

Global and Regional Market Developments

Bond yields rose and financial conditions deteriorated in emerging East Asia on accelerating monetary tightening.

Government bond yields rose across emerging East Asia during the review period from 31 August to 4 November, largely due to higher bond yields in advanced economies and continued monetary tightening globally. To address financial and price stability concerns, almost all major regional central banks hiked interest rates during the review period, which, in combination with a bleak economic outlook, weighed on domestic financial conditions in the region. During the review period, emerging East Asia's major currencies depreciated against the United States (US) dollar by a gross-domestic-product (GDP)-weighted average of 4.2%, equity markets retreated by a market-weighted average of 7.5%, and risk premiums widened by a GDP-weighted average of 28 basis points (bps) (**Table A**).¹

Government bond yields in the US and major European markets surged between 31 August and 4 November. The 2-year government bond yield in the US and Germany rose by 117 bps and 93 bps, respectively, following policy rate hikes by their respective central banks (**Table B**). The 10-year government bond yield rose 97 bps and 75 bps in the US and Germany, respectively, on higher policy rates and persistent inflation. In the United Kingdom, 10-year bond yields surged by 74 bps following the 23 September announcement of a series of tax cuts, which led to market panic over concern that government indebtedness would sharply increase. This was further exacerbated when bond price declines triggered margin calls among pension funds, forcing additional bond sales. The Bank of England was forced to initiate a temporary bond-buying program on 28 September. The Bank of England later raised by 75 bps its policy rate on 3 November.

Table A: Changes in Financial Conditions in Major Advanced Economies and Select Emerging East Asian Markets

	2-Year Government Bond (bps)	10-Year Government Bond (bps)	5-Year Credit Default Swap Spread (bps)	Equity Index (%)	FX Rate (%)
Major Advanced Economies					
United States	117	97	-	(4.7)	-
United Kingdom	5	74	5	0.7	(2.1)
Japan	4	3	13	(2.5)	(5.2)
Germany	93	75	8	4.9	(1.0)
Select Emerging East Asian Markets					
China, People's Rep. of	2	6	28	(4.1)	(4.1)
Hong Kong, China	140	100	-	(19.0)	(0.005)
Indonesia	123	34	14	(1.9)	(5.7)
Korea, Rep. of	48	48	41	(5.0)	(5.7)
Malaysia	31	40	20	(4.9)	(5.7)
Philippines	132	136	17	(6.0)	(4.1)
Singapore	38	51	-	(2.8)	(0.7)
Thailand	20	67	25	(0.8)	(2.9)
Viet Nam	172	139	18	(22.1)	(5.7)

() = negative, - = not available, bps = basis points, FX = foreign exchange.

Notes:

1. Data reflect changes between 31 August 2022 and 4 November 2022.

2. A positive (negative) value for the FX rate indicates the appreciation (depreciation) of the local currency against the United States dollar.

Source: *AsianBondsOnline* computations based on Bloomberg LP data.

¹ Emerging East Asia is defined to include member states of the Association of Southeast Asian Nations (ASEAN) plus the People's Republic of China; Hong Kong, China; and the Republic of Korea.

Table B: Changes in Monetary Stances in Major Advanced Economies and Select Emerging East Asian Markets

Economy	Policy Rate	Rate Change (%)												Policy Rate	Change in Policy Rates (basis points)	
	5-Nov-2021 (%)	Nov-2021	Dec-2021	Jan-2022	Feb-2022	Mar-2022	Apr-2022	May-2022	Jun-2022	Jul-2022	Aug-2022	Sep-2022	Oct-2022	Nov-2022		4-Nov-2022 (%)
United States	0.25				↑0.25			↑0.50	↑0.75	↑0.75		↑0.75		↑0.75	4.00	↑ 375
Euro Area	(0.50)									↑0.50		↑0.75		↑0.75	1.50	↑ 200
United Kingdom	0.10		↑0.15		↑0.25	↑0.25		↑0.25	↑0.25		↑0.50	↑0.50		↑0.75	3.00	↑ 290
Japan	(0.10)														(0.10)	
China, People's Rep. of	2.95			↓0.10								↓0.10			2.75	↓ 20
Indonesia	3.50										↑0.25	↑0.50	↑0.50		4.75	↑ 125
Korea, Rep. of	0.75	↑0.25		↑0.25			↑0.25	↑0.25		↑0.50	↑0.25		↑0.50		3.00	↑ 225
Malaysia	1.75							↑0.25		↑0.25		↑0.25		↑0.25	2.75	↑ 100
Philippines	2.00							↑0.25	↑0.25	↑0.75	↑0.50	↑0.50			4.25	↑ 225
Singapore	-		↑				↑			↑				↑	-	-
Thailand	0.50										↑0.25	↑0.25			1.00	↑ 50
Viet Nam	4.00											↑1.00	↑1.00		6.00	↑ 200

(-) = negative.

Notes:

1. Data coverage is from 5 November 2021 to 4 November 2022.
2. For the People's Republic of China, data used in the chart are for the 1-year medium-term lending facility rate. While the 1-year benchmark lending rate is the official policy rate of the People's Bank of China, market players use the 1-year medium-term lending facility rate as a guide for the monetary policy direction of the People's Bank of China.
3. The up (down) arrow for Singapore signifies monetary policy tightening (loosening) by its central bank. The Monetary Authority of Singapore utilizes the Singapore dollar nominal effective exchange rate (S\$NEER) to guide its monetary policy.

Sources: Various central bank websites.

In the US, monetary policy continued to tighten. At the September Federal Open Market Committee (FOMC) meeting, the Federal Reserve raised the federal funds target rate by 75 bps for the third consecutive time and signaled it would continue reducing its bond holdings and pursue additional rate hikes. The Federal Reserve raised market expectations for more aggressive rate hikes during the Jackson Hole meeting on 25 August, implying that it was willing to allow some weakness in the economy to tame inflation. At the September FOMC meeting, the Federal Reserve updated its forecast for the federal funds rate for 2022 and 2023 to 4.4% and 4.6%, respectively, from June's forecasts of 3.4% and 3.8%. The market interpreted this as continued aggressive rate hikes in coming FOMC meetings. During its 2-3 November meeting, the Federal Reserve maintained its aggressive stance and raised the federal funds target rate range by 75 bps as expected. Furthermore, the Federal Reserve implied that interest rates may rise higher than previously expected, albeit at a moderating pace. As a result, the market expected a 61.5% chance of a 50 bps rate hike and a 38.5% probability of a 75 bps hike at the December FOMC meeting, as indicated by Fed Watch as of 4 November.

US inflation remained elevated in July–September but showed signs of possibly having peaked. Inflation recorded moderating readings of 8.5% year-on-year

(y-o-y) (July) and 8.3% y-o-y (August), following June's record-high reading of 9.1% y-o-y. Inflation fell further in September and October to 8.2% y-o-y and 7.7% y-o-y, respectively. At the September FOMC meeting, the Federal Reserve slightly raised its full-year personal consumption expenditures inflation forecasts for 2022 and 2023 to 5.4% and 2.8%, respectively, from its June forecasts of 5.2% and 2.6%.

The US labor market remained robust but also showed some weakening signs. October nonfarm payrolls added 261,000 new jobs, lower than September's 315,000 and August's 292,000. The unemployment rate remained low but inched up slightly to 3.7% in October, from 3.5% in September, and was at par with the August reading. Amid more global headwinds, in September the Federal Reserve significantly revised downward its GDP growth forecasts for 2022 and 2023 to 0.2% and 1.2%, respectively, from June's forecasts of 1.7% for both years. Likewise, the forecasts for the unemployment rate for 2022 and 2023 were revised up to 3.8% and 4.4% from 3.7% and 3.9%, respectively.

In the euro area, the European Central Bank (ECB) continued to use monetary tightening in its efforts to tame inflation. Despite the ECB's aggressive monetary policy tightening, as evidenced by two consecutive rate

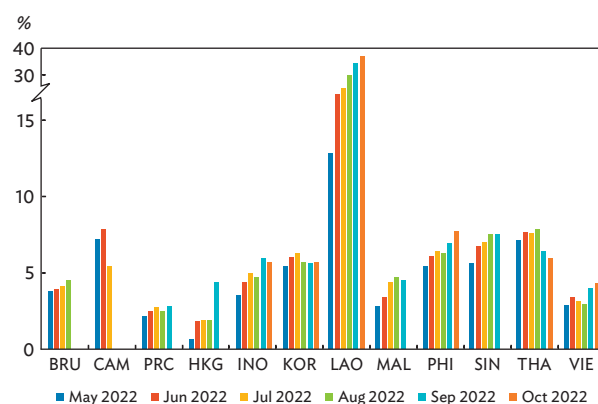
hikes of 75 bps each announced on 8 September and 27 October, inflation in the euro area rose to a record high of 10.6% y-o-y in October from 9.9% y-o-y in September and 9.1% y-o-y in August, largely driven by high energy costs. The ECB expects to continue raising interest rates as inflationary pressure is projected to persist for an extended period on mounting energy and food prices, demand pressure from the reopening of the economy, and continued supply chain bottlenecks. In September, the ECB revised upward its inflation projections for 2022 and 2023 to 8.1% and 5.5%, respectively, from its June projections of 6.8% and 3.5%. To support market liquidity, the ECB also announced it would continue reinvesting in full the principal payments for maturing securities under its asset purchase and pandemic emergency purchase programs until at least the end of 2024. Similar to the US, the ECB expects a substantial slowdown in the euro area economy in the second half of 2022, owing to mounting headwinds including soaring energy prices, persistent supply bottlenecks, and geopolitical risks, particularly the Russian invasion of Ukraine. Although the euro area's GDP growth forecast for 2022 was revised up slightly to 3.1% in September (from June's 2.8%), forecasted growth for 2023 was significantly revised downward to 0.9% from 2.1%. In Q3 2022, the euro area reported a GDP growth of 2.1% y-o-y, down from 4.3% y-o-y in the previous quarter.

Contrary to monetary tightening in major advanced economies, Japan maintained an accommodative monetary policy stance amid moderate inflation and weak economic growth. Japan's economy contracted an annualized 1.2% in the third quarter (Q3) of 2022, a reversal from an annualized growth of 4.6% in the second quarter (Q2). Compared with other advanced economies, Japan's inflation rose modestly to 2.6% y-o-y in July, 3.0% y-o-y in both August and September, and 3.7% y-o-y in October, but this was still above the Bank of Japan's 2.0% target. Nevertheless, the Bank of Japan maintained its short-term policy rate target at -0.1%, its 10-year Japan Government Bond yield target at zero, and left unchanged the target amounts of its asset purchases at its 21–22 September and 27–28 October monetary policy meetings. Its accommodative monetary policy relative to the rest of the world's major economies has weighed on the Japanese yen, which depreciated more than 20% against the US dollar from the beginning of 2022 to 4 November.

Bond yields climbed in emerging East Asia between 31 August and 4 November, driven by higher bond yields in major advanced markets as well as higher interest rates due to domestic monetary tightening. In September and October, central banks in major member economies of the Association of Southeast Asian Nations, as well as the Bank of Korea, raised policy rates to quell elevated inflation and safeguard financial stability amid aggressive monetary tightening by the Federal Reserve (Table B). Despite monetary tightening in the region, inflationary pressure persisted in most emerging East Asian markets on rising food and energy prices, and, to a lesser extent, pending supply chain disruptions (Figure A). The dimming economic outlook in the region and tightening financial conditions weighed on investment sentiment across the region (Box 1).

Among regional bond markets, Viet Nam and the Philippines recorded the sharpest rise overall in government bond yields. Viet Nam's 2-year and 10-year bond yields rose 172 bps and 139 bps, respectively, during the review period. This was largely driven by the State Bank of Vietnam's two consecutive 100 bps hike of the refinancing rate on 23 September and 25 October (Table B). Year-to-date consumer price inflation in Viet Nam recorded 3.6% in August and further climbed

Figure A: Inflation in Select Emerging East Asian Markets



BRU = Brunei Darussalam; CAM = Cambodia; PRC = China, People's Rep. of; HKG = Hong Kong, China; INO = Indonesia; KOR = Korea, Rep. of; LAO = Lao People's Democratic Republic; MAL = Malaysia; PHI = Philippines; SIN = Singapore; THA = Thailand; VIE = Viet Nam.
 Note: Data for the PRC; Hong Kong, China; Malaysia; and Singapore up to September 2022; Brunei Darussalam up to August 2022; and Cambodia up to July 2022.
 Sources: Various local sources.

Box 1: Economic Outlook in Developing Asia

Relaxed coronavirus disease (COVID-19) restrictions are lifting economic activity in many economies, but headwinds have also strengthened.^a Elevated commodity prices due to the Russian invasion of Ukraine, aggressive monetary tightening in advanced economies, and recurrent COVID-19 lockdowns in the People's Republic of China are dimming economic prospects. Signs of a global slowdown are already evident in weaker export orders and worsening financial conditions. With these developments, developing Asia's forecasted growth in 2022 was revised down to 4.3% in the most recent *Asian Development Outlook 2022 Update* from 5.2% in April. The growth forecast for 2023 has also been revised down to 4.9% from 5.3% in April (**Table B1**).

In East Asia, the People's Republic of China's economy grew 2.5% in the first half (H1) of 2022, following 8.1% growth in 2021, as the services sector struggled due to COVID-19 lockdowns. Growth in 2022 also slowed in the Republic of Korea and Taipei, China in H1 2022 to 3.0% and 3.4%, respectively, from 4.2% and 8.5% in H1 2021, with net exports making a relatively smaller contribution to growth in both economies due to softer global demand (**Figure B1**). A decline in export orders suggests that this trend will continue and points to tepid growth for these and other export-driven economies in 2022 and 2023. Overall, East Asia

is expected to grow 3.2% in 2022, compared with the 4.7% *Asian Development Outlook 2022* forecast made in April. The subregion's growth forecast for 2023 was also lowered from 4.5% to 4.2%.

In contrast, the reopening of markets and borders in Southeast Asia is strengthening consumption and boosting growth. In Malaysia, private consumption grew 11.5% in H1 2022 on the back of spending for services and government assistance that bolstered incomes. In the Philippines, household consumption was also the main driver, rising 9.3% as COVID-19 restrictions were eased. With this rebound in spending, Malaysia and the Philippines posted some of the strongest economic growth in the region in H1 2022 at 6.9% and 7.8%, respectively. This drove the 2022 forecast for the subregion up to 5.1% from a 4.9% forecast made in April. Nevertheless, the glum global outlook is weighing on Southeast Asian's 2023 growth prospects, prompting a downward revision in the forecast from 5.2% to 5.0%.

High global food and energy prices are driving inflation higher, though there is considerable variation across the region. In the Caucasus and Central Asia, inflation appears to be accelerating, reaching 14.3% year-on-year (y-o-y) in August, while South Asia saw inflation of 10.9% y-o-y in August,

Table B1: Gross Domestic Product Growth and Inflation Forecasts (% per year)

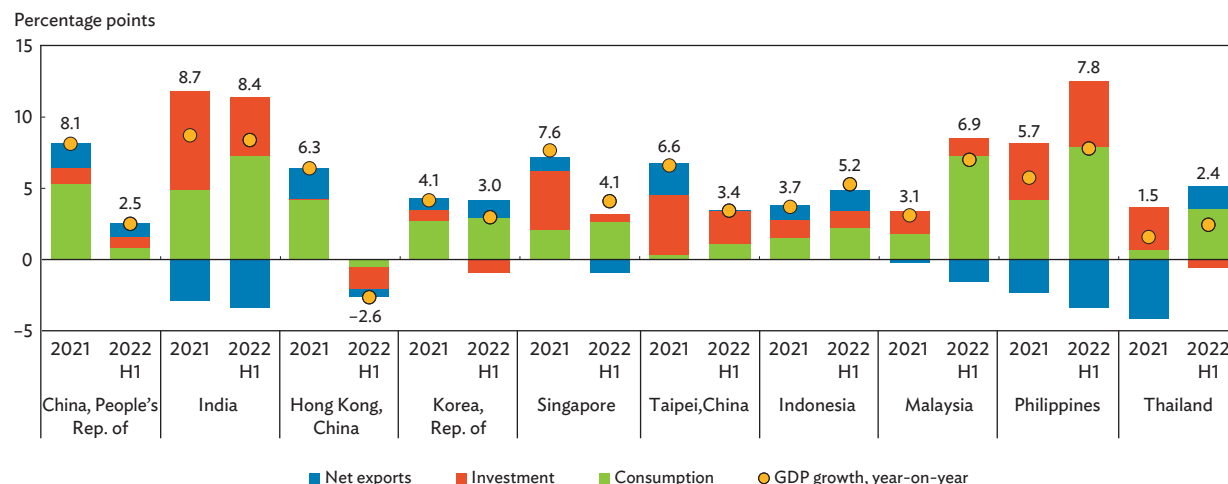
	GDP Growth				Inflation			
	2022		2023		2022		2023	
	ADO 2022	Update	ADO 2022	Update	ADO 2022	Update	ADO 2022	Update
Developing Asia	5.2	4.3	5.3	4.9	3.7	4.5	3.1	4.0
Developing Asia excluding the PRC	5.5	5.3	5.8	5.3	5.1	6.6	4.2	5.5
East Asia	4.7	3.2	4.5	4.2	2.4	2.5	2.0	2.5
Hong Kong, China	2.0	0.2	3.7	3.7	2.3	2.0	2.0	2.0
People's Republic of China	5.0	3.3	4.8	4.5	2.3	2.3	2.0	2.5
Republic of Korea	3.0	2.6	2.6	2.3	3.2	4.5	2.0	3.0
Taipei, China	3.8	3.4	3.0	3.0	1.9	2.8	1.6	2.0
Southeast Asia	4.9	5.1	5.2	5.0	3.7	5.2	3.1	4.1
Indonesia	5.0	5.4	5.2	5.0	3.6	4.6	3.0	5.1
Malaysia	6.0	6.0	5.4	4.7	3.0	2.7	2.5	2.5
Philippines	6.0	6.5	6.3	6.3	4.2	5.3	3.5	4.3
Singapore	4.3	3.7	3.2	3.0	3.0	5.5	2.3	2.3
Thailand	3.0	2.9	4.5	4.2	3.3	6.3	2.2	2.7
Viet Nam	6.5	6.5	6.7	6.7	3.8	3.8	4.0	4.0

() = negative, ADO = Asian Development Outlook, GDP = gross domestic product.
Source: ADO 2022 Update.

^a This box was written by Irfan Qureshi (economist) and David Keith de Padua (economics officer) in the Economic Research and Regional Cooperation Department of the Asian Development Bank.

Box 1 *continued*

Figure B1: Demand-Side Contributions to Growth



GDP = growth domestic product, H = half.

Source: CEIC Data Company (accessed 1 September 2022).

driven by high double-digit inflation in Pakistan and Sri Lanka. Inflation in East Asia remained relatively manageable at 2.8%. With inflation expected to moderate in the Republic of Korea and Taipei, China, and slower growth in Hong Kong, China mitigating inflationary pressure, inflation in the subregion is expected to slow to 2.5% in 2022 and remain at this level in 2023 (Table B1). In Southeast Asia, inflation accelerated from 3.0% y-o-y in January to 5.5% y-o-y in August, largely reflecting higher energy and food prices. Supply disruptions, higher cost of credit, and reduced production due to bad

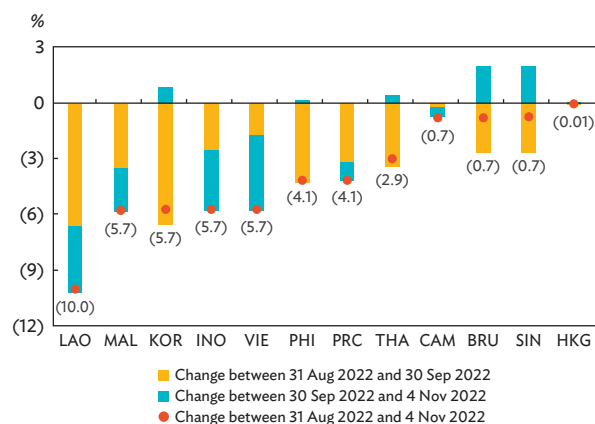
weather have led to higher prices across food groups.

The prices of maize in the Philippines, eggs in Singapore, and meat in Thailand have all increased. Rice prices, a staple in the region, also saw an uptick, reaching USD439 per metric ton in September. India, the world's largest rice-exporting country, started restricting exports in September, threatening to push rice prices higher. With price pressures mounting, headline inflation in developing Asia is expected to reach 4.5% in 2022, up from the 3.7% forecast made in April. Similarly, the inflation forecast for 2023 was raised to 4.0% from 3.1%.

to 4.0% in September and 4.2% in October. Economic growth in Viet Nam accelerated to 13.7% y-o-y in the third quarter (Q3) of 2022 from 7.7% y-o-y in the prior quarter. Meanwhile, 2-year and 10-year bond yields in the Philippines rose by 132 bps and 136 bps, respectively, following the Bangko Sentral ng Pilipinas' aggressive monetary tightening, with consecutive rate hikes every month from May through September for a cumulative 225 bps increase. The Bangko Sentral ng Pilipinas further raised rates by another 75 bps in November. Consumer price inflation has steadily risen in the Philippines since March, with October inflation reaching 7.7% y-o-y, the fastest pace since December 2008 and the second-highest in the region among markets that have released October inflation data.

Regional currencies collectively depreciated against the US dollar, which strengthened on the Federal Reserve's accelerated monetary tightening. During the review period, regional currencies posted average depreciations against the US dollar of 3.8% (simple average) and 4.2% (GDP-weighted average) (Figure B). Currency depreciation accelerated across the region after 13 September when August inflation data for the US came in at a higher-than-expected level, thus implying that aggressive monetary tightening would continue. Given the accelerated monetary tightening, the region witnessed rapid currency depreciation in September and October, with a monthly average of 2.7% (GDP-weighted average), compared to monthly average GDP-weighted exchange rate declines of 1.2% during the first 9 months of 2022,

Figure B: Changes in Select Emerging East Asian Currencies



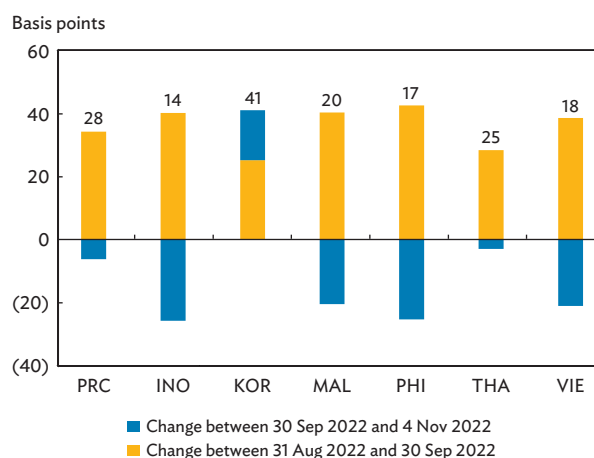
() = negative; BRU = Brunei Darussalam; CAM = Cambodia; PRC = China, People's Rep. of; HKG = Hong Kong, China; INO = Indonesia; KOR = Korea, Rep. of; LAO = Lao People's Democratic Republic; MAL = Malaysia; PHI = Philippines; SIN = Singapore; THA = Thailand; VIE = Viet Nam.
 Note: A positive (negative) value for the FX rate indicates the appreciation (depreciation) of the local currency against the United States dollar.
 Source: AsianBondsOnline computations based on Bloomberg LP data.

1.7% during Q2 2022, and 1.9% during Q3 2022. During the entire review period from 31 August to 4 November, the Lao People's Democratic Republic posted the region's largest currency depreciation (10.0%) on high inflationary pressure, financial stress, and declining foreign reserves.

A dimming global economic outlook and tightening financial conditions soured investment sentiment in emerging markets. During the review period, negative sentiment pushed up risk premiums across the region. As a typical risk premium measure, credit default swap (CDS) spreads widened by 28 bps (GDP-weighted) and 23 bps (simple average) during the review period from 31 August to 4 November (Figure C). During September and October, the region witnessed a monthly average GDP-weighted change of 24 bps in the CDS spread, compared with the monthly average GDP-weighted monthly changes in CDS spreads of 7 bps during the first 9 months of 2022, 9 bps during Q2 2022, and 7 bps during Q3 2022.

Equity markets in emerging East Asia also weakened between 31 August and 4 November by 7.4% (simple average) and 7.5% (market-weighted average) (Figure D). The largest decline was noted in Viet Nam (22.1%) as equities were weighed down by the consecutive rate hikes of 100 bps each in September and October by the

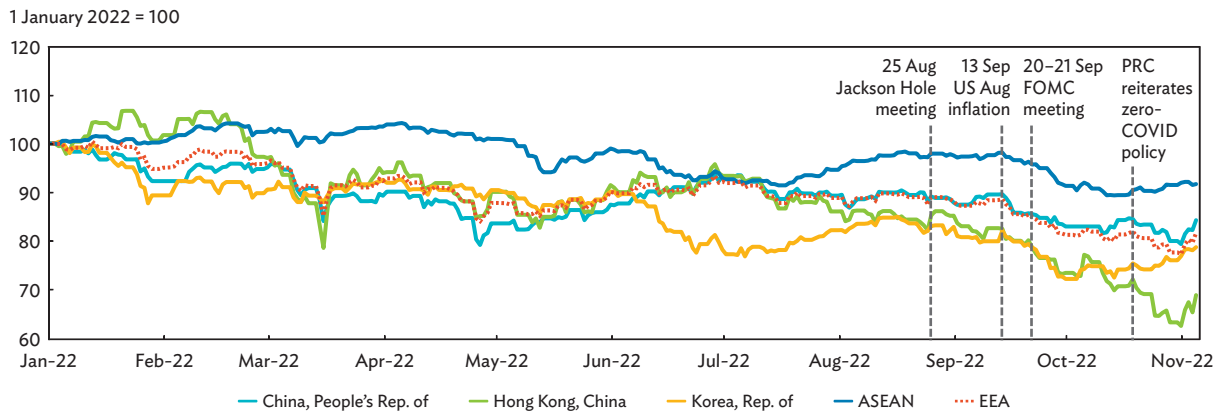
Figure C: Changes in Credit Default Swap Spreads in Select Emerging East Asian Markets (senior 5-year)



() = negative; GDP = gross domestic product; PRC = China, People's Rep. of; INO = Indonesia; KOR = Korea, Rep. of; MAL = Malaysia; PHI = Philippines; THA = Thailand; VIE = Viet Nam.
 Note: Figures refer to change between 31 August 2022 and 4 November 2022.
 Source: AsianBondsOnline computations based on Bloomberg LP data.

State Bank of Vietnam. The downward price pressure was further exacerbated by the triggering of margin calls, while negative news about stock manipulations and the rumor of a bank default also dampened investor sentiment. Next was Hong Kong, China (19.0%), which was dragged down by heightened investor concerns over continued negative domestic GDP growth during the first 3 quarters of 2022 and the PRC's weakened growth outlook and pandemic containment measures. Equity markets in the Philippines and the Republic of Korea retreated by 6.0% and 5.0%, respectively, during the review period. Equities in the Philippines declined over aggressive rate hikes by its central bank in response to rising inflation and a weakening currency. The Republic of Korea posted losses on continued equity outflows. The US ban on semiconductor exports to the PRC also negatively affected Korean semiconductor firms with exposure to the PRC market.

The retreat in regional equity markets can be partly attributed to net foreign capital outflows of USD5.6 billion during the review period (Figure E). All markets except Indonesia and the Republic of Korea posted foreign equity outflows, with the PRC posting the largest net outflows of USD7.8 billion. A negative outlook—generated by uncertainty over the impact of coronavirus disease (COVID-19) containment measures and the

Figure D: Movements in Equity Indexes in Select Emerging East Asian Markets

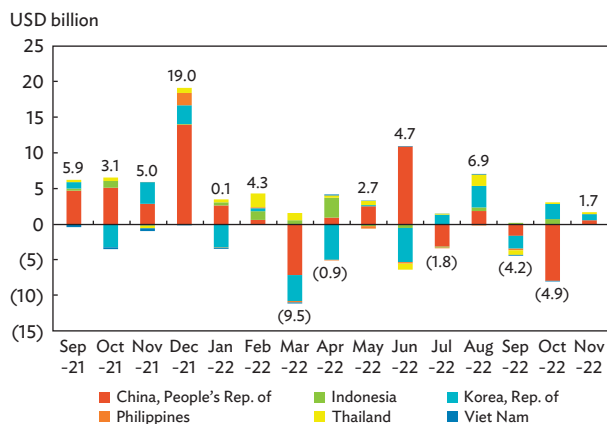
ASEAN = Association of Southeast Asian Nations, COVID = coronavirus disease, EEA = emerging East Asia, FOMC = Federal Open Market Committee, PRC = People's Republic of China, US = United States.

Notes:

1. Equity market indexes included in ASEAN are the Jakarta Stock Exchange Composite Index, Kuala Lumpur Composite Index, Philippine Stock Exchange Index, Straits Times Index, Stock Exchange of Thailand Index, and Vietnam Ho Chi Minh Stock Index.

2. Data as of 4 November 2022.

Source: AsianBondsOnline computations based on Bloomberg LP data.

Figure E: Foreign Capital Flows in Equity Markets in Select Emerging East Asian Markets

(-) = outflows, USD = United States dollar.

Notes:

1. Data coverage is from 1 September 2021 to 4 November 2022.

2. Figures refer to net inflows (net outflows) for each month.

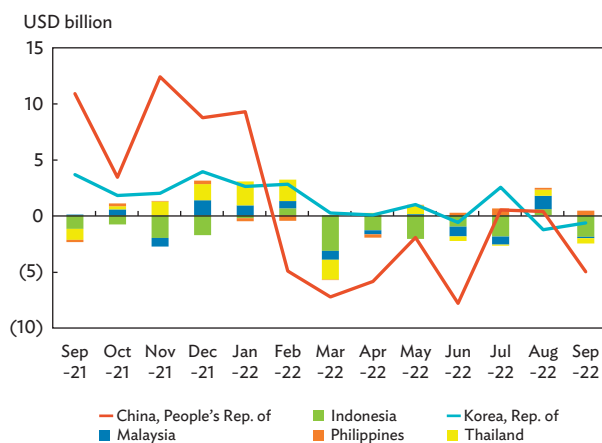
Source: Institute of International Finance.

recent US announcement of export restrictions that could impact its semiconductor industry—continued to hamper the PRC's economy. Excluding Indonesia, all other member markets of the Association of Southeast Asian Nations recorded aggregate capital outflows of USD0.5 billion. Indonesia's equity market recorded net capital inflows of USD0.9 billion as some companies benefited from rising oil prices.

Net outflows were recorded in most regional bond markets in September as accelerated US monetary tightening not only subdued investment sentiment over risky assets but also made yields on emerging East Asian bonds relatively less attractive (**Figure F**). The loss of yield attractiveness was very evident in the PRC and Indonesia, which recorded the region's largest outflows of USD5.0 billion and USD1.9 billion, respectively, in September. This was largely because the PRC maintained an easing monetary stance, while Bank Indonesia's interest rate hikes lagged those of other regional markets up until September. Bank Indonesia subsequently raised rates by 50 bps each in October and November.

The outlook for regional financial conditions remained tilted to the downside. In the short term, subdued growth outlooks in major advanced economies and the PRC, uncertainties regarding the containment of COVID-19 and inflationary pressure, ongoing monetary tightening globally and in the region, and the possibility of larger-than-expected fallout from the Russian invasion of Ukraine will continue to erode investment sentiment. Nevertheless, the financial sector in emerging East Asia remained resilient to persistent headwinds not only because of sound economic fundamentals such as sufficient reserves and healthy fiscal and trade balances, but also because of improved institutional quality and more developed domestic capital markets, especially local

Figure F: Foreign Capital Flows in Local Currency Bond Markets in Select Emerging East Asian Markets



(-) = negative, USD = United States dollar.

Notes:

1. The Republic of Korea and Thailand provided data on bond flows. For the People's Republic of China, Indonesia, Malaysia, and the Philippines, month-on-month changes in foreign holdings of local currency government bonds were used as a proxy for bond flows.
2. Data are as of 30 September 2022.
3. Figures were computed based on 30 September 2022 exchange rates and do not include currency effects.

Sources: People's Republic of China (Bloomberg LP); Indonesia (Directorate General of Budget Financing and Risk Management, Ministry of Finance); Republic of Korea (Financial Supervisory Service); Malaysia (Bank Negara Malaysia); Philippines (Bureau of the Treasury); and Thailand (Thai Bond Market Association).

currency bond markets (**Box 2**). Over the medium term, as many major regional economies commit to transition to net zero emissions, the region's financial sector faces asset vulnerability issues, especially in high-emitting sectors, as well as large financing gaps for investments in low-emission projects and the transitioning of high-emitting sectors. Providing enough financing while ensuring a resilient and timely transition calls for further development of the sustainable finance market and innovative financing solutions (**Box 3**).

Box 2: Institutional Quality as a Shock Absorber for Asian Capital Flows in Crisis Times

Institutional quality comprises an important pull factor for international capital flows (Alfaro, Kalemli-Ozcan, and Volosovych 2009; Pagliari, Hannan, and Kaufman 2017).^a Economies with higher levels of institutional quality tend to have more liquid financial markets and less vulnerability to sharp reversals of capital flows during times of crisis, and they are able to attract global capital flows that are less short-term and volatile in nature, such as foreign direct investment (FDI) and portfolio equity investment. In addition, high levels of institutional quality are associated with less external debt exposure, more export-oriented FDI policies, and more liberalized trade and capital accounts. While numerous studies exist on the benefits of enhanced institutional quality for economic growth, productivity, and economic development (e.g., Knack and Keefer 1995; Mauro 1995; Hall and Jones 1999; Rodrik, Subramanian, and Trebbi 2004), there is less work on the role of institutions as a buffer against economic and financial shocks.

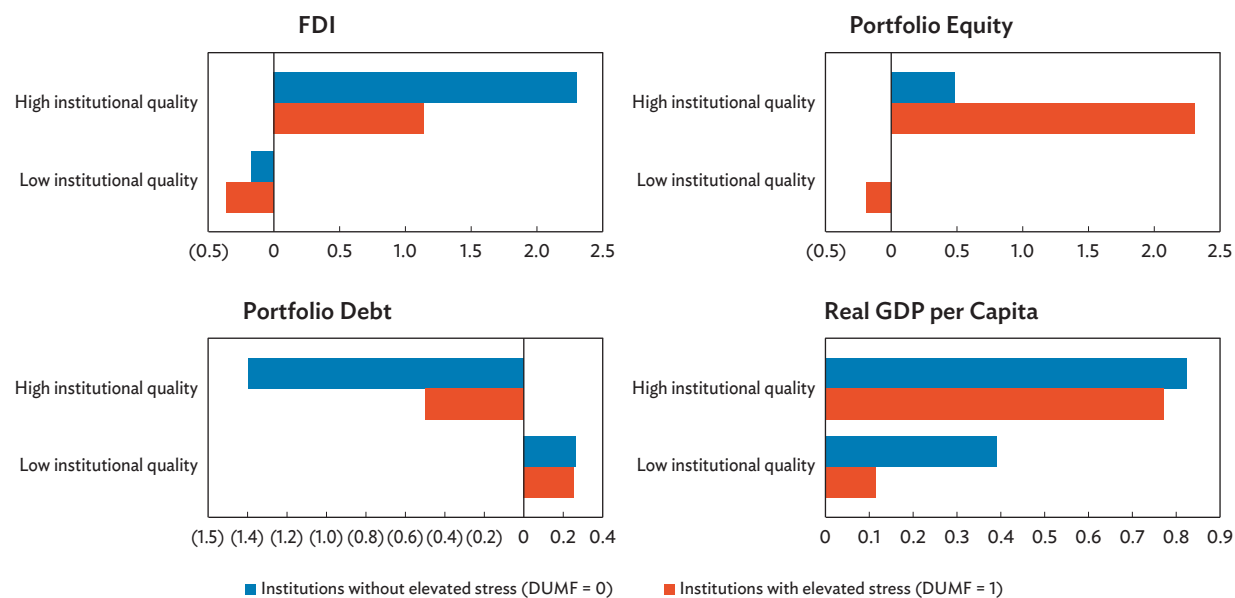
New Asian Development Bank Institute research by Beirne and Panthi (2022) contributes to this literature in the Asian context. Focusing on 12 Asian economies from 1996 to 2020—split between economies that have high and low levels of institutional quality—they empirically test the role of institutions as a resilience mechanism for international capital flows during episodes of elevated financial stress. They also examine the impact of the resilience of gross domestic product (GDP) per capita due to institutions. The main findings from the paper are summarized in **Figure B2**.

In the case of FDI, while elevated financial stress reduces the marginal effect of institutions in economies with high institutional quality by a factor of around two, the overall effect remains positive and significant. For these economies, therefore, institutions have an important role to play in supporting the resilience of FDI. By contrast, the institutions of economies with lower levels of institutional development

^a This box was written by John Beirne (vice-chair of research and senior research fellow) and Pradeep Panthi (research associate) of the Asian Development Bank Institute.

Box 2 *continued*

Figure B2: Impact of Institutions on Capital Flows and Gross Domestic Product per Capita in Asia



(-) = negative, FDI = net foreign direct investment, DUMF = dummy for elevated financial stress, GDP = gross domestic product.

Notes: The figure reports the total (significant) marginal effects from a panel regression analysis. Capital flow measures are net inflows as a share of GDP. The measure used for institutions is based on a principal component analysis of six components of institutions: (i) control of corruption, (ii) government effectiveness, (iii) voice and accountability, (iv) political stability and absence of violence, (v) the rule of law, and (vi) regulatory quality. High institutional quality reflects economies in the sample with institutional quality above the long-term historical average, while low institutional quality refers to economies below the average. The former group comprises Hong Kong, China; Japan; the Republic of Korea; Malaysia; and Singapore. The latter group comprises the People's Republic of China, India, Indonesia, Pakistan, the Philippines, Sri Lanka, and Thailand.

Source: Beirne and Panthi (2022).

do not exhibit positive effects on FDI, even in normal times. Elevated financial stress reduces net FDI inflows for these economies. On portfolio equity, there is some evidence to suggest portfolio-rebalancing effects and safe-haven flows to economies with high institutional quality during crisis times. For these economies, while institutions positively affect equity even in normal times, the effect is magnified more than fourfold in crisis times. While enhancing resilience, it also may suggest that investors rebalance their portfolios toward these economies in times of elevated financial stress. For economies with low-quality institutions, there is no effect of institutions on equity in normal times, whereas a reduction in net equity inflows is evident in crisis times.

Turning to the capital flows that are more volatile in nature, net portfolio debt for economies with lower levels of institutional quality can be somewhat resilient during crisis times, with debt stabilized, although the magnitudes of the effects are small. For economies with high institutional development, even in normal times, institutions are associated with a reduction in net inflows of portfolio debt.

The effect is less pronounced in crisis times (i.e., the marginal effect of institutions is less negative), which is also likely related to portfolio rebalancing effects. These economies also typically attract more stable and longer-term capital flows overall. For real GDP per capita, a threshold effect is evident, whereby the institutions of economies with high levels of institutional quality have twice the effect on economic development in normal times than those of economies with low levels of institutional development. In times of elevated financial stress, the marginal effect of economies with high institutional quality remains largely constant, whereas the effect declines substantially for economies with low institutional quality. This implies that institutions in the former group bolster the resilience of real GDP per capita to heightened financial tensions.

Beirne and Panthi (2022) also examine the subcomponents of institutions to identify which are important for the resilience of real GDP per capita and capital flows. For capital flows, political stability is a key institutional factor for crisis resilience with respect to portfolio equity. However, we also

continued on next page

Box 2 *continued*

observe an important role for regulatory quality, both for FDI and equity. Higher regulatory quality helps to support the resilience of these types of capital flows, which are longer-term and more stable in nature. This can also be an important factor affecting the effectiveness of macroprudential policy in managing capital flows (e.g., Beirne and Friedrich 2017). For real GDP per capita, the main source of resilience due to institutions comes from a strong rule of law and political stability.

While developing solid institutions is a gradual, long-term endeavor, policy makers, in particular in emerging economies, should intertwine their macroeconomic policy frameworks with measures to enhance institutional quality. This can have important implications for stabilizing capital flows and reducing exposure to financial shocks. Strong institutions can also have a strong role to play in terms of both enhancing the absorptive capacity of economies in the face of shocks and accelerating their recovery speed. As policy makers seek to improve the resilience of their economies to macrofinancial disturbances, it follows that structural reforms aimed at improving the quality of institutions should be central to the policy agenda over the medium to long term. A more granular understanding of the subcomponents of institutional quality at the global level, particularly with regard to harmonized cross-country data available over a long period, would provide the basis for more targeted structural policies for enhancing long-term macrofinancial resilience.

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Box 3: Financing the Energy Transition in Emerging Asia

As the region prepares for the next wave of development, energy transition will be critical in the fight against climate change.

Emerging Asia is reliant on coal, and existing coal-fired power plants are relatively young.^a Coal accounts for about half of the region's energy mix and is still subsidized by the government in some markets. Phasing out young coal fleets is a key step to achieving the emission reductions needed to limit global warming to 1.5°C. There are two options: (i) retiring plants early or (ii) repurposing plants to an alternative clean energy solution. However, the retirement of coal plants in emerging Asia is a challenge. The region's average remaining life span of coal-fired power plants operating from 2000 to 2022 is still higher than the world average (**Figure B3.1**).

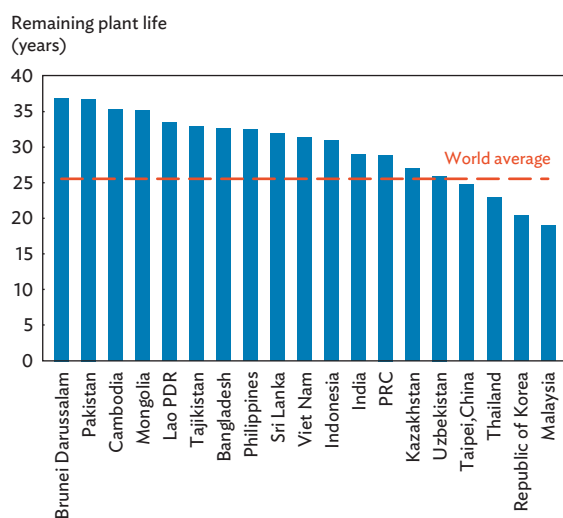
Emerging Asia's coal-fired power plant capacity has declined despite renewable energy capacity increasing in the past decade. The capacity of new coal-fired power plants declined by 41.9% in 2020 from 2011, while total renewable energy capacity increased by almost 200% (**Figure B3.2**). While coal phase-out is a major step in energy transition,

this should be coordinated with a sustained expansion of renewable energy. The falling costs and increasing availability of clean energy solutions offers tremendous opportunities in renewable energy expansion, with solar and wind energy leading the growth in emerging Asia.

Despite the increase in renewable energy capacity, the energy transition score in emerging Asia is still lower than the world average. The average Energy Transition Index (ETI) of emerging Asian economies for 2021 was 56.1, compared with the world average of 59.3 and the advanced economies average of 68.2. The ETI is a benchmark measure of a country's energy transition progress based on the current energy system and transition readiness. Some Asian economies like Singapore, Georgia, Malaysia, Azerbaijan, the Republic of Korea, and Thailand have surpassed the world average ETI (**Figure B3.3**).

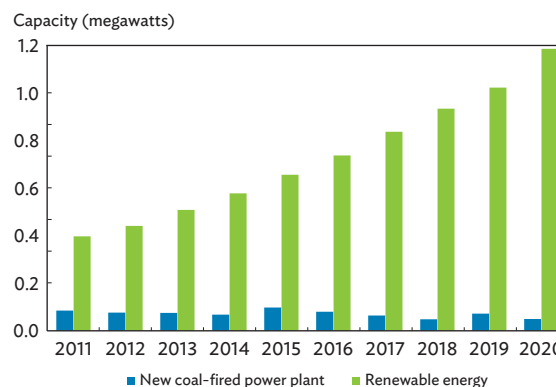
Renewable investments have been increasing, but energy transition requires more than USD1 trillion under a net zero emissions scenario by 2050.^b In 2020, emerging Asia received USD3.0 billion of public flows in renewable investments, up by more than 200% from USD928.5 million in 2000, while peaking in 2017 at USD8.7 billion (**Figure B3.4**). Although climate financing has accelerated with the types of instruments available, it is still short of the USD100 billion per year commitment made at the virtual

Figure B3.1: Average Remaining Life Span of Coal-Fired Power Plants Operating in Emerging Asia



Lao PDR = Lao People's Democratic Republic, PRC = People's Republic of China.
Source: Global Energy Monitor. Global Coal Plant Tracker (accessed 31 July 2022).

Figure B3.2: New Coal-Fired Power Plants and Renewable Energy Capacity in Emerging Asia



Sources: Global Energy Monitor. Global Coal Plant Tracker (accessed 31 July 2022) and International Renewable Energy Agency. 2021. *Renewable Capacity Statistics 2021*. Abu Dhabi.

^a This box was written by Sylvia Chen (senior sustainable officer) of Amundi and Mai Lin Villaruel (economics officer) in the Economic Research and Regional Cooperation Department of the Asian Development Bank.

^b International Energy Agency. 2021. *Financing Clean Energy Investment*. Paris.

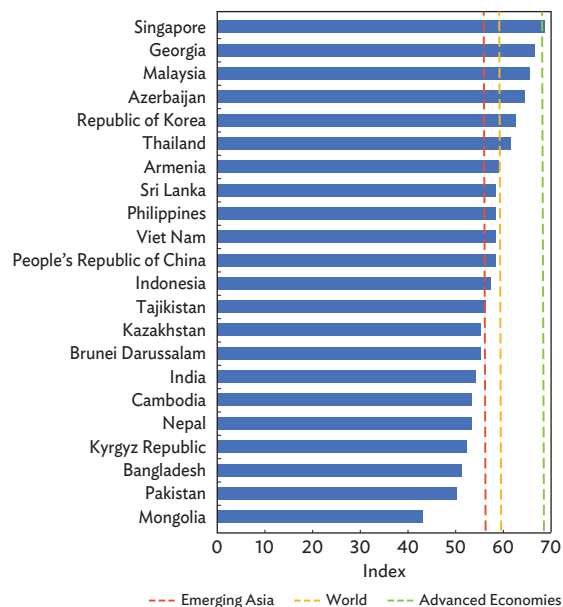
Box 3 continued

component of the United Nations Biodiversity Conference in 2021. For emerging Asia, the focus will be twofold: (i) coal phase-out and (ii) renewable energy expansion. Much effort has been devoted to finding innovative solutions for accelerating coal phase-out while minimizing the risk of stranded coal assets in emerging Asia. The Energy Transition Mechanism announced by the Asian Development Bank at COP26 aims to resolve this issue.^c Another focus is the growing popularity of corporate renewable Power Purchase Agreements, which have contributed to renewable energy development in emerging Asia.

Sustainable bond markets channel private funding to support energy transition. Green bonds are a popular solution to fund projects with positive climate and environmental benefits (Figure B3.5). Green bond issuance for energy sector projects in emerging Asia reached USD14.5 billion in 2021, increasing almost 300% from 2010. While green bonds channel funds to environmentally friendly projects, instruments such as sustainability-linked and transition bonds are also useful tools to finance energy transition, offering opportunities for conventional facilities to achieve sustainability goals such as improving overall environmental performance. The first sustainability-linked bonds in the energy sector in emerging Asia were issued

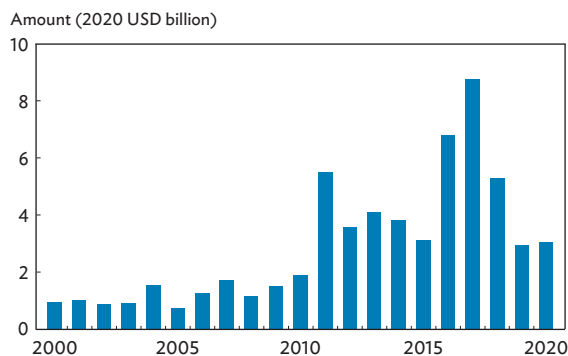
in 2020, totaling USD270.1 million in their first year of issuance before jumping to USD5.3 billion in 2021. Transition bond issuance in emerging Asia has also recently picked up following the region’s inaugural issuance of a transition bond aligned with the International Capital Market Association’s *Climate Transition Finance Handbook in 2021*. As a critical measure to help emerging Asian economies accelerate toward net zero emissions, the transition finance market has significant growth potential.

Figure B3.3: Energy Transition Index, 2021



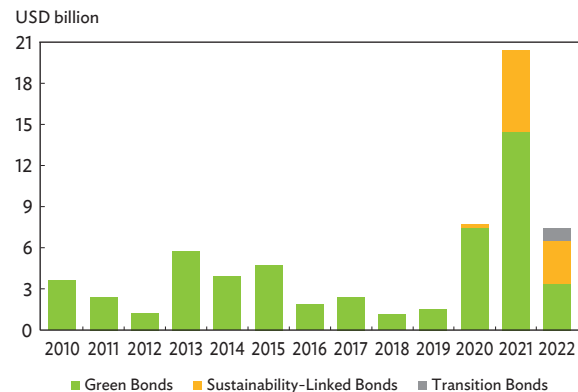
Note: Dotted lines are the average scores.
Source: World Economic Forum. 2021. Global Energy Transition Index.

Figure B3.4: Public Investment Flows in Renewables in Emerging Asia



USD = United States dollar.
Notes: Public flows are financial flows in the form of commitments originating from public institutions like governments, multilateral development banks, and other public finance institutions. A commitment represents a legal contract to mobilize financial funds directed to one or more countries. These flows are corrected for currency exchange rates and inflation to a base year.
Source: International Renewable Energy Agency. Statistics—Renewable Energy Finance Flows (accessed 5 October 2022).

Figure B3.5: Sustainable Bond Issuance in Emerging Asia’s Energy Sector



USD = United States dollar.
Note: Data for 2022 refers to issuance for the period January to September.
Source: Bloomberg LP (accessed 5 October 2022).

^c Asian Development Bank. 2021. *Energy Transition Mechanism Explainer: How ETM Will Support Climate Action in Southeast Asia*. 3 November.