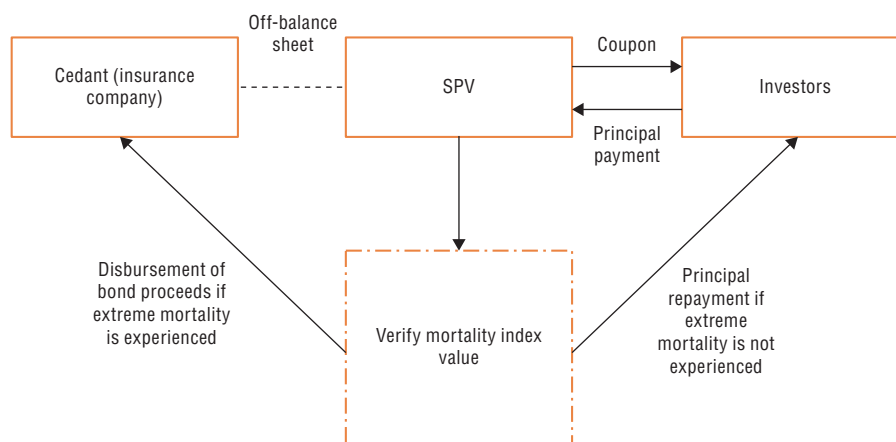
Another ILS option is the mortality swap, which is an agreement to exchange one or more cash flows in the future, based on the outcome of at least one index measuring survival rates or mortality, chosen at random. Mortality swaps bear considerable similarity to re-insurance contracts, as both often involve swaps of anticipated payments for actual payments (or claims), and both may be used for similar purposes. Mortality swaps are not insurance contracts in the legal sense of the term, and therefore are not affected by some of the distinctive legal features of insurance contracts. They can typically be arranged at a lower transaction cost than a bond issue, and can be cancelled more easily. They are also more flexible, and they can be tailor-made to suit diverse circumstances.

Mortality swaps are still relatively new financial instruments. The European Investment Bank (EIB) forged such an arrangement as early as 2004, in order to assist life insurance companies and pension funds in addressing the challenges of ageing populations (Blake et al., 2006b). Although the EIB was the issuer of the proposed bond, the ultimate recipient of the longevity risk embedded in the bond was a Bermuda-based re-insurance company. The EIB undertook a swap with BNP Paribas, with the EIB receiving floating-rate funding in pounds sterling (GBP). In turn, BNP Paribas took out re-insurance for the longevity risk, retaining the interest rate exposure but with the re-insurance company insuring the longevity risk. The total value of the issuance came to GBP 540 million, and it was primarily intended for purchase by pension funds in the United Kingdom. However, pension funds and life insurers were reluctant to subscribe to this bond for various reasons, and this was withdrawn in late 2005, without ever being issued (ECB, 2006).

A further variation on this theme is extreme mortality bonds, which hedge against an insurer or re-insurer becoming insolvent. It works on the premise that a jump in mortality rates would adversely impact the amount and timing of the death benefits that an insurer or re-insurer would have to pay out. Extreme mortality bonds are short-term tradeable securities, with a pay-out structure that is explicitly linked to a mortality index. The main focus of extreme mortality bonds is pandemic outbreaks. As such, extreme mortality bonds are designed to cover the risk of mortality or the specific risk of premature death. They have

similar characteristics to catastrophe bonds for natural disasters such as earthquakes or storms. Figure 3.14 illustrates the typical structure of an extreme mortality bond.

Figure 3.14. The typical structure of an extreme mortality bond



Note: "SPV" stands for Special Purpose Vehicle.

Source: Authors' elaboration, based on Blake et al. (2006a).

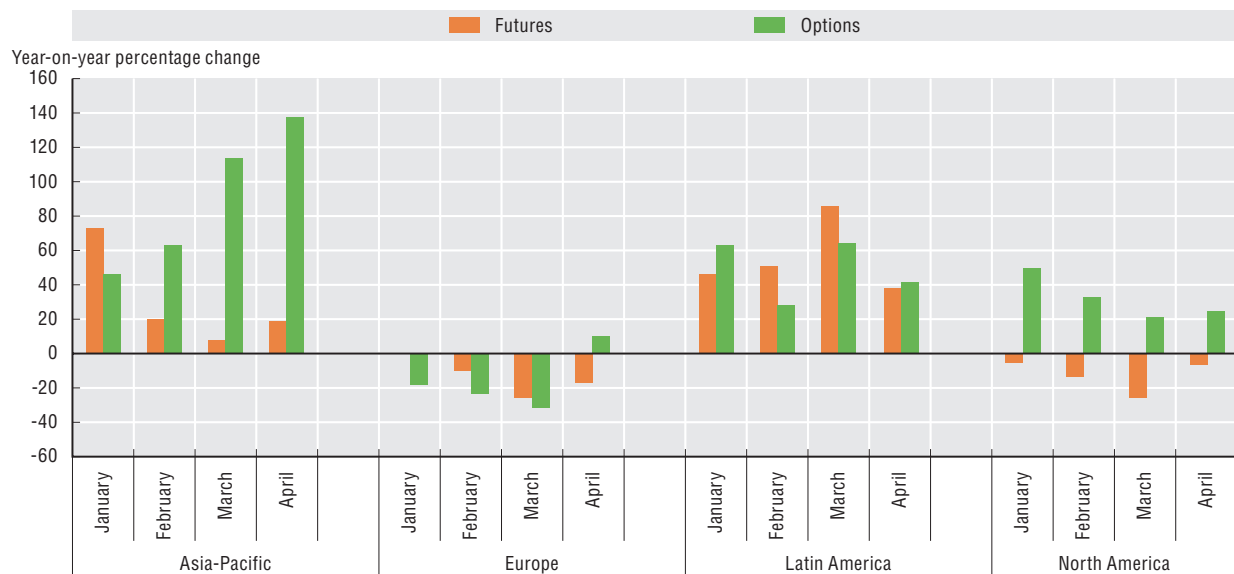
The first extreme mortality bond was issued by Swiss Re in 2003. Specifically, Swiss Re launched its first insurance-linked security relating to life insurance risk in December 2003, obtaining USD 400 million of coverage from institutional investors. The structure of the bond's risk coverage is based on a combined mortality index. This mortality index measures annual general population mortality in five countries (i.e. France, Italy, Switzerland, the United Kingdom and the United States). It does this by applying pre-determined weights to publicly reported mortality data from each country. The principal of the bonds was at risk if, during any single calendar year in the risk-coverage period, the combined mortality index exceeded 130% of its baseline level, which corresponded to data for 2002. In exchange for their risk-taking, investors received a quarterly coupon equal to the 3-month USD London Interbank Offered Rate (LIBOR), plus an additional 135 basis points. The maturity of the bond was three years (Klein, 2006).

Another option for hedging the losses that can emanate from financially costly pandemics presents itself in the form of pandemic futures and options. In a related field, and by way of background, the emergence of markets for weather-related derivatives (i.e. weather futures and options), is a remarkable development, because these instruments target risks that are not market risks, but which, on the contrary, are relatively uncorrelated with the fluctuations of the stock market. Pandemic derivatives could be envisaged along similar lines to exchange-traded weather derivatives, which are usually linked to widely followed measures such as temperature and rainfall. Bilateral deals traded over the counter could be tailor-made for specific pandemic-related risks. Nevertheless, it is important to note also that, while the use of such instruments by insurance companies increases the scope for risk spreading, it can also present potential new risks for financial stability.

Just as there are weather-related futures and options focusing on several cities in the United States, the United Kingdom, Canada, France, Germany, Japan and Australia (CME Group, n.d.), similar tailor-made products could be designed to cover pandemic risks in

Emerging Asian cities, taking advantage of the rising importance of derivatives trading in the region. According to the Futures Industry Association, Asia-Pacific accounted in 2019 for the largest volume of derivatives trading of any region in the world, with a combined share of 42% of global trading volumes (FIA, 2020). Furthermore, the volume of exchange-traded options in Asia-Pacific rose by more than 137% year-on-year in April 2021, after an increase of 114% in March (Figure 3.15).

Figure 3.15. Volume of exchange-traded derivatives by selected region, January-April 2021
(Year-on-year percentage change)



Source: Authors' compilation based on data from FIA (2021), *ETD Volume – March 2021*, <https://www.fia.org/resources/etd-volume-march-2021>.

StatLink  <https://doi.org/10.1787/888934304856>

Nevertheless, the development of derivatives markets necessitates considerable policy support. It also requires markets with sufficiently large pools of funds to cover the size of the eventual pay-outs when they are triggered. China and Singapore can provide some key lessons in terms of market development. China has five domestic derivatives exchanges, offering futures and options on agricultural products, energy, metals, chemicals, equities, and bonds. The trading volumes on these exchanges have been on an upward trajectory in recent years (Fix, 2021). Singapore, which is the largest derivatives trading centre in Emerging Asia, and one of the largest centres globally, is also a viable candidate to launch pandemic derivatives.¹³

There is scope for regional co-operation in hedging risks

Regional and international co-operation has a big role to play in enabling the region's markets to catch up with others in terms of their absorptive capacity. Multilateralism is a critical element for increasing the mobility of funds across borders within the region, particularly when it comes to institutional investors. There is also scope, through regional co-operation, to develop mechanisms to mitigate financial risk.

Sovereign catastrophe risk pools could provide governments with rapid post-disaster funds

Exploring potential options still further, sovereign catastrophe risk pools could provide a mechanism for Emerging Asian governments to enhance their financial preparedness against pandemic risks, by pooling risks into a single, more diversified, and less risky portfolio. Catastrophe risk pools also allow participating countries to partially retain risk through joint reserves or capital, and to transfer excess risk to the re-insurance and capital markets. Another advantageous feature of a risk pool is that profits that accrue to the pool during years with fewer disaster events can be retained within the pool, rather than being distributed to various stakeholders.

Four sovereign catastrophe risk pools exist currently, including one in Southeast Asia (Table 3.9). The four pools are the Caribbean Catastrophe Risk Insurance Facility (CCRIF), the African Risk Capacity (ARC), the Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI), and the Southeast Asia Disaster Risk Insurance Facility (SEADRIF).

The SEADRIF was established in December 2018 by Cambodia, Indonesia, Lao PDR, Myanmar, Singapore and Japan, and membership is open to all ASEAN members plus China, Japan and Korea. The SEADRIF is a regional platform through which participating countries can propose, assess and implement options for managing the financial impacts of natural disasters. The first initiative within the SEADRIF framework was the establishment of a regional catastrophe risk pool, especially for flood risks in Lao PDR and Myanmar. The SEADRIF is also planning to provide financial solutions to Cambodia, and also to middle-income ASEAN countries such as Indonesia (World Bank, 2019).

Table 3.9. Selected characteristics of existing regional sovereign catastrophe risk pools

Scheme	ARC	CCRIF (Caribbean)	CCRIF (Central America)	PCRAFI	SEADRIF
Form of insurance	Modelled loss parametric.	Modelled loss parametric.	Modelled loss parametric.	Modelled loss parametric.	Modelled loss parametric.
Number of countries	32 countries have signed the ARC Treaty; eight others have participated.	20 countries are eligible for coverage, of which 16 have participated.	Of the 6 countries that are eligible, one has purchased a policy.	15 are countries are eligible, of which 6 have participated.	Two countries are eligible for coverage.
Perils covered	Drought, tropical cyclone, flood.	Earthquake, tropical cyclone, extreme rainfall.	Earthquake, tropical cyclone, extreme rainfall.	Earthquake, tropical cyclone.	Flood.
Date of first policies	2014	2007	2015	2013	2018
Cumulative pay-outs since inception	USD 34 million	USD 67.3 million	USD 0.7 million	USD 3.2 million	Not available
Average aggregate coverage	USD 150 million	USD 622 million	USD 28 million	USD 45 million	Not available
Source of premiums	National budgets, grants.	IDA credits, CDB credits, grants.	IDA credits.	Grants, national budgets, IDA credits.	Grants, national budgets.
Pay-out process	Pay-out calculated within 10 days of the end of the risk period for drought, and 7 days for tropical cyclones and floods. Self-certification of loss required. Certified contingency plan required.	Initial estimate in 3-5 days, pay-out made after 14 days. Self-certification of loss required.	Initial estimate in 3-5 days, pay-out made after 14 days. Self-certification of loss required.	Pay-out made within 10 business days.	Pay-out made within up to 30 days of the occurrence of an insured event.

Note: "ARC" stands for African Risk Capacity; "CCRIF" stands for Caribbean Catastrophe Risk Insurance Facility; "PCRAFI" stands for Pacific Catastrophe Risk Assessment and Financing Initiative; and "SEADRIF" stands for Southeast Asia Disaster Risk Insurance Facility. "IDA" stands for International Development Association. "CDB" stands for Caribbean Development Bank.

Source: Authors' elaboration based on World Bank (2017b), SEADRIF (2020) and World Bank (2020b).

Another example of financial co-operation among countries in Emerging Asia is the COVID-19 ASEAN Response Fund, which is different from the catastrophe risk pools outlined above. It was established in 2020 in order to address both the short-term and long-term needs of ASEAN member countries arising from the pandemic. The Fund will serve as a pool of financial resources to provide support to ASEAN member countries in the detection, management and prevention of COVID-19 transmission. It will be made equally accessible to all countries for, among other things, the procurement of medical supplies and equipment. The Fund will also be available to support co-operation in research and development relating to COVID-19. An initial contribution to the Fund, of 10%, came from the ASEAN Development Fund, and it then became open to voluntary contributions from ASEAN Member States and external partners (ASEAN, n.d.).

A regional pandemic risk pool for Emerging Asia should accommodate heterogeneous risk profiles and economies

Disaster insurance schemes exist in one form or another in several developing economies in Asia. The vast majority of schemes (71%) deliver micro-insurance, while sovereign risk schemes represent approximately 14%. India, the Philippines and China are the top three countries in terms of number of operational disaster insurance schemes, and they are also among the most mature markets for disaster risk insurance across Asia (Surminski, Panda and Lambert, 2019).

In Emerging Asia, governments now have an opportunity to build on the extensive work to manage natural disaster risks that they have already done at the national level, and also on the recent experience that they have garnered through the SEADRIF initiative. In the light of this work and experience, and of the challenges of the COVID-19 pandemic, it is possible now to envisage a regional catastrophe risk pool to mitigate the impact of pandemic outbreaks. A risk pool of this kind could improve Emerging Asian countries' resilience to pandemics, provided it is structured to accommodate the particular conditions of the region. Along these lines, it is important to bear in mind that differences in risk and economic profiles may constitute hurdles for policy makers seeking to establish a sovereign pandemic risk pool at the regional level.

In order for a regional pandemic risk pool to deliver on its promise, it will be necessary to take account of several key factors and parameters. For example, it will be important to recognise that, as the World Bank has pointed out, a regional approach for a joint disaster insurance fund would best suit smaller economies with uncorrelated but similar risk exposures (World Bank, 2017b).

A model could be envisaged whereby countries enter into an insurance contract with the over-arching facility, and pay a premium to gain access to rapid liquidity in the aftermath of a pandemic in the form of bridge financing. In addition, the risk-transfer platform could function as a clearing house for transferring pandemic risk in Emerging Asia to the international capital markets. This approach would allow large economies in the region to tap the market directly, and smaller economies to access markets as a group (World Bank, 2017b). Furthermore, and in order to avoid cross-subsidisation of premiums among countries, the premiums that each participating country would pay should have a basis in the level of risk that it brings to the regional risk pool.

The participation of sub-national entities (i.e. municipalities) in this platform could also be considered (World Bank, 2017b). For instance, a risk pool to cover municipalities against the risk of typhoons and earthquakes already operates in the Philippines (Box 3.13). Cities from multiple countries in Emerging Asia could participate in a single regional risk pool.

Box 3.13. Characteristics of the Philippine City Disaster Insurance Pool (PCDIP)

Philippine cities face a particularly high risk of natural disasters. As a result of this, a group of cities in the country established the PCDIP in order to provide rapid access to financing in the early stages of disaster recovery. Ten cities participated in the design of the insurance pool, and their selection to take part was based on an array of factors. These included their exposure to disaster risk, their demographic and economic size, their geographic location, the availability of data, and also their governance of disaster-risk management. An additional element that was considered was the relative scale of government and public facilities, in order to gauge the likely extent of post-disaster expenditure. To support the optimal design of the PCDIP, the cities took part in a number of activities, including the collection of data on their exposure to disaster risk, an assessment of their needs, and capacity building exercises.

The PCDIP aims to provide rapid post-disaster financing for early recovery in a cost-efficient manner. The scheme's framers decided that a parametric insurance pool would be the best solution. In this kind of pool, pay-outs are determined based on the physical features of a catastrophic event, such as wind speed, or earthquake intensity, rather than on the actual losses suffered by the policyholder. The PCDIP offered parametric insurance coverage against typhoons and earthquakes in its first phase, with flood coverage added at a later stage. Pay-outs will be made within 15 business days of the occurrence of an event.

Participating cities can purchase insurance cover based on the types of hazard they want to insure against, the frequency and scale of pay-outs that they would like to receive, and the funding that is available for premium payments. The premiums paid by each city are based on the level of risk that it brings to the pool. Still, the PCDIP has been structured to make sure that city governments can afford premiums. One way of achieving this has been to offer them flexibility in choosing the features of their coverage. Another aspect of the scheme's structure is that the pool is able to honour pay-outs in a timely manner. The pool's design sets it up to be financially sustainable over the long term. Pay-outs are funded by a combination of capital from the pool, and re-insurance protection purchased from domestic and international markets. The government provided the initial capital for the pool, which will be supplemented by retained profits in years of low disaster-related losses.

Source: ADB (2018a).

Conclusion

The COVID-19 pandemic is proving to be extremely costly, both economically and socially. It continues to test the limits of regulatory policy toolkits all around the world. Its protracted nature is depleting the resources of public and private sectors alike, which in turn curtails governments' room for policy manoeuvre, and makes policy prioritisation more complicated. The substantial drag that it creates ultimately calls into question the fiscal stability of many countries, especially emerging economies.

Against a difficult backdrop, in which a range of other socio-economic risks compound the impact of the COVID-19 pandemic, bringing sustainable financing solutions into the mainstream, and scaling them up, is a crucial opportunity for Emerging Asian economies as they seek to ride out the storm, and to recover in a more equitable and inclusive manner. In the spirit of setting out a comprehensive array of policy options, this chapter has highlighted the importance of creating a conducive setting for ESG-themed bonds, in order to bring the capital-raising activities of public and private entities more into line with key social and environmental objectives that are becoming ever more urgent around the world. Furthermore, the chapter also addressed other issues, such as the constructive role that multilateral lending institutions can play in supporting innovative financing tools.

With the pandemic hitting economies hard, multilateral institutions have been pivotal in averting serious financial difficulties in many countries. The G20's Debt Service Suspension Initiative, for example, has provided welcome respite for many highly indebted countries. While financial tools such as debt buybacks and derivatives are also available to lessen the debt burden, they may not be viable to some countries.

Looking to the future, strengthening ex-ante measures has a vital role to play in enhancing countries' economic resilience to future events of a similar nature to the COVID-19 pandemic. Considering the complexities of some of the hedging and reinsurance products, putting them in place will require a concerted effort from large stakeholders, as well as access to capital markets deep enough to cover the sizeable pay-outs that an adverse event may trigger. As this chapter has also argued, strengthening regional co-operation in risk pooling is increasingly important.

Notes

1. According to Vandenberg (2021), "in Singapore, a debtor normally has 21 days to pay a debt, but this was extended to 6 months under a COVID-19 economic stimulus law", while "the threshold above which a creditor could move against a delinquent debtor was raised from 15 000 Singapore dollars (SGD) to SGD 60 000". Similarly, in India, "the threshold for initiating insolvency was raised from 100 000 Indian rupees (INR) to INR 10 million, mostly to help MSMEs". This was implemented at the start of the pandemic but could become permanent. The Solvency and Bankruptcy Code was notably suspended for a year from March 2020.
2. The World Bank (2021b) also underscores the role that moratoria and temporary relief measures for borrowers have played in Asia in minimising the effects of the pandemic. Accordingly, banking sectors' portfolios are being restructured to varying degrees across individual banking institutions and economic sectors. The World Bank report estimates that, in China, restructured loans accounted for 4% of total loans by the end of 2020, and constituted 17% of loans to MSMEs. In Indonesia, more than 31% of loans to large corporations have been restructured. Meanwhile, in Malaysia, 11% of household loans, and 17% of business loans, have been placed under repayment assistance, including 52.8% of loans in the hotel and restaurants sector.
3. According to Starnes et al. (2021), with COVID-19 reducing the scale of transactions, emerging market banks face increased correspondent banking relationship challenges as earnings from low-yield trade finance services get squeezed. In their survey, these authors show that 39% of the global respondents (59% in South Asia and 20% in East Asia and the Pacific) indicated some form of correspondent banking relationship stress. The underlying factors cited in the report, among others, include fewer lines of credit, increased pricing or cost, line-limit restrictions, and increased compliance requirements.
4. The Asian Development Bank's COVID-19 Policy Database provides a detailed, country-by-country breakdown of actions in Emerging Asia.

5. The Bangko Sentral ng Pilipinas adopted the interest rate corridor in June 2016, thus resulting in a break in the time series of the policy rate. If extended backwards by roughly adjusting for the series breaks, the current rate will be the lowest since the data were compiled and reported in the mid-1980s.
6. For debt restructuring to be NPV-neutral, the “NPV of the new debt service cashflows after the moratorium will be equal to the NPV of the suspended debt service cashflows” (Hernández, Egesa, and Pérez, 2020). Concessional debt is defined by the World Bank as loans with a grant element of 25% or more (World Bank, n.d. b).
7. In many cases, relatively smaller borrowers, as well as smaller or retail investors, are constrained from participating in traditional formal capital market channels. Some institutional investors, including public pension institutions, also face charter-related limitations that affect their ability to diversify their investment portfolio (see, for instance, OECD 2021f).
8. The members of the G20 are: Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, the United Kingdom, the United States, and the European Union.
9. The ASEAN+3 is composed of the ASEAN economies, plus China, Japan, and Korea. The country implementation guidelines are published on the website of AsianBondsOnline, <https://asianbondsonline.adb.org/abmf/ambif.html>.
10. For the data, please refer to the ASEAN+3 Multi-Currency Bond Issuance Framework Bond Issuance page at AsianBondsOnline, <https://asianbondsonline.adb.org/ambif.php#bond-issuance> (accessed November 2021).
11. These examples are not exhaustive.
12. For reference, ADB (2020c) also presents schematic diagrams for interest rate swaps and cross currency swaps.
13. According to the Bank for International Settlements’ *Triennial Central Bank Survey of Foreign Exchange and Over-the-counter (OTC) Derivatives Markets*, Singapore ranked seventh globally for interest rate derivatives in 2019 in terms of turnover, with a daily average turnover of USD 116 billion (BIS, 2019).

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