Chapter 1.

Macroeconomic Prospects and Challenges

Highlights

- ASEAN+3 economies entered 2021 on an optimistic note, after relatively effective containment of the pandemic in 2020. Economic recovery was well underway, only to be disrupted by the Delta surge that took the region's COVID-19 cases and deaths to record highs. In response, containment measures were reimposed or retightened, border reopening plans were shelved, and vaccination programs were accelerated or brought forward. The emergence of the more infectious Omicron variant poses a threat to the continued recovery of the region in 2022. However, the acceleration in vaccination coverage should help mitigate the risk to the recovery, and regional economies are likely to continue opening up gradually. AMRO staff's baseline growth forecast for 2022 is expected to remain relatively robust at 4.7 percent, with inflation at 3.5 percent. However, risks to the outlook are mainly on the downside.

- More virulent strains of COVID-19 that are resistant to existing vaccines could emerge. A new wave of such infections could prompt a retightening of containment measures and further test the region's healthcare capacity, derailing the prospects of economic recovery.

- An emerging key risk is the fallout of the Russia-Ukraine conflict, the immediate effects of which have been felt most notably in commodity—particularly energy—prices. A prolonged conflict will keep energy and food prices elevated and risks stoking inflation and lowering growth in the region where most economies are net energy importers. The region's exports could also suffer as a result of lower global growth.

- As the pandemic drags on, the continuation (or recurrence) of supply chain bottlenecks that disrupted trade flows in 2021 cannot be ruled out. The likelihood of more COVID-19-related production shutdowns, raw material shortages, and port-handling delays can have cascading effects given tighter intra-regional trade linkages in recent years. Non-pandemic-related supply chain disruptions, such as shipping-lane and airspace closures during the Russia-Ukraine conflict, could disrupt freight and drive up cargo costs. Persistent supply chain disruptions could undermine the region's export performance and raise global cost pressures.

- While financial markets are expecting a more hawkish stance by the US Fed, a sharper-than-expected monetary policy normalization in the United States could lead to a premature tightening in global financial conditions, with potential implications for interest rates, capital outflows, and financial market volatility in the region. Global bond market volatility has increased in tandem with the shift in the US inflation outlook and the attendant uncertainties. As a result, borrowing costs have trended higher, spilling over to emerging markets, including those in the region. A premature tightening in global financial conditions resulting from US Federal Reserve policy surprises can lead to volatility spikes and fuel global risk aversion. Higher risk premia can cause higher debt service and refinancing risks, and disruptive corrections to stretched assets, depressing regional growth.

- In the financial sector, the prolonged impact of the pandemic on business and household incomes means that financial risks are still elevated. If the recovery is delayed, more businesses and individuals would face greater financial distress, and this could have implications for banking sector soundness. Debt-at-risk analysis of ASEAN+3 companies suggests that default risks appear to have moderated in 2021, after rising sharply in 2020 as debt surged to record levels. Improvement in earnings amid an economic turnaround and policy measures (interest rate reductions, credit expansion, and regulatory forbearance) have helped to keep nonperforming loan ratios low, so far. AMRO staff's top-down stress tests of individual bank balance sheets in ASEAN+3 economies suggest that the majority of banks continue to be well-buffered against large shocks to asset quality.

- Policymaking continues to be focused on alleviating the impact of the pandemic and supporting an economic recovery. The proactive and exceptionally large stimulus and support programs introduced to counter the economic fallout of the pandemic in 2020 were followed by a more targeted and calibrated approach in many of the region's economies. Looking ahead in 2022, given the less supportive global policy settings, regional policymakers will have to undertake a crucial balancing act—avoiding a premature withdrawal of policy support in view of the still nascent economic recovery, while at the same time, facilitating the reallocation of capital and labor to new and expanding sectors, and rebuilding policy space to prepare for future risks.

I. Recent Developments and Outlook

A Close Race between Vaccinations and the Virus

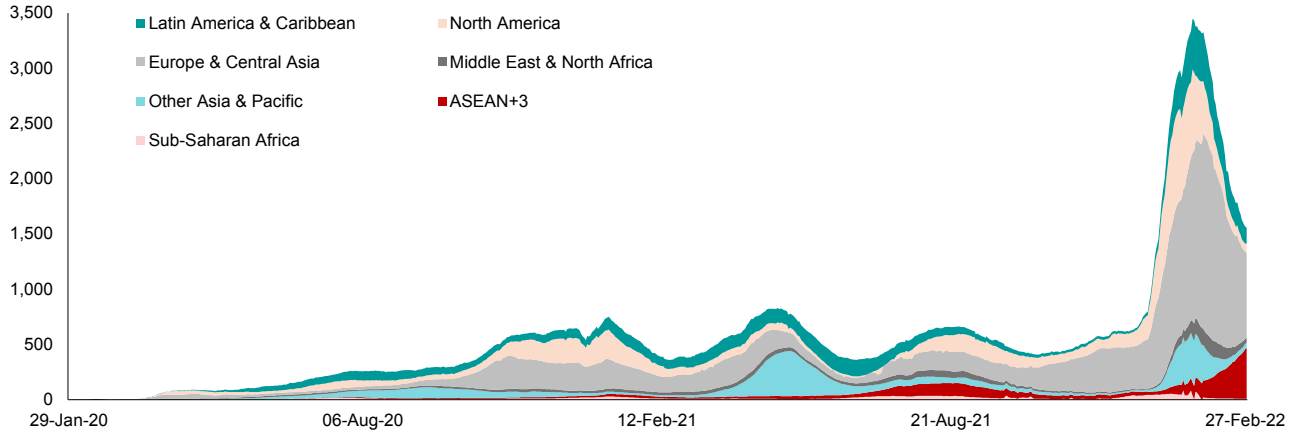
2021 began on an optimistic note with the rollout of COVID-19 vaccines, after relatively effective containment of the pandemic in 2020 in the ASEAN+3 region. Global cases declined in the first two months of the year and administered vaccine doses steadily increased to fully inoculate about 60 million people around the world over the same period, mostly in the United States and Europe where the pandemic was most severe. Falling infection rates and increasing vaccine coverage led to some relaxation in containment measures in several economies, and inadvertently, some complacency in social distancing (WHO 2021). In the ASEAN+3 region, progress in vaccine rollouts was initially slow, partly due to its early success in controlling the spread of the virus but also due to difficulty in securing access to the limited supply of vaccines which are produced mainly in the United States, Europe, China, and India (Figure 1.1).

The Delta variant, a more infectious strain of the virus, took the region's confirmed cases and deaths to record highs in the third quarter of 2021 (Figure 1.2). In response, containment measures were reimposed or retightened, border reopening plans such as travel bubbles were shelved, and vaccination programs were accelerated or brought forward (Figure 1.3). The surge of Delta-variant infections that swept across the ASEAN+3 region lasted about four months, peaking in August, before declining to pre-surge levels at the end of October. Even after the surge abated, mobility restrictions remained in several economies.

Vaccination rates in the region were ramped up in the second half of the year. After a slow start in most of the region (excluding China and Singapore)—due to various factors including supply constraints, medical staff shortages, vaccine hesitancy, and to a certain extent, a lower sense of urgency given initial success at containment—the pace of vaccination accelerated in the third quarter. Increasing infections from the Delta variant highlighted the critical role of vaccines in protecting against infections and severe illness and thus alleviating the pressure on healthcare systems that were overwhelmed in several countries. By the end of the third quarter, double-dose vaccination rates in the region ranged from under 20 percent in Indonesia, Myanmar, the Philippines, and Vietnam to more than 60 percent in Cambodia, China, Malaysia, and Singapore (Figure 1.4). The strong pick-up in vaccination rates helped the region ride the Delta wave with much fewer severe cases and casualties than would have been the case otherwise.

Shortly after the Delta wave subsided, the region was hit by the even more transmissible Omicron variant at the end of the year, bringing more than half of its economies back to the initial stages of AMRO's COVID cycle by the start of 2022 (Figure 1.5). Cases surged again in November 2021, and by the last week of February 2022 the total daily caseload in the ASEAN+3 region had reached above 450,000—15 times more than the level at the end of December 2021.

Figure 1.1. World: Confirmed COVID-19 Cases, by Region
(7-day average, thousand persons)



Sources: Johns Hopkins University via Haver Analytics; and AMRO staff calculations.

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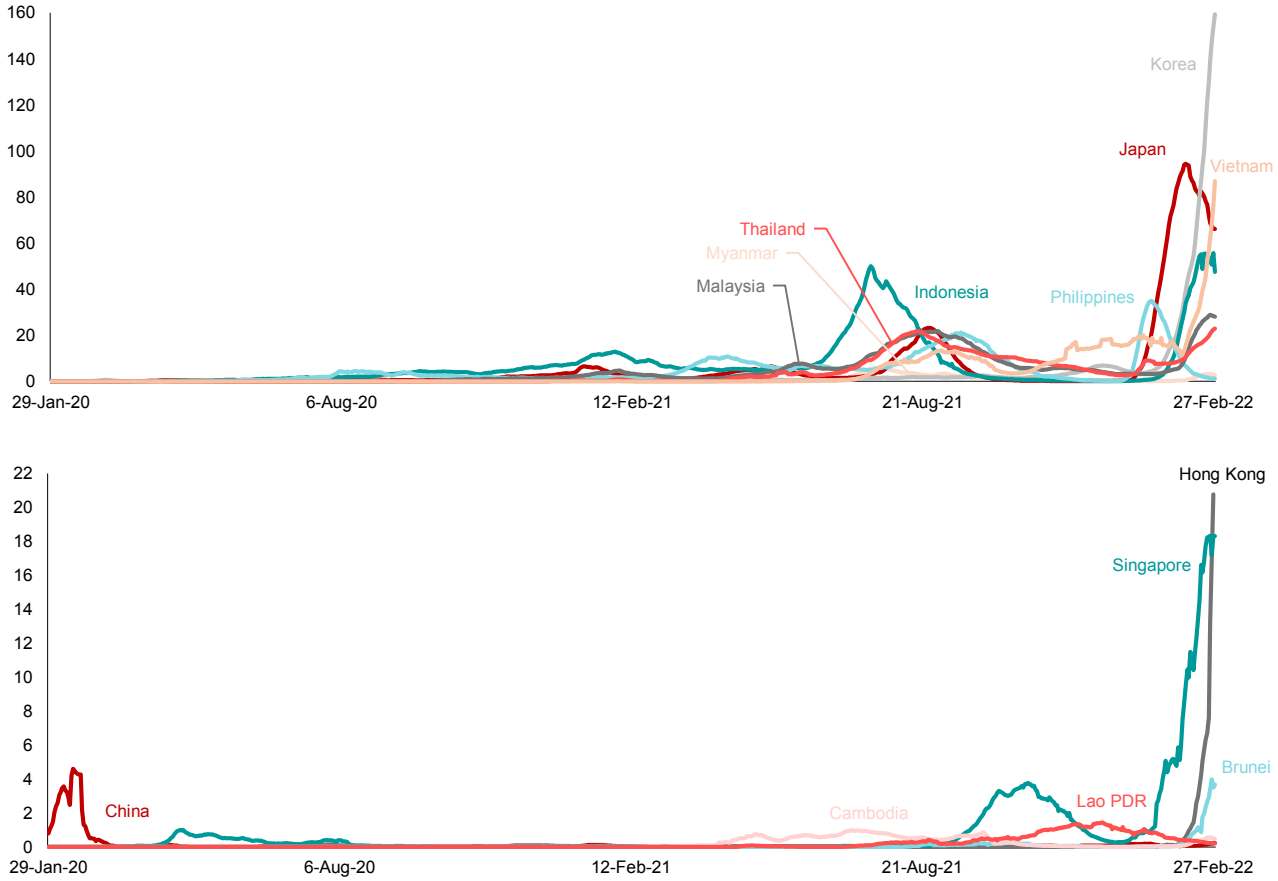
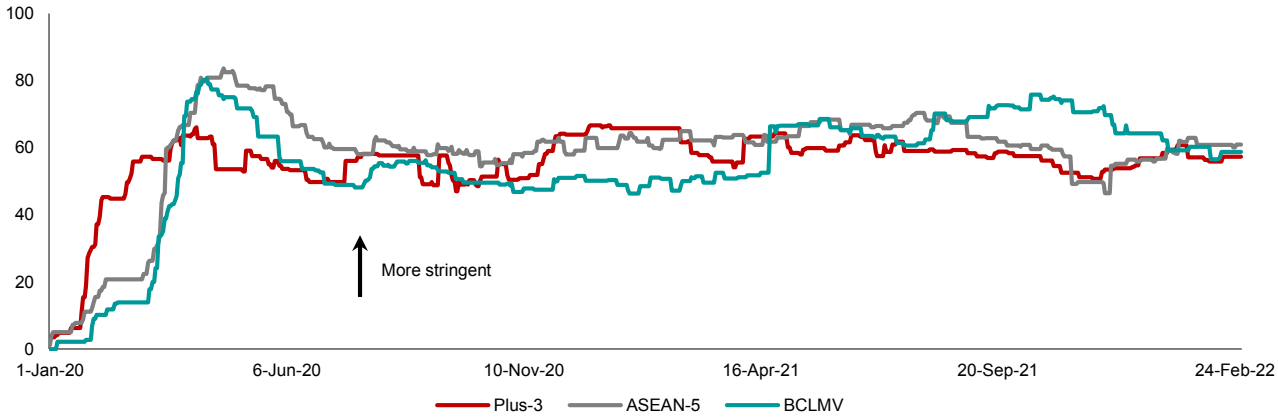
As of February 2022, vaccination rates in the ASEAN+3 economies are generally high, but access to booster doses and COVID-19 antiviral treatments remains uneven. About 72 percent of the region's population are now fully vaccinated, which is relatively high compared to many advanced economies and other emerging market peers (Figure 1.6). Nonetheless, booster programs remain in the early stages for most of the region. Economies with largely vaccinated populations—such as Brunei, Cambodia, China, Japan, Korea and Singapore—have made relatively good progress in securing supplies, but the race to acquire booster doses, especially by countries in North America and Europe heavily affected by the Omicron variant has reintroduced some supply constraints for the rest of the world, risking a widening global vaccination gap (Holder 2022). Similarly, access to antiviral medications to treat COVID-19, even at their early stage of manufacturing, is heavily dominated by economies in North America and Europe (Table 1.1).

Figure 1.2. ASEAN+3: Daily New COVID-19 Cases, by Economy
(7-day average, thousand persons)



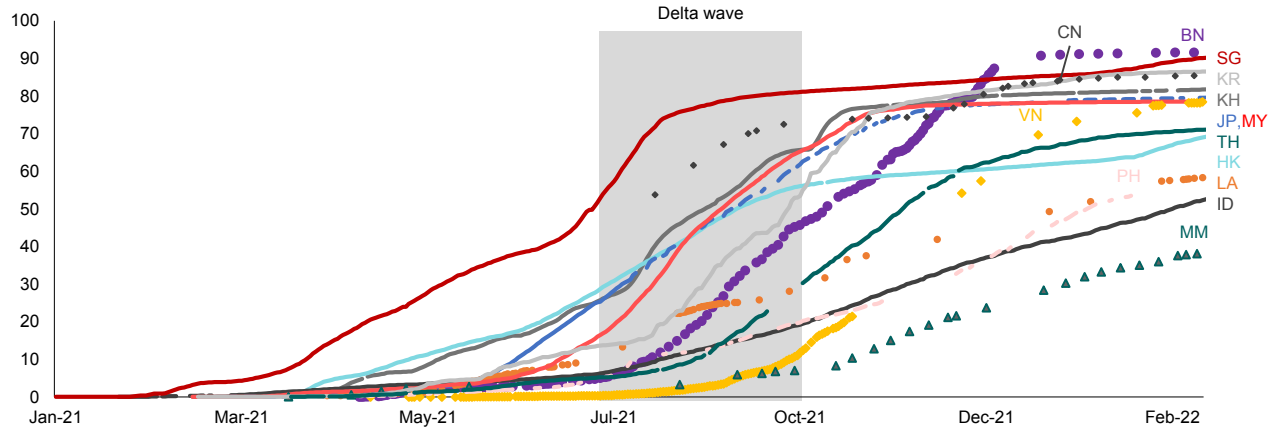
Sources: Johns Hopkins University via Haver Analytics; and AMRO staff calculations.

Figure 1.3. ASEAN+3: Government Response Stringency Index
(0 = no restrictions, 100 = tightest restrictions)



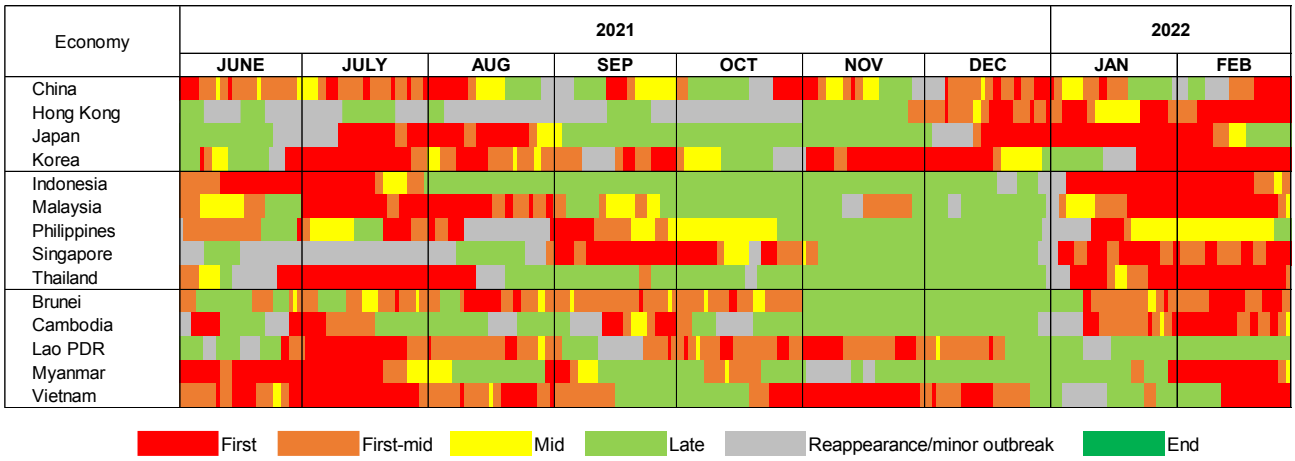
Sources: Our World in Data via Haver Analytics; and AMRO staff calculations.
Note: The stringency index records the strictness of "lockdown-style" policies that primarily restrict people's behavior. The index is a composite measure based on nine response indicators: (1) school closing; (2) workplace closing; (3) cancellation of public events; (4) restrictions on gatherings; (5) closure of public transport; (6) stay-at-home requirements; (7) restrictions on internal movement; (8) international travel controls; and (9) public information campaigns. The indicators are scaled to a value from 0 to 100 (100 = tightest). ASEAN-5 = Indonesia, Malaysia, the Philippines, Singapore, and Thailand; BCLMV = Brunei, Cambodia, Lao PDR, Myanmar, and Vietnam; Plus-3 = China, Hong Kong, Japan, and Korea.

Figure 1.4. ASEAN+3: Fully Vaccinated Population
(Percent of population)



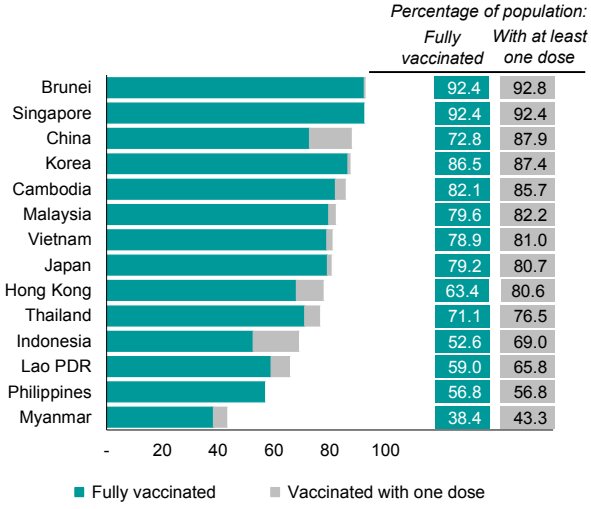
Sources: Our World in Data via Haver Analytics; and AMRO staff calculations.
Note: Fully vaccinated population refers to the proportion of the population that has received all doses prescribed by the vaccination protocol (e.g., one dose of a single-dose vaccine, or two doses of a two-dose vaccine). BN = Brunei; CN = China; HK = Hong Kong; ID = Indonesia; JP = Japan; KH = Cambodia; KR = Korea; LA = Lao PDR; MM = Myanmar; MY = Malaysia; PH = the Philippines; SG = Singapore; TH = Thailand; and VN = Vietnam.

Figure 1.5. ASEAN+3: COVID Cycle Heatmap
(7-day average)



Sources: Johns Hopkins University via Haver Analytics; AMRO staff calculations.
Note: First stage: new cases and active cases are rising daily at a positive rate. First-mid stage: new cases rise or fall at least once in any consecutive 3-day period. Mid stage: new cases are falling but active cases continue to rise daily. Late stage: new cases and active cases are falling daily and eventually tapering off to zero. Reappearance/minor outbreaks: reappearance of a small number of new cases (outbreaks in the bottom 75th percentile of a country's 7-day average daily new cases or outbreaks with fewer than 15 daily new cases in a country's 7-day average; minor outbreaks can retroactively be reclassified as first-stage if the 75th percentile or 15-daily-cases threshold is breached at a later date). End: there are zero new cases, and all active cases have either recovered or died from the virus.

Figure 1.6. ASEAN+3: Vaccination Coverage Status, February 28, 2022
(Percent of population)



Sources: Johns Hopkins University via Haver Analytics; and AMRO staff calculations.

Table 1.1. World: Expressions of Interest in COVID-19 Antiviral Treatments, February 2022
(Volume)

Merck (Mulnopiravir)		Pfizer (Paxlovid)	
Economy	Volume (Number of courses)	Economy	Volume (Number of courses)
Australia	75,000	Australia	500,000
Belgium	10,000	Canada	25,000
Canada	500,000	European Union	Undisclosed
European Union	Undisclosed	Germany	Undisclosed
Germany	Undisclosed	Israel	2,500
Indonesia	15,000 to 25,000	Italy	50,000
Italy	50,000	Korea	70,000
Japan	1,600,000	Thailand	Undisclosed
Korea	200,000	United Kingdom	Undisclosed
Malaysia	150,000	United States	10,000,000
Philippines	300,000		
Singapore	Undisclosed		
Switzerland	8,640		
Thailand	200,000		
United Kingdom	55,750		
United States	3,100,000		

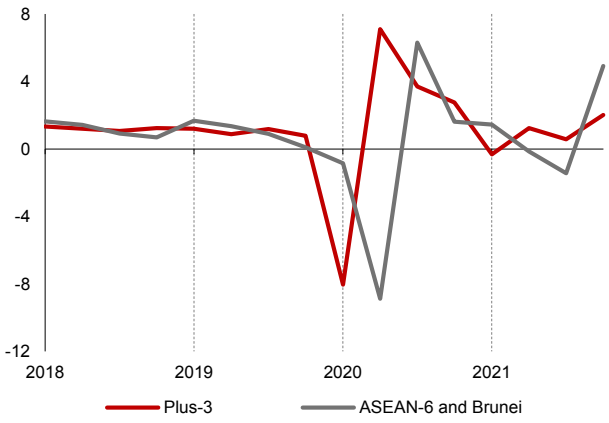
Source: Various media reports.
Note: A full course of mulnopiravir is equal to 40 doses taken in 5 days. A full course of Paxlovid is equal to 30 doses taken in 5 days, along with a booster called ritonavir.

Recovery Momentum Interrupted

The recovery momentum that began in the region at the end of 2020 was interrupted by the Delta wave in mid-year and again by the emergence of the Omicron variant. Growth momentum, in seasonally adjusted quarter-on-quarter terms, weakened in the second and third quarter of 2021 as most regional economies retightened containment measures to stem the spread of infections (Figure 1.7). Momentum began to strengthen in the fourth quarter of the year amid a broader resumption of economic activity and the easing of some border restrictions. When the Omicron variant broke out in South Africa at the end of November 2021, ASEAN+3 governments clamped down sharply on border controls. However, studies have shown that the health impact of the Omicron variant is relatively mild, and vaccines still offer relatively effective protection, especially with booster doses. Consequently, governments in most economies have lifted or eased the restrictions and have kept their economies relatively open despite the continuing spread of Omicron infections. As a result, growth is expected to weaken only slightly in the first quarter of 2022 and to pick up and regain momentum in the subsequent quarters.

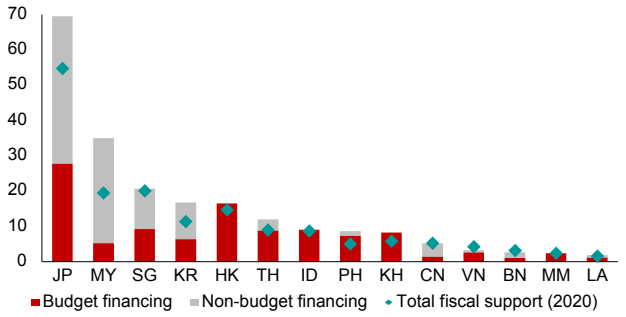
Continued policy support played a crucial role in sustaining economic activity in 2021. The resurgence of the virus, particularly of the Delta variant, led authorities in the region to extend fiscal and financial support to firms and workers affected by renewed lockdowns and containment measures (Figure 1.8). While less extensive than in 2020, income support and credit policies continued to be extended to households and firms to ease liquidity constraints during the uncertain recovery period. The support helped private sector spending to respond quickly to the relaxation of containment measures—both household spending and investment activity expanded from the second quarter of 2021 onward (Figure 1.9).

Figure 1.7. Selected ASEAN+3: Real GDP Growth
(Percent, quarter-on-quarter, seasonally adjusted)



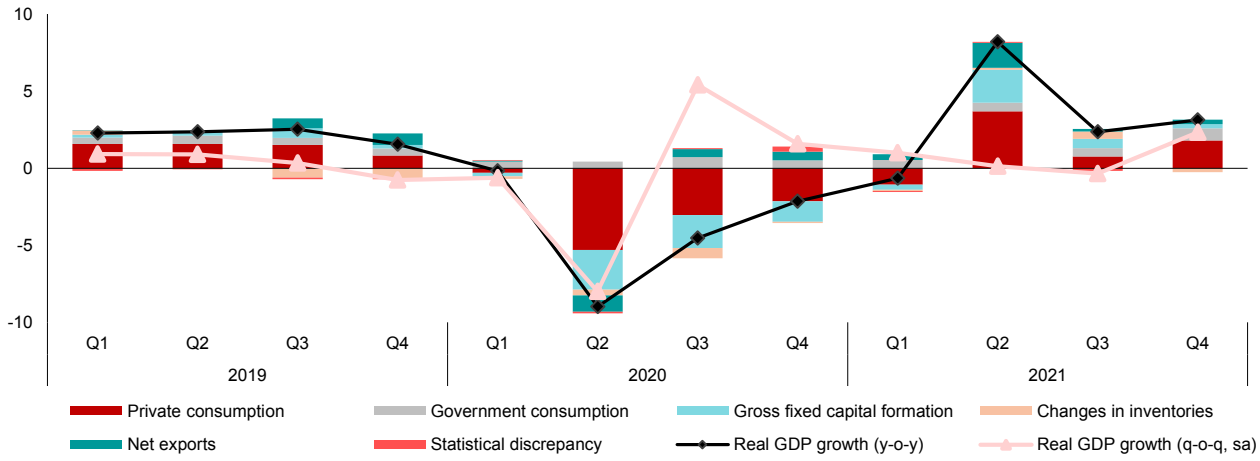
Sources: National authorities via Haver Analytics; AMRO staff estimates and calculations.
Note: Data are as of Q4 2021. Q4 2021 data for Brunei are estimated by AMRO staff.
ASEAN-6 = Indonesia, Malaysia, the Philippines, Thailand, Singapore, and Vietnam.

Figure 1.8. ASEAN+3: Total Fiscal Support, 2020–22
(Percent of GDP)



Sources: National authorities via Haver Analytics; and AMRO staff estimates.
Note: Data refer to fiscal support extended from February 1, 2020 to February 28, 2022. Based on governments' announced economic relief/stimulus packages. Budget financing refers to the fraction of the announced package financed from the budget. Non-budget financing refers to the fraction of the announced package financed from non-budget resources, e.g., public funds, public financial institutions or entities, or fiscal reserves. Total fiscal support (2020) refers to fiscal support extended from February 1, 2020, to February 28, 2021. BN = Brunei; CN = China; HK = Hong Kong; ID = Indonesia; JP = Japan; KH = Cambodia; KR = Korea; LA = Lao PDR; MY = Malaysia; MM = Myanmar; PH = the Philippines; SG = Singapore; TH = Thailand; and VN = Vietnam.

Figure 1.9. Selected ASEAN+3: Aggregate Real GDP Growth, by Expenditure Category
(Percentage points, year-on-year; quarter-on-quarter, seasonally adjusted)



Sources: National authorities via Haver Analytics; AMRO staff estimates and calculations.
Note: y-o-y = year-on-year. q-o-q, s.a. = quarter-on-quarter, seasonally adjusted. Selected ASEAN+3 includes Brunei, Hong Kong, Indonesia, Japan, Korea, Malaysia, the Philippines, Singapore, and Thailand. Data are unavailable for Cambodia, China, Lao PDR, Myanmar, and Vietnam. Q4 2021 data for Brunei are estimated by AMRO staff.

Table 1.2. ASEAN+3: Overview of Key Pandemic Policies in 2022

Policy	BN	KH	CN	HK	ID	JP	KR	LA	MY	MM	PH	SG	TH	VN
Virus containment policies														
Domestic mobility restrictions *e.g., social distancing, work closures, school closures*	●	◉	●	●	●	●	◉	●	●	●	●	●	●	●
Border closure *e.g., entry restrictions for foreign travelers*	●	◉	●	●	●	●	●	●	●	●	●	●	●	●
Fiscal policy support														
Support for households *e.g., cash handouts, personal income tax exemptions*	◉	●		●	●	●	○	◉	●	◉	●	○	●	●
Support for businesses *e.g., wage subsidies, tax cuts, fee waivers*	◉	●	●	●	●	●	●	◉	●	●	●	●	●	●
Targeted to specific domestic sectors (food and beverage, retail, and entertainment outlets, transport operators, etc.)	◉		●	●	●	●	●		●	●		●	●	
Targeted to specific export sectors (travel and tourism, export-manufacturing)		●		●	●	●	●	●	●	●		●	●	
Monetary policy support *e.g., policy rate reduction, reduction in required reserve ratio*		●	●		●		◉	●	●	●	●			●
Financial/macroprudential policy support *e.g., looser regulations on banks' capital or liquidity buffers, loan classification, etc.*		●		●	●	●	●	●	●	●	●	●	●	●
Targeted to households *e.g., loan guarantees, loan restructuring for low-income individuals*	●	●		●	●	●			●	●	●	◉	●	
Targeted to businesses *e.g., special lending facilities, loan restructuring for small businesses*	●	●	●	●	●	●	●	●	●		●	●	●	
Pandemic support from international donors (e.g., ADB, World Bank)		●			○			●		◉	●			●

Source: AMRO, "ASEAN+3 and COVID-19: Panoply of Pandemic Policies" database.
Note: ● indicates support still in place at the end of 2021; ◉ indicates support expired on or before December 31, 2021; ○ indicates support expired on or before December 31, 2020. ADB = Asian Development Bank; BN = Brunei; CN = China; HK = Hong Kong; ID = Indonesia; KH = Cambodia; KR = Korea; LA = Lao PDR; MM = Myanmar; MY = Malaysia; PH = the Philippines; SG = Singapore; TH = Thailand; and VN = Vietnam.

Private consumption rebounded in the first half of 2021 but weakened in the second half of the year as the region was hit by recurrent waves of Delta-variant infections (Figure 1.10). The rebound was aided by: improved consumer confidence following rising vaccination rates and the easing of mobility restrictions (Figure 1.11 and Figure 1.12); the pick-up in labor income—workers' earnings in major ASEAN economies and Korea rose as economic activity gradually resumed (Figure 1.13); as well as continued direct financial support in the form of cash handouts, wage subsidies, and debt relief programs. Pent-up consumer demand boosted retail sales in the first six months of 2021 (Figure 1.14). Sales of automotive fuels, clothing, and recreational sports and cultural goods rebounded as mobility improved, while purchases of electronics, and information and communications technology (ICT) products remained robust due to continued remote working arrangements and sustained growth in e-commerce. However, retail sales moderated in the second half of last year, weighed down by the emergence of the Delta and Omicron variants.

Private consumption is likely to improve gradually in the near term. The continued economic recovery and shift toward e-commerce would support domestic demand going forward, and the region's high vaccination rates are expected to sustain consumer confidence in the face of Omicron. However, household spending could be dampened by higher inflation due to elevated food and fuel prices. Discretionary spending, particularly among vulnerable households, could be constrained by income loss, debt overhang and eventual withdrawal of support policies.

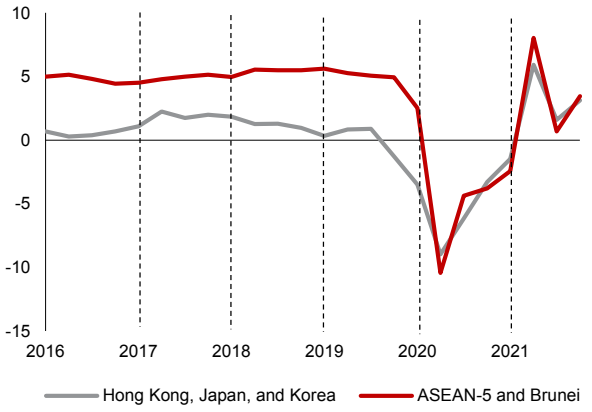
Private investment similarly rebounded in the first half of 2021 and moderated in the second half of the year. Gross fixed capital formation (GFCF) in the ASEAN+3 region, excluding China, rebounded strongly, following the relaxation of mobility restrictions that allowed more investment projects to resume, and strong external demand for electronics and other manufactured products, and spurred by easy access to credit (Figure 1.15 and 1.16). Investment activity moderated in the third quarter of the

year as the surge of infections in the region heightened business uncertainties. In China, idiosyncratic factors such as the tightening of regulatory measures on the property sector and tech companies led to slower growth in GFCF throughout 2021.

Investment activity is expected to improve further in 2022 as the region continues to reopen and recover. Approvals of new investment projects in key ASEAN economies remain on a positive trend and are poised to pick up further (Figure 1.17). Investment will also be spurred by national infrastructure-building programs highlighted in development strategies such as China's 14th Five-Year Plan, Indonesia's Fourth National Medium-Term Development Plan, the 12th Malaysia Plan, the Philippines' Build, Build, Build infrastructure program, and Thailand's Eastern Economic Corridor. The region's diversified trade linkages through multilateral trade agreements such as the Regional Comprehensive Economic Partnership (RCEP) and its collective focus on sustainable and digitalization-led growth, would continue to encourage long-term investments. However, rising interest rates, the build-up in private debt, and global uncertainty surrounding the pandemic and ongoing geopolitical tensions, cast a dark cloud over the investment outlook.

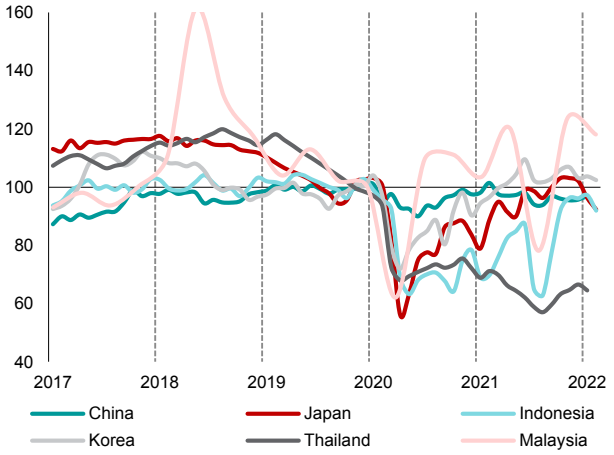
At the time of writing, most ASEAN+3 economies are assessed to be in the early phase of their business cycles. Only China, which rebounded strongly in late 2020 through 2021 following successful pandemic containment, and Korea and Singapore, which benefited from strong demand for exports of manufactured products and modern services[1] throughout 2021, are assessed to be in mid-cycle (Figure 1.18).

Figure 1.10. Selected ASEAN+3: Real Private Consumption Growth
(Percent, year-on-year)



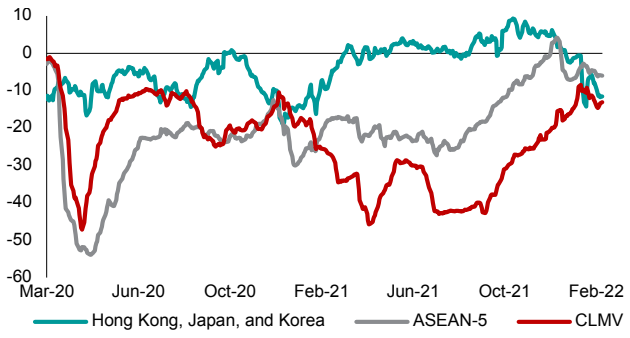
Sources: National authorities via Haver Analytics; and AMRO staff calculations.
Note: Private consumption data on China are not available. Q4 2021 data for Brunei are estimated by AMRO staff. ASEAN-5 = Indonesia, Malaysia, the Philippines, Singapore, and Thailand.

Figure 1.11. Selected ASEAN+3: Consumer Confidence
(Index, October–December 2019 = 100)



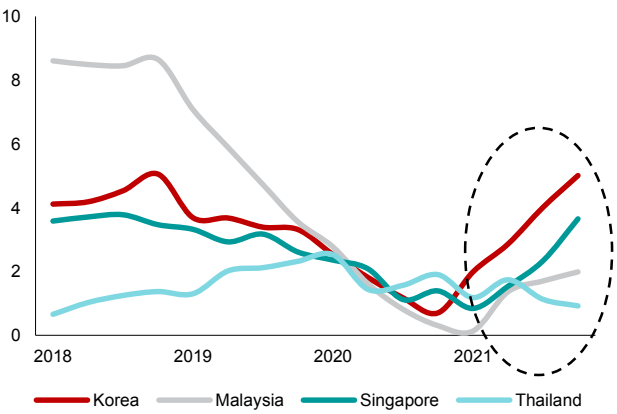
Sources: National authorities via Haver Analytics; and AMRO staff calculations.
Note: Data are monthly for all economies excluding Malaysia (quarterly). Data for Malaysia are indexed to Q4 2019 = 100.

Figure 1.12. Selected ASEAN+3: Aggregate Non-Residential Mobility
(Percentage change from baseline; 5-day moving average)



Sources: Google COVID-19 Community Mobility reports via Haver Analytics; and AMRO staff calculations.
Note: Baseline refers to the median value of the corresponding day in the period January 3–February 6, 2020. Non-residential mobility refers to aggregated mobility data for places such as groceries and pharmacies, retail and recreation facilities, transit stations, and workplaces. ASEAN-5 = Indonesia, Malaysia, the Philippines, Thailand, and Singapore. CLMV = Cambodia, Lao PDR, Myanmar, and Vietnam.

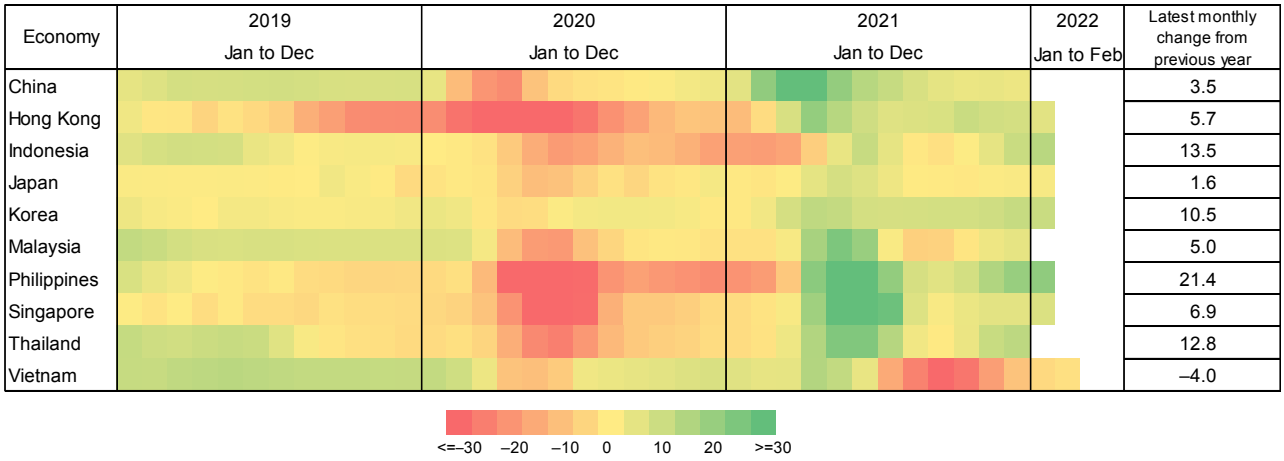
Figure 1.13. Selected ASEAN+3: Average Nominal Workers' Earnings
(Percent, year-on-year, 4-quarter moving average)



Sources: National authorities via Haver Analytics; and AMRO staff calculations.
Note: Nominal earnings are in local currency terms. Earnings for Malaysia refer to those in the manufacturing sector only.

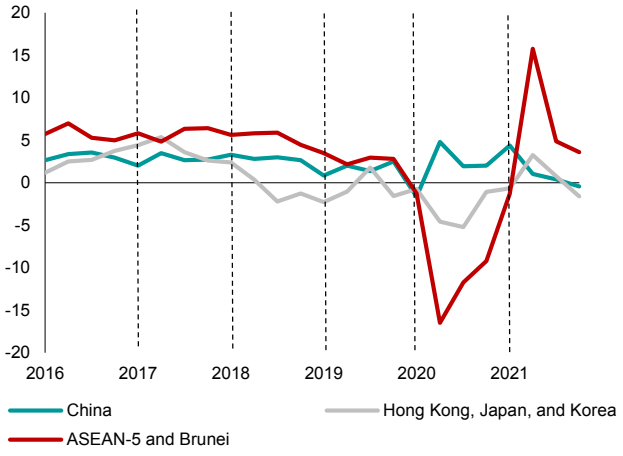
1/ Modern services can be defined as internationally tradable services that can be provided without the need for proximity between purchaser and supplier (Loungani and others 2017). Examples of modern services include ICT, finance and insurance, and professional services.

Figure 1.14. Selected ASEAN+3: Retail Sales Growth
(Percent, year-on-year, 3-month moving average)



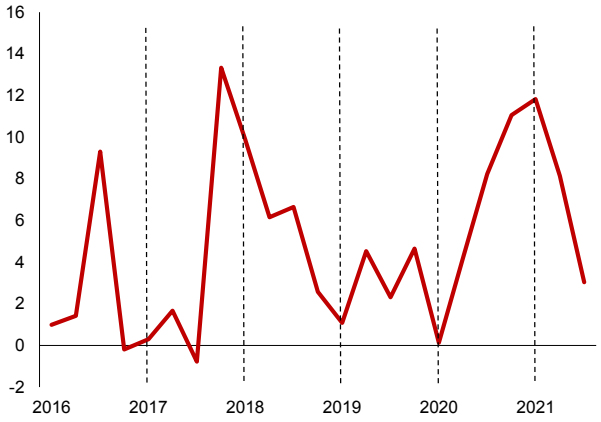
Sources: National authorities via Haver Analytics; and AMRO staff calculations.
Note: Calculated based on local currency values for all economies excluding Indonesia and Thailand (volume). Colors indicate the size and direction of change: the deeper the shade of red, the larger the negative change (with the darkest shade indicating a decrease of more than 30 percent year-on-year); the deeper the shade of green, the larger the positive change (with the darkest shade indicating an increase of more than 30 percent year-on-year).

Figure 1.15. Selected ASEAN+3: Real Gross Fixed Capital Formation
(Percent, year-on-year)



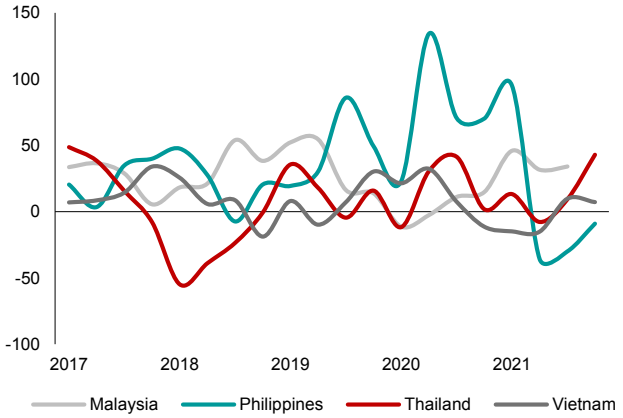
Sources: National authorities via Haver Analytics; and AMRO staff calculations.
Note: Data are unavailable for Cambodia, Lao PDR, Myanmar, and Vietnam. Q4 2021 data for Brunei are estimated by AMRO staff. ASEAN-5 = Indonesia, Malaysia, the Philippines, Singapore, and Thailand.

Figure 1.16. Selected ASEAN and Korea: Growth of Real Credit to Private Nonfinancial Corporations
(Percent, year-on-year)



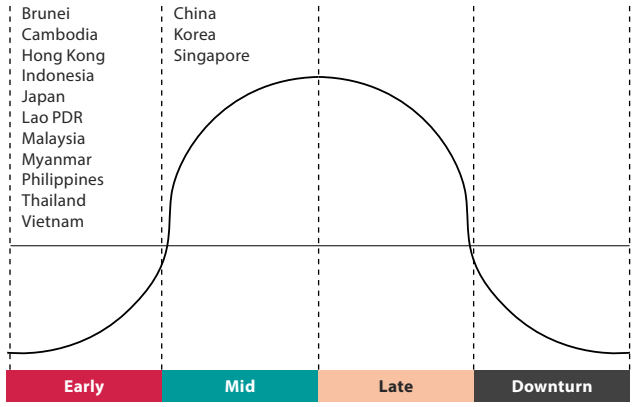
Sources: Bank for International Settlements via Haver Analytics; and AMRO staff calculations.
Note: Selected ASEAN = Indonesia, Malaysia, and Thailand. Data are up to Q3 2021.

Figure 1.17. Selected ASEAN: Investment Approvals
(Percent, year-on-year, 4-quarter moving average)



Sources: National authorities via Haver Analytics; and AMRO staff calculations.
Note: Data for Malaysia refer to capital investment in approved projects in the manufacturing sector. Data for Thailand refer to all sectors. Data for Vietnam refer to newly registered capital for foreign direct investment. Data refer to local currency values of approved projects, excluding Vietnam (in US dollars). Indonesia and Singapore are excluded due to unavailability of comparable data.

Figure 1.18. ASEAN+3: Business Cycle Position, February 28, 2022



Source: AMRO staff estimates.
Note: "Early cycle" indicates that growth is below trend and the output gap is negative and narrowing. "Mid-cycle" indicates that growth is around trend and the output gap is positive and widening. "Late cycle" indicates that growth is above trend and the output gap is positive and narrowing. "Downturn" indicates that growth is below trend and the output gap is negative and widening.

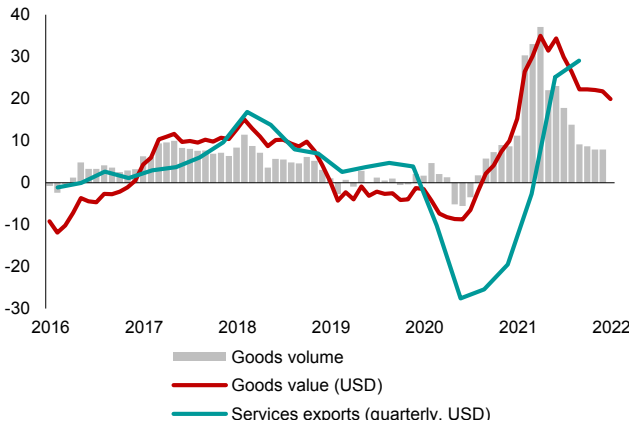
Robust External Demand—Boon and Bane

ASEAN+3 exports rebounded significantly in 2021 on the back of strong external demand. In 2021, ASEAN+3 exports grew by 28 percent year-on-year, from a modest expansion of 0.3 percent in 2020 (Figure 1.19). The pick-up in merchandise exports was broad-based, as the region's exporters benefited from strong demand in major markets, especially the United States, where the initial pandemic-induced demand for ICT goods such as computers and consumer electronics equipment broadened into a flood of retail spending buoyed by government stimulus checks and an easing of pandemic restrictions (AMRO 2021) (Figure 1.20).

Key ASEAN+3 semiconductor producers, in particular, benefited from strong global demand in 2021. Semiconductor chips are critical components in many consumer products, from smartphones to cars, and even washing machines. As economies started to reopen, demand for chips started to surge worldwide. Since late 2020, robust global demand has contributed to rising prices across various semiconductor segments (Figure 1.21 andFigure 1.22). At the same time, a global semiconductor chip shortage emerged, affecting more than 150 manufacturing sectors, including the automotive, technology, and consumer electronics sectors (Howley 2021). While the circumstances leading to the shortage of semiconductor chips have been developing over the past few years, they were exacerbated by production shutdowns in key ASEAN+3 factories implemented to contain COVID-19 infections. The supply constraint is particularly severe in mature-process chips (built from 200-millimeter wafers), which include display circuits and power management chips. AMRO staff's estimate of the semiconductor cycle suggests that existing supply and demand imbalances in the global industry will persist in 2022, or even beyond, but would not be as severe as in 2021 (Figure 1.23) (IHS Markit 2021, Yun 2021). Looking ahead, global chipmakers like Taiwan Semiconductor Manufacturing Company (TSMC), Samsung, and Intel have announced plans to ramp up production capacity and roll out more fabrication units, including in the region.[2]

Merchandise export growth in 2022 remains vulnerable to slowing economic recovery in key trading partners, global inflation risks, and global logistics bottlenecks. Dissipating base effects and slowing economic recovery in major markets such as the United States, Europe, and China could weigh on demand for the region's exports (Figure 1.24). In China, economic growth has slowed since the third quarter of 2021, crimped by new domestic virus clusters, power shortages, the impact of regulatory reforms in the high-tech sector and property markets, and sluggish consumer spending. In the United States and Europe, persistent supply chain chokepoints could continue to put a lid on goods spending. Rising inflationary pressures and tightening monetary conditions could also further dampen demand from major trading partners (Figure 1.25). Continued disruptions in global logistics and transport networks and lingering supply chain backlogs leading to persistent upward pressure on shipping costs would add headwinds to the outlook for ASEAN+3 merchandise exports in 2022 (IHS Markit 2021) (Box 1.1).

Figure 1.19. Selected ASEAN+3: Goods and Services Exports
(Percent, year-on-year, 3-month moving average)



Sources: National authorities via Haver Analytics; and AMRO staff calculations.
Notes: For goods exports, selected ASEAN+3 include all Plus-3 and ASEAN-6 economies (Indonesia, Malaysia, the Philippines, Singapore, and Vietnam). For services exports, selected ASEAN+3 include all Plus-3, ASEAN-6 economies, Cambodia and Lao PDR.

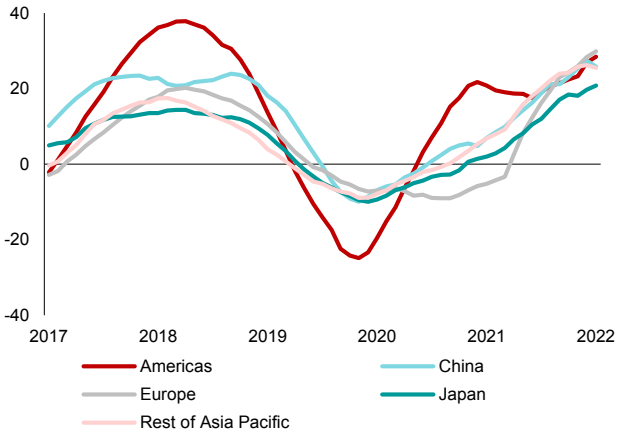
Figure 1.20. ASEAN+3: Goods Exports
(Percent, year-on-year, 3-month moving average)

Economy	2019 Jan – Dec	2020 Jan – Dec	2021 Jan – Dec	2022 Jan – Feb	Latest monthly change from previous year
PLUS-3					16.3
China					11.8
Hong Kong					17.9
Japan					–1.1
Korea					20.6
ASEAN					24.5
Brunei					142.7
Cambodia					25.6
Indonesia					34.1
Lao PDR					–11.5
Malaysia					19.0
Myanmar					–0.3
Philippines					8.9
Singapore					19.9
Thailand					9.0
Vietnam					15.5

Sources: National authorities via Haver Analytics; and AMRO staff calculations.

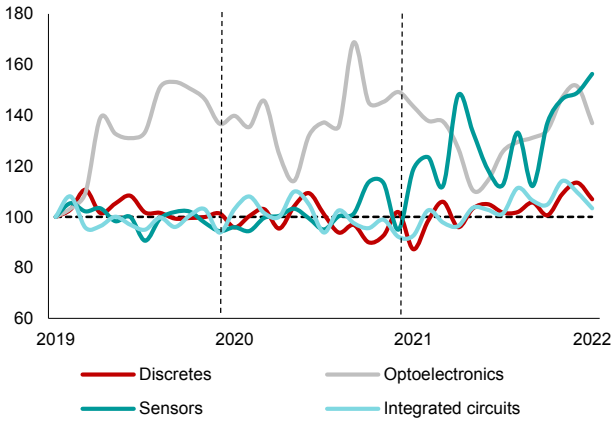
2/ For example, Reuters reported on November 10, 2021, that TSMC, the world's largest contract chip manufacturer, will team up with Sony to build a USD 7 billion chip plant in Japan that will likely start production by late 2024; Bloomberg reported on December 13, 2021, that Intel will build a new advanced chip packaging facility in Malaysia that is expected to begin production in 2024. The increase in capacity will mostly be driven by the advanced process nodes: by 2024, capacity for 200-millimeter wafers and the 300-millimeter category (which are utilized for the most advanced chips), are expected to grow by 18 and 50 percent, respectively. Additional capacity for the former will come from expansion in existing fab capacity, while for the latter, from the building of new plants (Takahashi 2021).

Figure 1.21. Global Semiconductor Billings, by Market
(Percent, year-on-year, 12-month moving average)



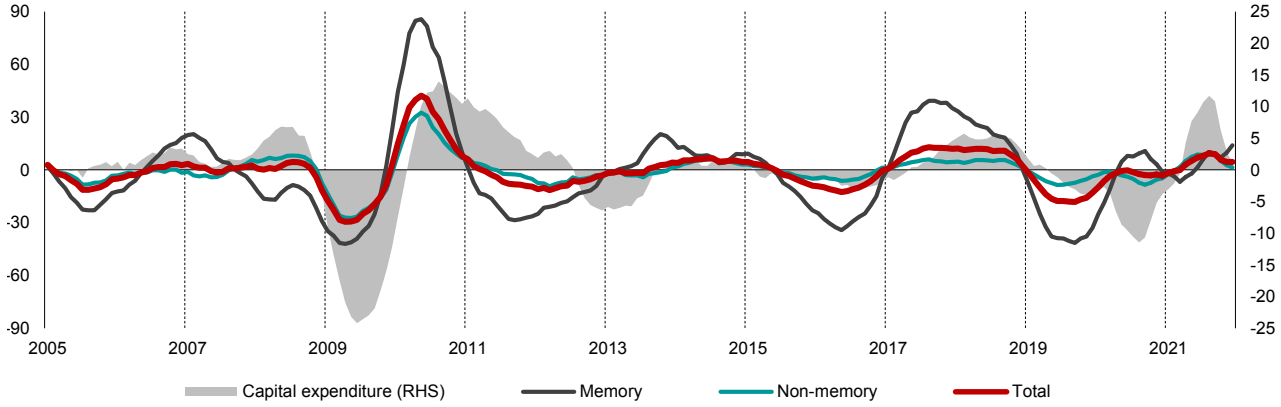
Source: World Semiconductor Trade Statistics, Inc.

Figure 1.22. Unit Price of Semiconductors, by Product Type
(Index, January 2019 = 100)



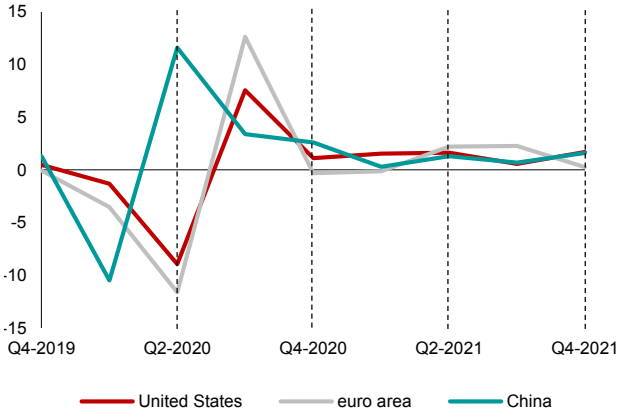
Source: World Semiconductor Trade Statistics, Inc.

Figure 1.23. Global Semiconductor and Capital Expenditure Cycles
(Percent, year-on-year, 6-month moving average)



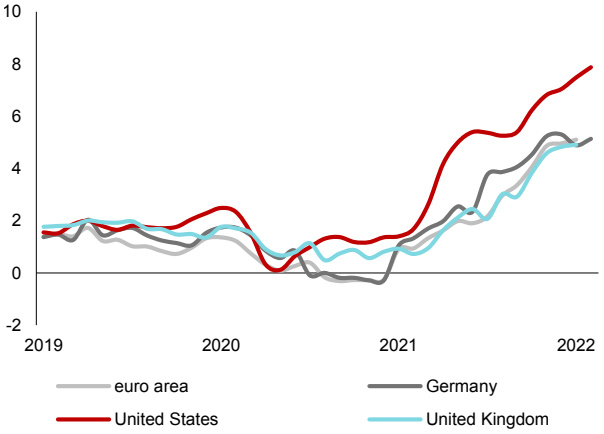
Sources: World Semiconductor Trade Statistics, Inc.; and AMRO staff calculations.

Figure 1.24. Selected Economies: Real GDP Growth
(Percent, quarter-on-quarter, seasonally adjusted)



Source: OECD.Stat.

Figure 1.25. Selected Advanced Economies: Consumer Prices
(Percent, year-on-year)



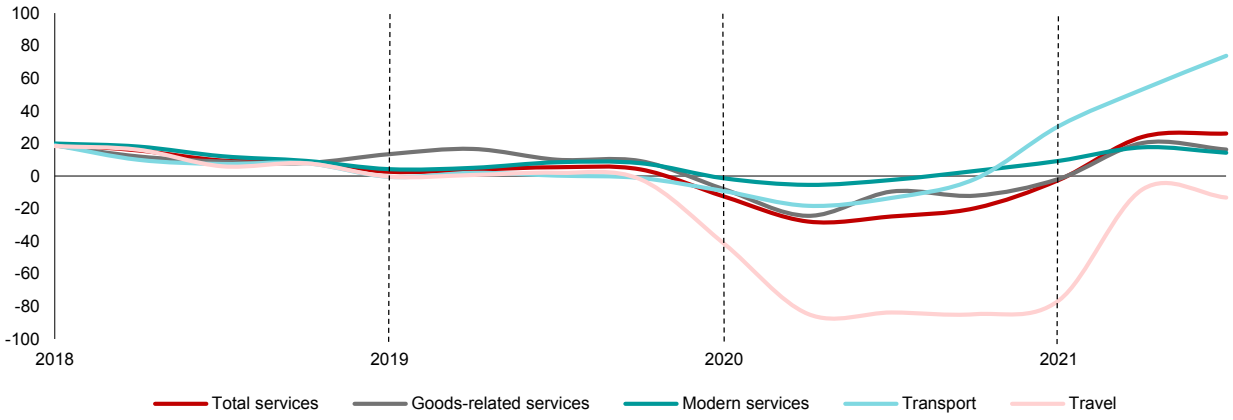
Sources: National authorities via Haver Analytics; and AMRO staff calculations.

The rebound in ASEAN+3 services exports continues to lag that of goods exports. The region's services exports grew by 8.7 percent (year-on-year) in the first half of 2021, a modest recovery after contracting by more than 21 percent during the same period in 2020. The recovery across ASEAN+3 services export sectors is expected to be uneven across sectors (Figure 1.26). The turnaround in travel and tourism exports—a significant growth driver for several regional economies—remains weak and uncertain, given changing travel and mobility restrictions in response to virus outbreaks around the world. Continued stringent travel restrictions in China, a key tourism source market, would also dampen tourism recovery in the region. At the same time, transport and modern services exports—such

as ICT, financial, and professional services—appear to be faring relatively well with recovery clearly underway. The differing speeds of recovery between these two categories of services exports will have significant growth implications on economies in the ASEAN+3 region in the longer run, depending on where their comparative advantage lies (see Chapter 2).

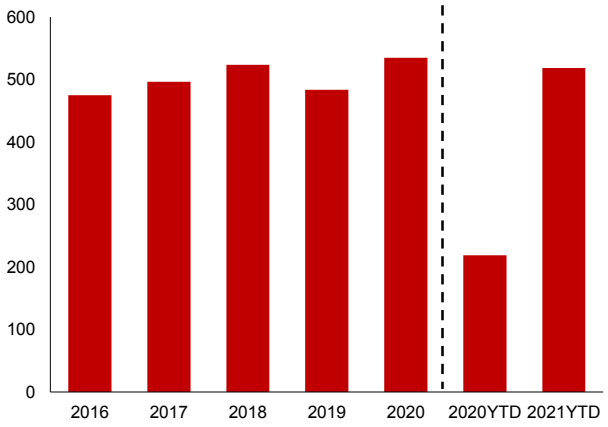
Actual, or realized, foreign direct investment (FDI) flows into the region continued to rise in 2021. Inward FDI flows maintained their upward trend from the second half of 2020, returning to their pre-pandemic levels by the first half of 2021 (Figure 1.27). The broad-based improvement in FDI inflows across subregions was supported by a cyclical pickup in global demand, structural reforms across the region, and the implementation of regional trade agreements. China continued to be the main destination for FDI, accounting for nearly 50 percent of the region's inward FDI inflows in the first half of 2021. FDI to China in the past year has mostly flowed into the services and high-tech sectors, while FDI inflows into the manufacturing sector have been muted by ongoing uncertainties in the global trade environment (Figure 1.28).

Figure 1.26. ASEAN+3: Quarterly Exports of Services by, Category
(Percent, year-on-year)



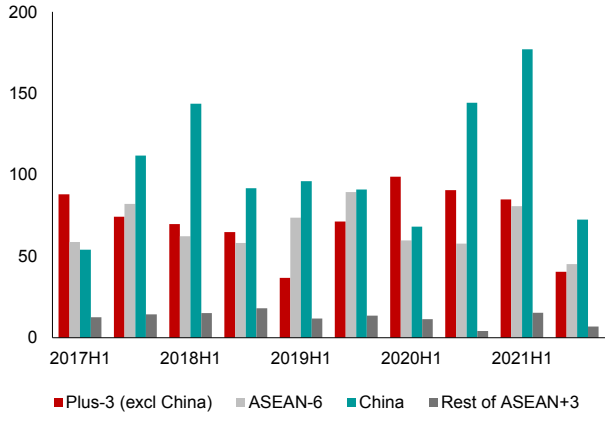
Source: UNCTADstat.

Figure 1.27. ASEAN+3: Foreign Direct Investment
(Millions of US dollars)



Sources: IMF Balance of Payments Statistics data; and AMRO staff calculations.
Notes: YTD = year-to-date. Data refer to the direct investment liabilities item in the balance of payments until Q3 2021, except for Lao PDR (only up to Q2 2021). Excludes Brunei and Myanmar due to unavailability of data.

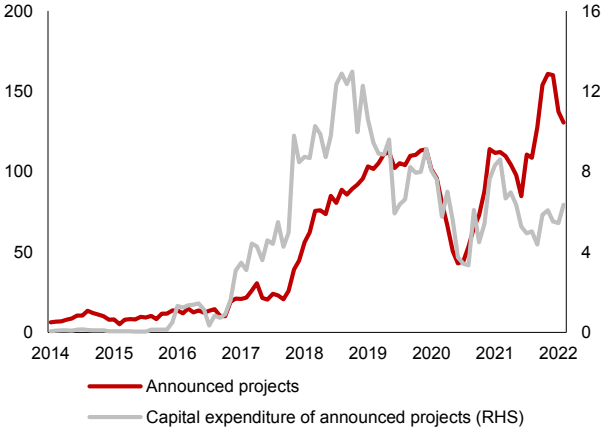
Figure 1.28. ASEAN+3: Foreign Direct Investment, by Regional Grouping
(Millions of US dollars)



Sources: IMF International Financial Statistics; and AMRO staff calculations.
Notes: H1 = first half of the year. Data refer to the direct investment liabilities item in the balance of payments. Plus-3 (excl China) = Hong Kong, Japan, and Korea; ASEAN-6 = Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam; Rest of ASEAN+3 = Cambodia and Lao PDR. Excludes Brunei and Myanmar due to unavailability of comparable data for the first half of 2021 (only up to Q4 2020 and Q3 2020, respectively). Latest bars represent data for Q3 2021, except for Lao PDR (only up to Q2 2021).

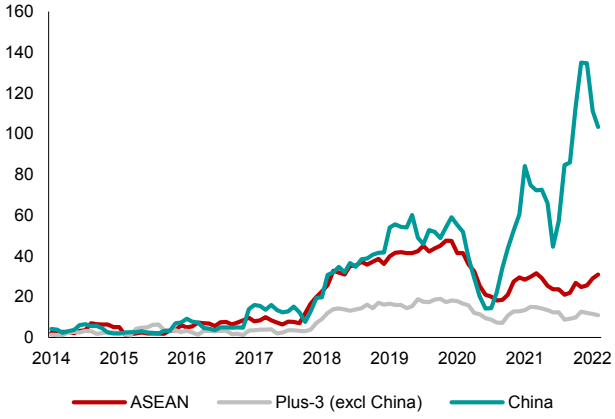
Looking ahead, business confidence in the region as an FDI destination remains positive, considering the uncertainties in the evolving pandemic situation. The number of FDI projects announced in 2021 recovered from the lows seen in the previous year, although the new announced projects appeared to be more modest in value terms (Figure 1.29).[3] Nearly 70 percent of the number of new projects announced in 2021 were destined for the China market, surpassing pre-pandemic levels; these were predominantly retail projects such as consumer electronics and luxury goods stores planned by major international brands in multiple cities (Figure 1.29). FDI project announcements for the rest of the region also picked up in 2021, although for ASEAN economies, in particular, they were not as high as in 2018–19, when trade tensions with the United States under the Trump administration diverted FDI interest from China toward these other locations (AMRO 2020). The manufacturing sector remained a key target of announced FDI projects for the rest of the region excluding China, while service industries such as retail, hotels, sales offices, and research and data centres are also increasingly attracting foreign investor interest—possibly in anticipation of the region's recovery from the pandemic (Figure 1.31).

Figure 1.29. ASEAN+3: Aggregate Inward FDI Announcements
(Number of projects; Billions of US dollars)



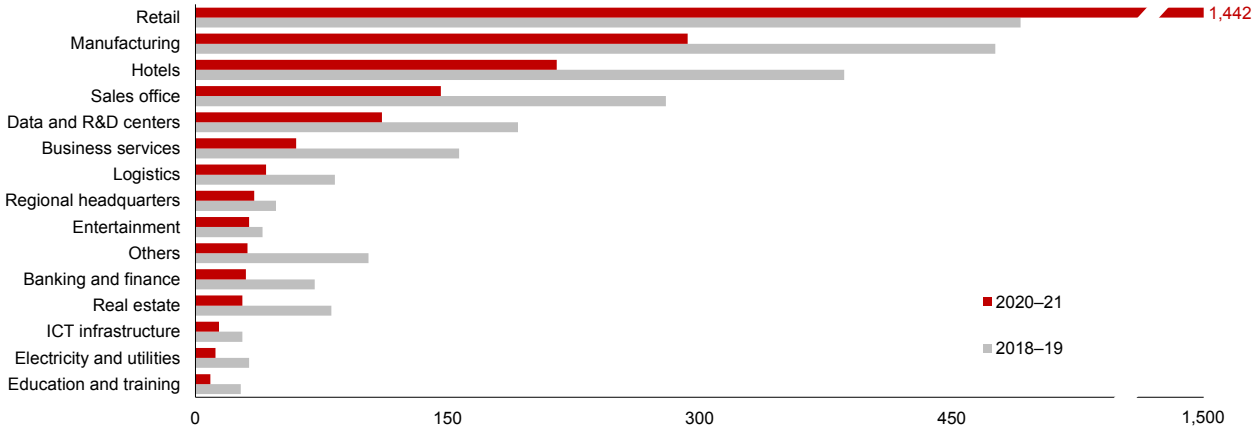
Sources: Orbis Crossborder; and AMRO staff calculations.
Note: FDI = foreign direct investment.

Figure 1.30. ASEAN+3: Aggregate Inward FDI Announcements, by Regional Grouping
(Number of projects)



Sources: Orbis Crossborder; and AMRO staff calculations.
Note: FDI = foreign direct investment. Plus-3 (excl China) = Hong Kong, Japan, and Korea; ASEAN = Brunei, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.

Figure 1.31. ASEAN+3: Aggregate Inward FDI Announcements, by Sector
(Number of projects)



Sources: Orbis Crossborder; and AMRO staff calculations.
Note: FDI = foreign direct investment; ICT = information and communications technology; R&D = research and development.

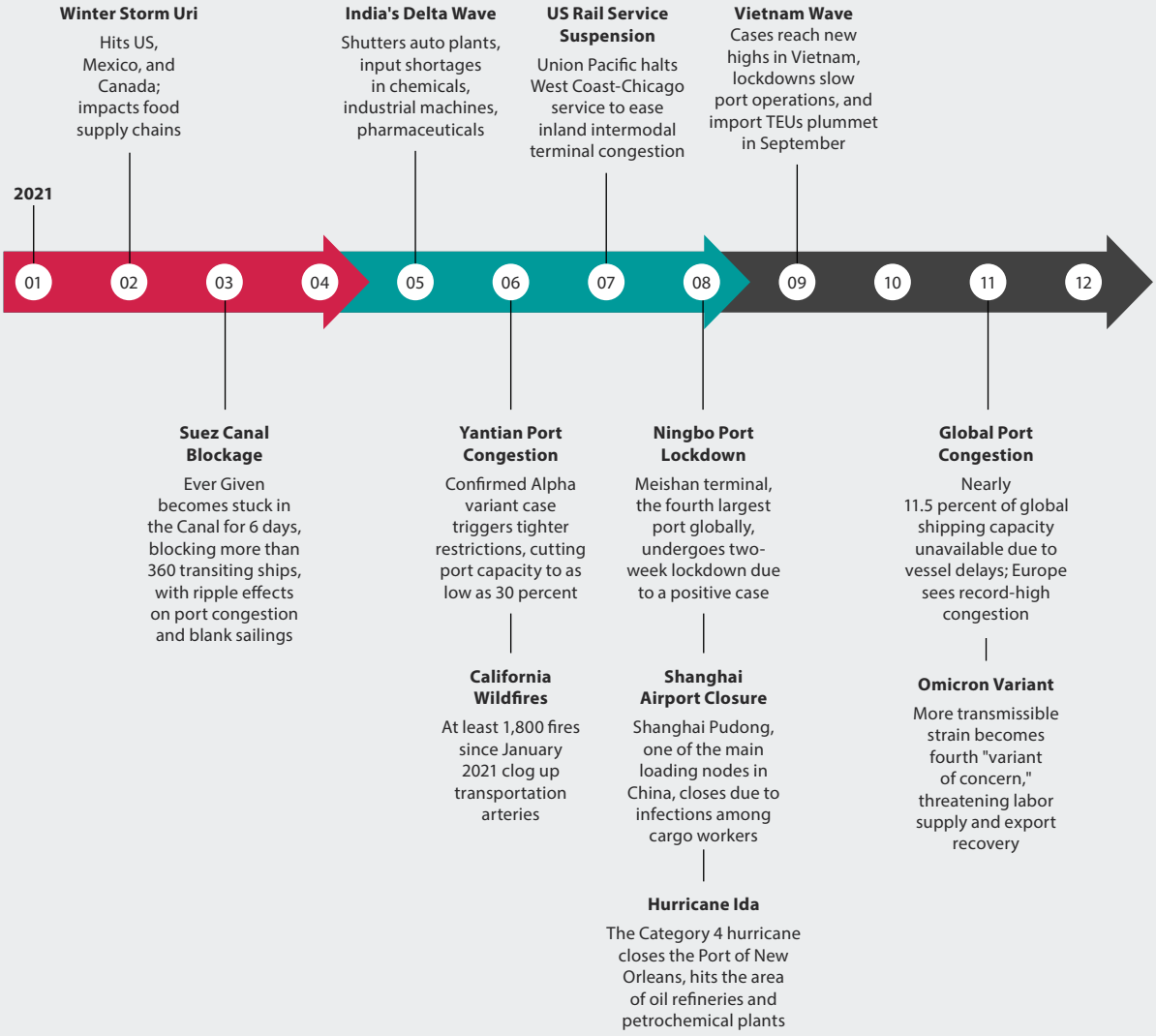
3/ There are four types of FDI project announcements: new projects, expansion projects, relocated projects, and co-located projects (i.e., those that are moved to a location where the investor already has existing business). An FDI project announced in a given year can start in that same year or in a future year; in some instances, an announced project could be subsequently canceled. Orbis data indicate that none of the FDI projects announced for the region in 2020 were canceled.

Box 1.1:

Supply Chain Disruptions: Causes and Implications for the Region

Undoubtedly, the pandemic has highlighted the vulnerability and fragility of global supply chains. While initially impacting trade in medical and other "essential" goods (AREO 2021), the pandemic has since introduced bottlenecks and constraints across supply chains of at least 150 other global industries due to lockdowns, mobility restrictions on workers, and general stoppages in economic activity to control the spread of the virus around the world (Figure 1.1.1). Prolonged supply chain disruptions have key implications for the ASEAN+3 region, depending on the nature of the disruptions and its channels of transmission. The impact has been felt keenly in ASEAN+3 economies which are deeply integrated in regional and global trade activities, are key semiconductor producers, or rely significantly on the shipping and logistics sectors as growth drivers.

Figure 1.1.1. Major Supply Chain Disruption Events in 2021



Sources: SupplyChainDive; and various media reports.
Note: TEU = 20-foot equivalent unit.

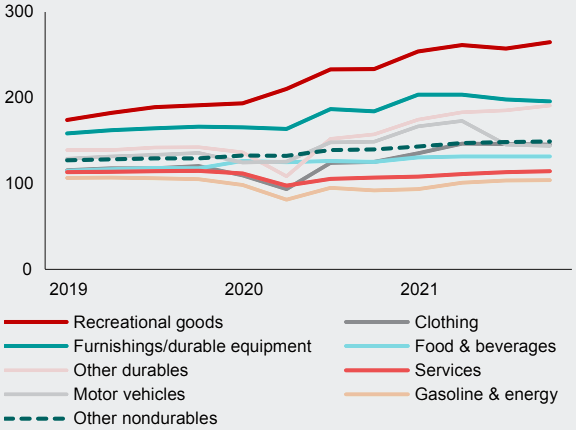
The authors of this box are Diana del Rosario, Marthe Hinojales, and Toàn Long Quách.

The supply chain disruptions that confronted ASEAN+3 economies arose partly from pandemic-driven demand factors. As the pandemic coursed through three different peaks in 2021, consumers around the world stocked up on a variety of goods, demand for which was driven primarily by efforts to resume normal daily activity. Demand for consumer electronic goods (e.g., liquid-crystal display screens, gaming consoles, and audio devices) soared, as did that for home workout equipment, as gaming arcades, gyms, and other fitness centers were closed down or access were restricted. The shift to remote working likewise drove demand for web cameras and work-from-home furniture, as well as headphones and mobile stereo headsets, which led the global consumer electronics market to grow by at least 18 percent year-on-year in the first half of 2021 (GfK 2021). Additionally, unprecedented fiscal stimulus in advanced economies, particularly in the United States, boosted the demand for consumer goods as spending on consumer services remained weak (Fitch Ratings 2021) (Figure 1.1.2). A recent survey by McKinsey and Company (2021) indicated that overall optimism and spending remained strong in nearly half of US consumers, with all income groups recording positive consumer spending between July 2020 and October 2021.

With ASEAN+3 economies highly integrated into the value chains of these commodities, regional exports benefited from the strong demand-side dynamics. Exports quickly rebounded, growing by nearly 45 percent year-on-year by the end of the first half of 2021 (see Figure 1.19). These gains were also reflected in relatively robust Purchasing Managers' indices (PMIs) in the region for new export orders, including for technology equipment (Figure 1.1.3).

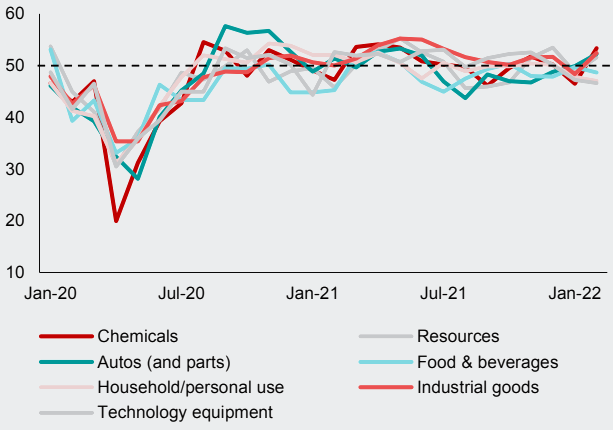
However, the region's manufacturing capacity has not been able to catch up with the growth in consumer demand for a variety of reasons. Port closures, raw material and input shortages, rising freight costs, and infrastructure issues have impeded regional manufacturers' ability to respond to the sudden flood in pandemic-driven demand. The resurgence in new infections due to the Delta variant prompted the re-imposition of automobile factory lockdowns in China's Guangdong and Wuhan areas in the third quarter of 2021, while in Vietnam, suppliers for key multinational enterprises including Samsung, Nike, and Adidas were forced to suspend operations due to community transmission of the virus in their facilities. Labor shortages arose because of required isolation or quarantine times, migrant workers kept out by border closures, or workers unable or unwilling to return to work due to infection or fear of infection.[1] The ensuing global shortages in critical production inputs—notably, semiconductors—further aggravated the situation for some key ASEAN+3 manufacturers. Virus outbreaks in Malaysia,

Figure 1.1.2. United States: Personal Consumption Expenditures, by Major Category
(Index, 2012 = 100)



Source: US Bureau of Economic Analysis.
Note: Data refer to seasonally adjusted quantity indexes. Other durables include jewelry and therapeutic equipment; other nondurables include pharmaceuticals, toys, tobacco, and magazines and newspapers, among others.

Figure 1.1.3. Asia: New Manufacturing Export Orders
(seasonally adjusted, >50 = expansion)



Source: IHS Markit.

1/ Thailand's food processing export sector, for example, is short of the nearly half a million workers that it typically sources from Myanmar (Phoonphongphiphat 2021). In Vietnam, key industrial sites appear to have only half the labor supply they need (Hoang 2021). Foreign-worker restrictions are also increasingly becoming a concern for companies in Singapore and Malaysia.

a key node in semiconductor supply chains, and Vietnam, a major producer of auto parts, forced automakers such as Toyota and Hyundai to cut production, with the former slashing output by as much as 40 percent in 2021 (Zimmerman 2021). A power supply crunch in China in the third quarter of 2021 forced factories to cut production, placing even more strain on global supply chains.

Bottlenecks at major shipping ports where the bulk of internationally traded goods are destined or pass through, also exacerbated the problem. Major ports around the world have been beset by reduced manpower and logistical holdups, leading to recurring port closures and suspension of feeder services, congestion and delays, a shortage of shipping containers, and surging shipping costs (Almendral 2021). With local movement restrictions, labor shortages in port and ancillary logistics services (e.g., truck drivers) hindered the timely loading and unloading of cargo shipments. Outdated port infrastructure in some destinations (e.g., the United States) also hampered productivity. Containers piled up at US and European ports waiting to be unloaded and loaded, with the result that there was a big shortage of containers in Asia for sending goods for export. These bottlenecks were compounded by events unrelated to the pandemic such as the accidental blockage of the Suez Canal in March 2021 and various weather-related natural disasters. The resulting tight shipping capacity caused container freight rates to spike more than five-fold compared to the pre-pandemic period and led to container-vessel delays at major ports in the United States and Europe, as well as the ASEAN+3 region (Figures 1.1.4 and 1.1.6). Globally, container vessel delays and freight rates eased somewhat in the first two and a half months of 2022, although bulker and tanker rates have picked up since the conflict between Russia and Ukraine—two major commodity exporters—broke out in late February 2022 (Figure 1.1.5).

The overall impact of these disruptions on ASEAN+3 has been negative. For economies that are key players in the global shipping industry—like the Plus-3—higher shipping costs have translated to booming profits for cargo shipping companies, despite reduced transport volumes; however, this is unlikely to have spilled over to the rest of the economy. Elsewhere in the region, persistently high freight costs could eventually lead to higher domestic prices. The longer shipping costs remain elevated, the greater the risk of pass-through to consumer prices.

AMRO staff's assessment is that global supply chain disruptions likely peaked at the end of 2021. Demand for imported consumer goods from advanced economies is likely to moderate in 2022 after the pent-up pandemic spending last year, and as consumption shifts toward consumer services with the removal of pandemic restrictions. While shipping rates are likely to remain elevated until next year, an increase in inventories in some sectors, in particular in the United States, could help ease the demand for shipping and logistics (Boata and others 2021). The shortage on the semiconductor front will likewise be helped—if not entirely addressed—by record-high investment spending to boost production this year, as in the case of TSMC. Labor shortages in the ASEAN+3 are being addressed through fast-tracked vaccinations, shorter isolation requirements, and relaxation in foreign worker entry restrictions.

Figure 1.1.4. Container Freight Rate and Global Container Vessel Turnaround Time
(Index, 2019 = 100)

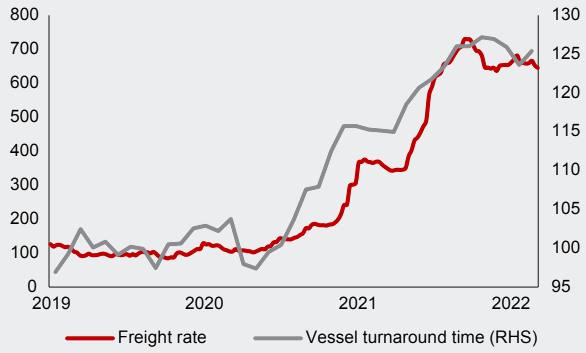
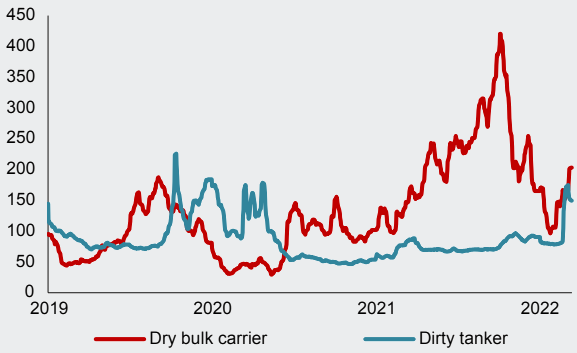
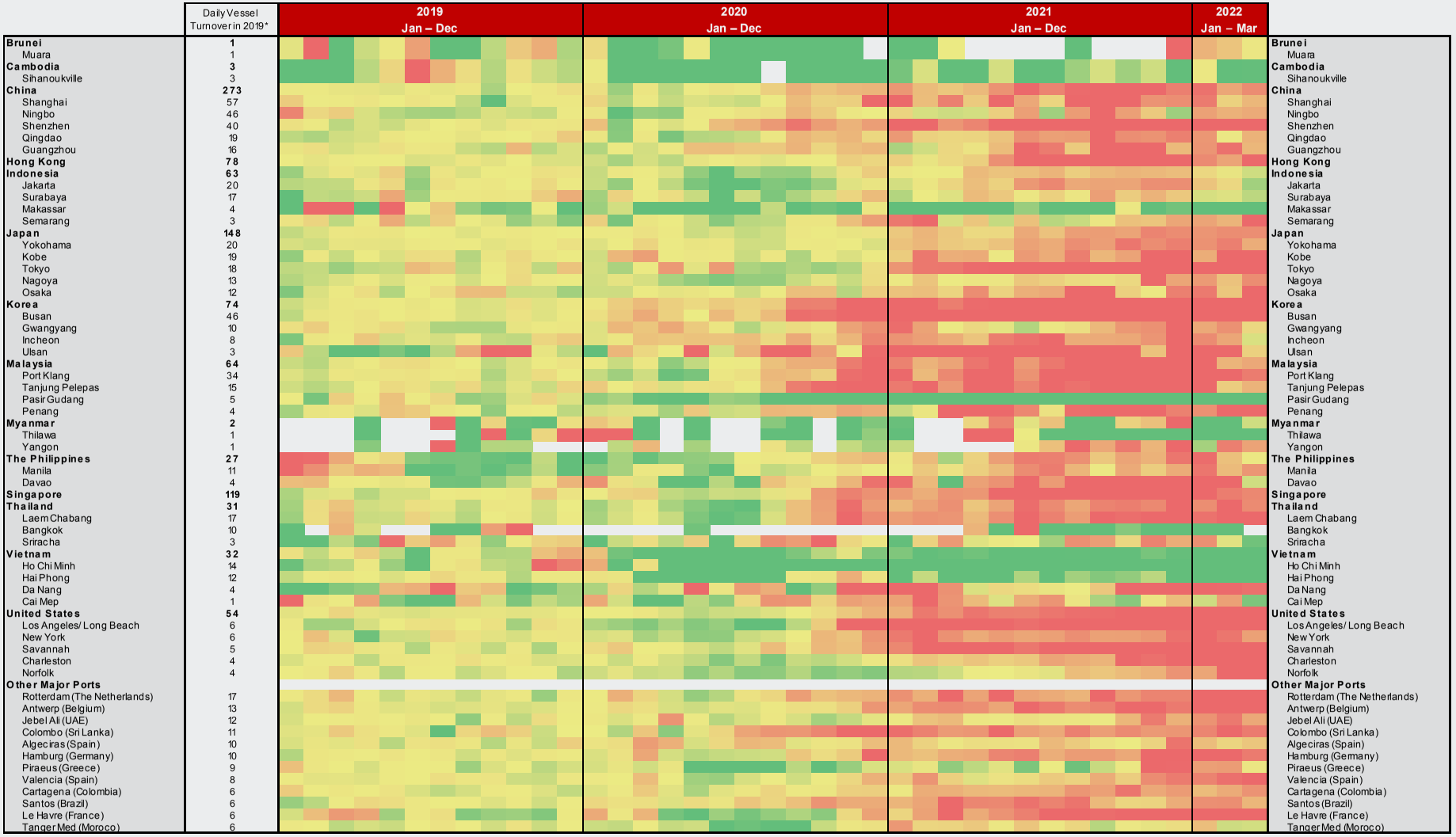


Figure 1.1.5. Dry Bulk and Tanker Freight Rates
(Index, 2019 = 100)



Sources: Bloomberg Finance L.P. (accessed on March 15, 2022); and AMRO staff calculations.
Note: Container freight rate refers to the World Container Index, a weighted average by volume of the spot container freight rates of a 40-foot container box for eight major East–West trade routes. Dry bulk carrier rate refers to the Baltic Dry Index, which tracks freight rates for bulk commodities such as coal, iron ore, and grade. Dirty tanker rate refers to the Baltic Dirty Tanker Index, which tracks freight rates for crude oil.

Figure 1.1.6. ASEAN+3 and Selected Economies: Vessel Turnaround Time at Major Container Ports
(Index, 2019 = 100)



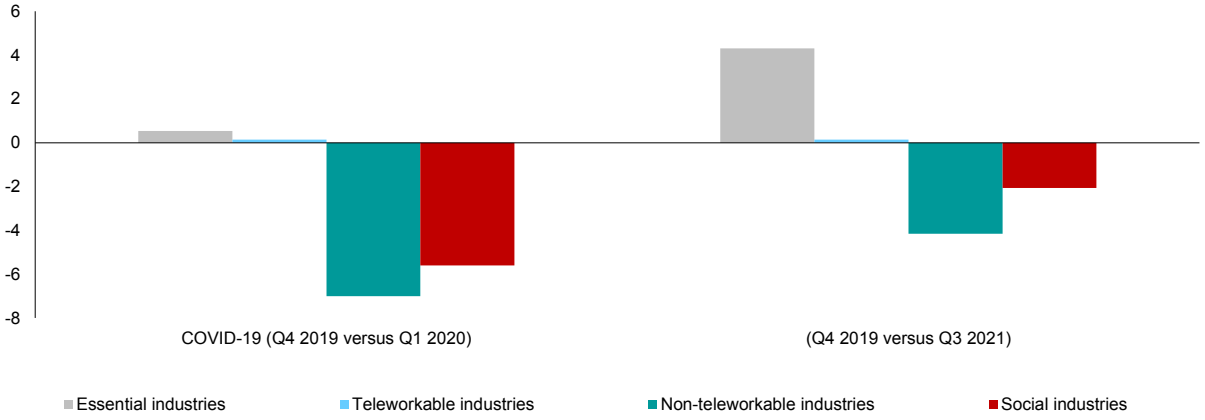
Sources: MarineTraffic; and AMRO staff calculations.
Note: Asterisk (*) refers to the average number of container vessels that arrived and departed said port within a day in 2019, before the pandemic. Empty cells denote that no container ship was recorded for the month. The heatmap includes only container ships with a carrying capacity of more than 2,000 twenty-foot equivalent units (TEUs), which tend to be involved in international trade. Red, yellow, and green refer to the 90th, 50th, and 10th percentiles, respectively, of the vessel turnaround time (2019 = 100) at the ports featured in the heatmap.
UAE = United Arab Emirates

Pockets of Unemployment Remain

The region's labor market recovery remains very uneven and far from complete, despite extraordinary policy support and a remarkable degree of adaptation to the pandemic "new normal." Even though headline unemployment rates across the region have fallen from their peaks during the lockdown recession of 2020, they are still higher than in the pre-pandemic period. The pandemic has had a differential impact on unemployment, with some industries more severely affected than others. High-contact social industries, in particular, have borne the brunt of the job losses, together with industries such as mining, manufacturing, and construction, where the majority of jobs are not amenable to telework. Encouragingly, relative to the pre-pandemic period (i.e., the fourth quarter of 2019), these job losses appeared to have eased in the third quarter of 2021, compared to the first quarter of 2020 (Figure 1.32). Empirical estimates using labor market surveys suggest that employment in high-contact social industries will continue to lag for some time whereas employment in essential industries (including utilities, ICT, and health) will see continued gains (Box 1.2).

The outlook for the region's labor markets remains challenging. While vaccine rollouts have raised hopes of economic recovery, renewed infection waves have caused containment measures to be reinstated in several economies. The unpredictable easing and tightening of restrictions has been disruptive to firms and workers and could have longer-term ramifications for worker dislocation and/or detachment (see Chapter 2). In addition, many migrant workers returned to their home countries after being laid off. While some have remigrated, others were displaced or decided to stop working abroad. As a result, inward remittances in the region continue to remain sluggish. This development stands in sharp contrast to the remittance flows during the global financial crisis when inbound earning transfers by overseas employees were resilient despite migrant destination economies going into recession (Choo and Oeking 2020). Over the longer term, the pandemic could worsen income distribution in the region and amplify social inequality (Jurzyk and others 2020).

Figure 1.32. Selected ASEAN+3: Change in Employment, by Industry, 2020–21
(Percentage points)



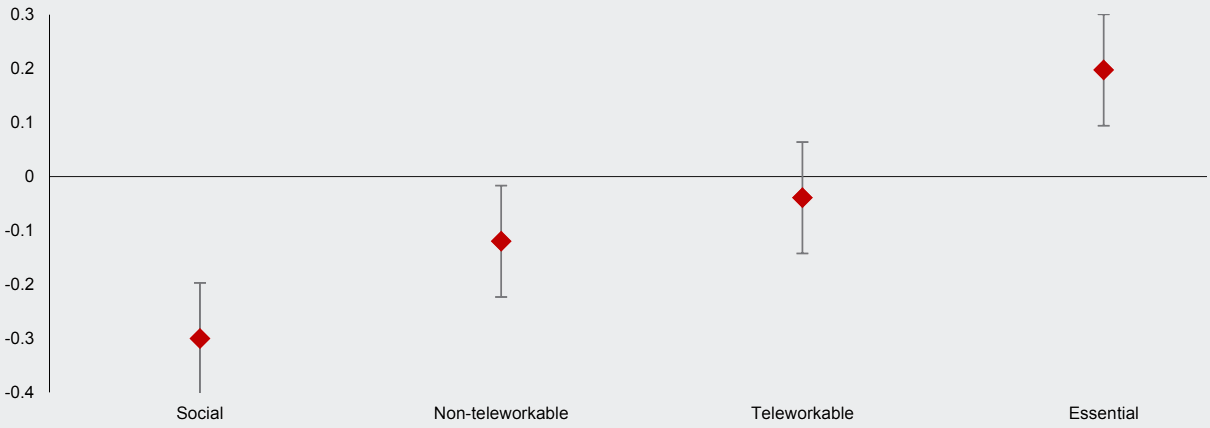
Sources: National authorities via Haver Analytics; and AMRO staff calculations.
Note: Selected ASEAN+3 refers to Hong Kong, Indonesia, Japan, Korea, Malaysia, the Philippines, Singapore, Thailand, and Vietnam. Calculations are based on seasonally adjusted employment data by industry, with series starting from Q1 2005 to Q3 2021. Essential industries refer to utilities, transport, information and communication, and health and public administration. Social industries refer to wholesale and retail, hotels and restaurants, and arts and entertainment. Non-teleworkable industries refer to mining, manufacturing, and construction. Teleworkable industries refer to finance, professional services and education. Given the volatile nature of agricultural employment data, the agriculture industry is excluded from the analysis.

Box 1.2:

The Pandemic's Impact on Employment in Different Industries

Empirical estimations using labor market surveys corroborate the differential impact of the pandemic on industry employment rates. Impulse response functions estimated using Jordà's (2005) local projection method on a sample of 15 industries across selected ASEAN+3 economies over the period from January 2006 to June 2021 suggest a significant and differentiated impact on industry employment rates in the 24 months following the pandemic shock. The cumulative differential response of changes in the employment rate following the pandemic shock is clearly negative for social and non-telework industries and positive for essential industries (Figure 1.2.1). The dynamic impulse response functions suggest that high-contact social industries would see a cumulative differential 0.3 percentage point decline in their employment rate over 24 months.[1] In contrast, the corresponding response for essential industries is +0.2 percentage points, which is consistent with the robust job creation observed to date in the utilities, ICT, and health industries.

Figure 1.2.1. Selected ASEAN+3: Cumulative Differential Response of Changes in Employment Rate to COVID-19 Shock, by Industry
(Percentage points)



Sources: National authorities via Haver Analytics; and AMRO staff estimates.
Notes: The figure shows coefficient estimates in cumulative terms over a 24-month horizon, with the corresponding one standard error bands around the point estimates. The regression specification is: $g_{jit} = a_{ij} + \gamma_{it} + \rho_{ji} + \sum_{k=0}^{l} \delta_k S_j C_{i,t-k} + Controls + \varepsilon_{jit}$ where the dependent variable g_{jit} is the change in employment rate for sector j in country i at time t; C_i is the stringency of containment measures in country i; S_j is sector j's exposure to COVID-19 (proxied by dummies for social, essential, and teleworkable industries); a_{ij} are country-industry fixed effects, to control for industry-specific factors, including cross-country differences in the growth of certain sectors that could arise from differences in comparative advantage; γ_{it} are country-month fixed effects, to control for any variation that is common to all sectors of a country's economy, including economy-wide reforms and macroeconomic shocks; and ρ_{ji} are industry-time fixed effects, to control for factors affecting specific industries that are common across countries. Standard errors are clustered at the country-industry pair level. Data are seasonally adjusted. Essential industries refer to utilities, transport, information and communication, and health and public administration. Social industries refer to wholesale and retail, hotels and restaurants, and arts and entertainment. Non-teleworkable industries refer to mining, manufacturing, and construction. Teleworkable industries refer to finance, professional services and education. Given the volatile nature of agricultural employment data, the agriculture industry is excluded from the analysis.

The author of this box is Anthony Chia Kiat Tan.

1/ Differential change refers to the change relative to the sample average.

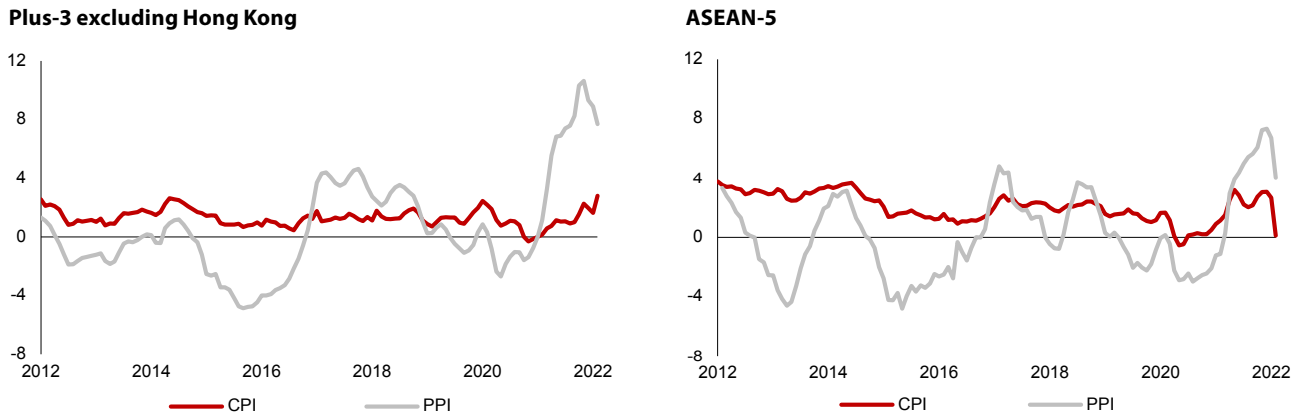
Inflation Stays Low, So Far

Global commodity prices surged in 2021 due to supply chain bottlenecks and strong demand recovery in major advanced economies and China (Kho and others 2021). Oil prices have been kept high by production cuts in OPEC+ countries but could come down as OPEC+ gradually moves toward full production and US shale production recovers (IEA 2022).[4]

In the ASEAN+3 region, supply constraints, coupled with strong export demand, led to a sharp increase in producer prices in 2021. Producer price indices (PPIs) rose across the region—to decade-high levels in the Plus-3 economies. Transportation, especially shipping, prices increased due to global supply chain bottlenecks, while input costs for resource-based manufactured goods, such as chemicals and chemical products, plastics, and rubber gloves increased due to higher commodity prices (Box 1.1; Box 1.3).

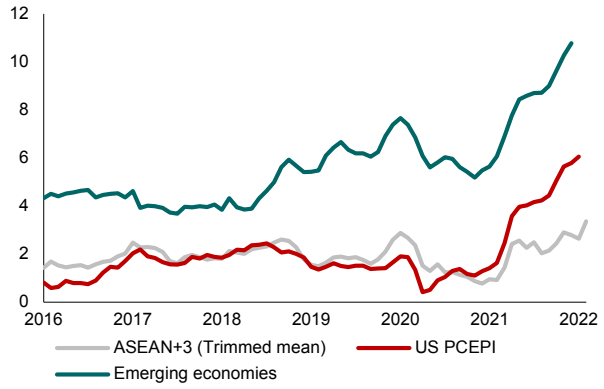
The increase in PPI inflation has not translated into higher consumer price inflation, which remains low relative to other advanced and emerging market economies (Figures 1.33 and 1.34). The deviation of producer and consumer price inflation in the region is due mainly to the different baskets of goods covered by the PPI and the consumer price index (CPI) and still-weak consumption demand. The relatively restrained increase in CPI inflation in the region relative to the rest of the world is attributable in part to the decoupling of the region's food prices from global food prices in recent years, as well as policy interventions such as food price ceilings and subsidies for food, energy, and consumer products, by governments in the region (Figure 1.35) (Jongwanich, Wongharoen, and Park 2016).

Figure 1.33. Selected ASEAN+3: Producer and Consumer Price Inflation
(Percent, year-on-year)



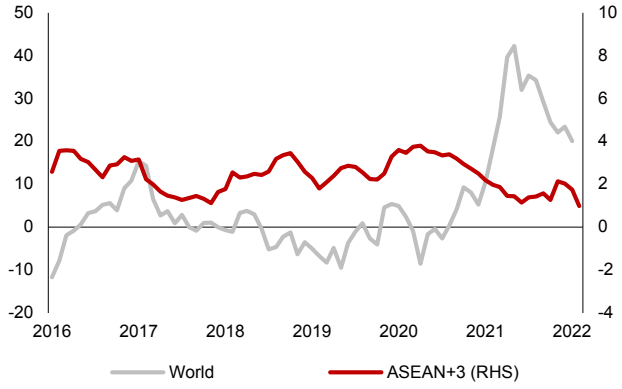
Sources: National authorities via Haver Analytics; and AMRO staff calculations.
Note: Hong Kong is excluded as monthly PPI data are unavailable. Plus-3 excluding Hong Kong = China, Japan, and Korea; ASEAN-5 = Indonesia, Malaysia, the Philippines, Singapore, and Thailand. Aggregate CPI and PPI are calculated as a simple average of individual economy's data series. CPI = Consumer Price Index; PPI = Producer Price Index.

Figure 1.34. ASEAN+3 and Selected Economies: Consumer Price Index
(Percent, year-on-year)



Sources: National authorities via Haver Analytics; Haver Analytics; and AMRO staff calculations.
Note: US = United States; PCEPI = Personal Consumption Expenditure: Chain-type Price Index. Trimmed mean refers to the simple average of the consumer price index for ASEAN+3 economies after excluding the highest and lowest 15th percentiles of data.

Figure 1.35. ASEAN+3 and World: Food Prices
(Percent, year-on-year)



Sources: IMF International Financial Statistics; national authorities via Haver Analytics; and AMRO staff calculations.
Note: Food prices refer to the Food and Beverage sub-index of the IMF World Commodity Price Index.

4/ OPEC+ refers to OPEC member countries and 10 other oil-exporting nations, including Russia and Kazakhstan. The coordinated production cut throughout 2021 was announced in December 2020. In January 2022, OPEC+ agreed to raise its output target by 400,000 barrels per day from February 2022 to meet rising global oil demand.

Box 1.3:

Potential Spillovers from China's Domestic Policies to Other ASEAN+3 Economies

As the largest economy in the ASEAN+3 region, China's domestic policies can have a potentially significant, if unintended, impact on the rest of the region. This box highlights two examples that came into focus during 2021: China's "three red lines" for property developers and China's carbon-neutrality goal. Our analysis concludes that while spillover effects on the region attributable to these policies were limited in 2021, they bear watching in 2022 and beyond as developments unfold in China.

Will China's property sector policies affect the region's financial stability and growth?

China rolled out the "three red lines" policy in January 2021 to foster the healthy development of the real estate sector and safeguard financial stability. The property market has been a main pillar of China's economic growth since homeownership was privatized in 1998. But in recent years, soaring land and house prices and credit to property developers began to raise concerns that the real estate sector could pose a danger to financial stability. The "three red lines" were designed to cap developers' debt growth by specifying tighter new criteria they would have to meet for access to financing: a liability to asset ratio (excluding advance receipts) of less than 70 percent; a net gearing ratio of less than 100 percent; and a cash to short-term debt ratio of more than one. At the same time, to guard against over-lending to the property sector, China's financial regulators also imposed caps on banks' outstanding property loans and mortgages as a proportion of total loans.

In the latter part of 2021, international financial markets were roiled by concerns over a possible default by the highly leveraged Evergrande Group, China's second-largest property developer (by sales). On September 23, 2021, Evergrande missed an interest payment on a 2 billion US dollar-denominated bond, triggering rumors of default and possible contagion in international financial markets. However, the company managed to make an eleventh-hour interest payment to stay afloat until early December when it announced in a filing that it could not guarantee being able to meet its financial obligations. On December 9, 2021, Fitch Ratings downgraded Evergrande and its subsidiaries to "restricted default"; eight days later, S&P Global Ratings officially declared Evergrande in default.

In the region's financial markets, spillovers from the Evergrande case have been limited, although contagion risks may bear watching. According to Ong and others (2021), the risk of spillovers to the region from real and perceived relationships with Evergrande is low because: bank loans for Evergrande's projects are predominantly from local banks, typically secured by land or other collateral; major international banks with significant emerging-market businesses and a dominant presence in Hong Kong reportedly have limited direct exposure to Evergrande; and there are no Evergrande projects of note in the ASEAN region. However, financial markets may remain jittery due to concerns about contagion from Evergrande's problems to other listed real estate firms whose debt is at risk, including some which, unlike Evergrande, have expanded into Southeast Asia in recent years (Ong and others 2021; Aw 2021).[1] It would be important for the Chinese authorities to mitigate any contagion risk that may arise from the failure of nonviable developers and ensure their orderly exit.

Of greater concern is the prospect that "overcooling" in the property sector could weigh significantly on China's overall growth, which would have negative spillovers in the region. As the property market began to lose momentum due to the tightening policies and lower demand, growth in land transactions turned negative and land premiums declined through most of 2021 (Figure 1.3.1). Property sales and new floor space also started to decrease: the two-year average growth rate of property investment dropped to 6.4 percent in

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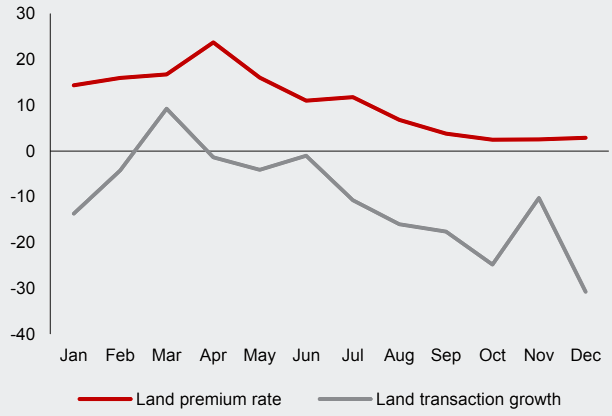
The author of this box is Hongyan Zhao.

1/ In addition to Evergrande, Kaisa Group, Fantasia Holdings, and Modern Land (China) all made headlines in 2021 over their failure to repay onshore and foreign creditors.

November 2021 from 9.9 percent in 2019 (Figure 1.3.2). On average, property fixed investment accounts for about 20 percent of total fixed-asset investment in China; considering the upstream and downstream links, the total contribution of the property sector to total GDP is estimated to be about 29 percent (Rogoff and Yang 2021). With property investment growth expected to continue to moderate in 2022, this would contribute to lower GDP growth in China and, potentially, the rest of the region—according to Del Rosario and Vu (2020), a 1 percent decline in China's GDP over a year is associated with a 0.8 percent decline in the output of ASEAN-5 and Plus-2 economies on average, with the estimated effect ranging from –1.9 percent for Singapore to –0.2 percent for Indonesia.[2]

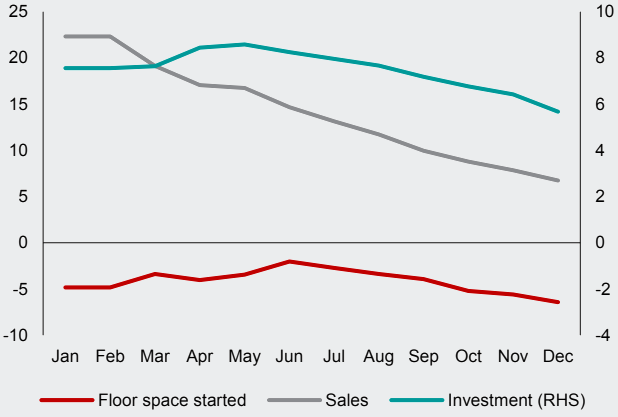
Recent tweaks by China to its property sector financing policies could help to reduce this risk. While the Chinese authorities are (rightly) expected to stand firm on policies to curb excess borrowing by property developers, they have introduced some flexibility in the rules to avoid over-tightening the sector and penalizing normal or legitimate developers, home buyers, and business activities. Ultimately, a steady and sustainable development of the property sector in China would have positive spillovers for the region.

Figure 1.3.1. China: Growth in Land Transactions and Land Premium Rates in 100 Major Cities, 2021
(Percent; percent, year-on-year)



Sources: Wind; and AMRO staff calculations.
Note: The growth rates of land transactions are calculated as two-year averages for 2020 and 2021.

Figure 1.3.2. China: Growth in Property Sales, Investment, and Floor Space Started, 2021
(Percent, year-on-year)



Sources: Wind; and AMRO staff calculations.
Note: The growth rates are calculated as two-year averages for 2020 and 2021.

Could China's carbon-neutrality goal cause sustained inflationary pressures in the region?

China's ambitious carbon pledges at the United Nations (UN) in September 2020 have made energy consumption control a high priority nationwide.[3] Efforts to control energy consumption had started as early as 2015 when China adopted the dual control system to reduce energy intensity (energy consumption per unit of GDP) and limit total energy consumption for ecological and environmental protection.[4] The dual control system sets annual targets for the reduction of national total energy consumption and energy consumption intensity, breaks down the targets to various regions, and conducts strict assessments at the end of every year.[5] Thanks in part to this system, China has been able to steadily bring down its energy intensity level. The dual control system has taken on added significance since the fall of 2020 when President Xi Jinping pledged that the country would peak carbon dioxide emissions by 2030 and be carbon neutral by 2060.

2/ Li and Liu (2018) find weaker spillover effects, namely that a 1 percentage point drop in China's GDP growth will lead to a 0.1–0.6 percent decline in ASEAN's GDP.

3/ Other major economies and the European Union had also made climate commitments, but China's announcement was noteworthy for giving fresh impetus to the UN's efforts to galvanize action on the climate crisis amid the COVID-19 crisis and then-President Trump's decision to withdraw the United States from the Paris Climate Accords.

4/ The energy-intensity target has a longer history that dates back to the 11th Five-Year Plan (2006–10).

5/ The 13th Five-Year Plan (2016–20) required that by 2020, energy intensity would be reduced by 15 percent compared with 2015, and total energy consumption would be under 5 billion tons of standard coal.

Late last year, limitations on energy use contributed to power crunches in several regions in China that curbed production and drove up prices of major raw materials. In August 2021, China's National Development and Reform Commission (NDRC) issued a status report for the first half of the year warning that several regions were not on track to meet their energy intensity-reduction targets.[6] Soon after that, some provinces that received progress alerts started to employ power rationing and production curbs on high energy-consuming industries. The power rationing came on top of challenges to the electricity supply caused by severe weather conditions and high coal prices, and the rising demand for electricity due to economic recovery. The resulting power shortage aggravated the shortages caused by reductions in the production of major raw materials such as steel, copper, coke, and aluminum, pushing up their prices and, correspondingly, China's producer price index (PPI) (Jiao 2022) (Figures 1.3.3 and 1.3.4).

The price hikes impacted PPIs in the region, but the impact is expected to moderate after China implemented short-run measures to alleviate the power shortage. China accounts for a large share of global production of major metal products such as raw steel, aluminum, copper, lead, and zinc (Figure 1.3.5), whose prices soared due to the reduction in supply. PPIs in other ASEAN+3 economies—notably, Indonesia, Malaysia, and Thailand—rose commensurately, reflecting the raw materials' shares in their industrial production (Figure 1.3.6). However, the PPI increase in China moderated soon after the authorities took various measures to guarantee the coal supply and boost power generation, and the impact on PPIs in the region is expected to abate as well.

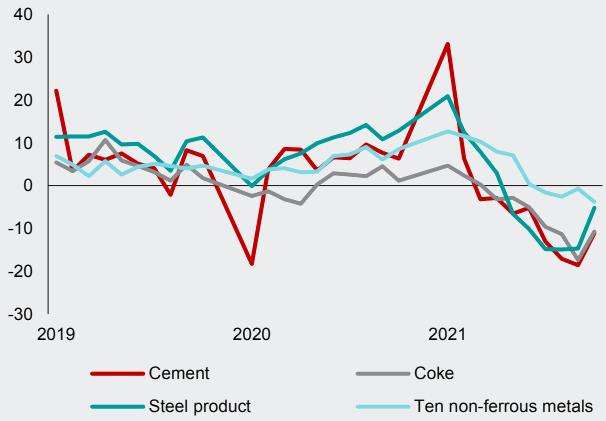
Nevertheless, going forward, the region's economies would do well to prepare for possible spillover effects on metal and other raw material prices from China's transition to meet its climate and energy goals. The energy-intensive raw materials sector has long served as a foundation for China's economy, but it is coming under increasingly strong regulation to curb carbon dioxide emissions in support of the country's carbon neutrality goal. In November 2021, the NDRC introduced a new set of energy consumption benchmarks to improve energy efficiency and reduce emissions in five high energy-consuming industries including steel, cement, and chemicals in the raw materials sector. The 14th Five-Year Plan (2021–25) envisions a 13.5 percent reduction in energy intensity by 2025. These are challenging targets (Zhai and Foo 2022) and while the sort of power rationing that occurred in the fall of 2021 should be less likely as provincial authorities adopt a more forward-looking approach in managing their energy use profile, the region should be prepared for potential spillover effects on PPI inflation as China slows down the production of bulk raw materials to meet its carbon neutrality goal.

The potential nature and extent of spillovers could be varied. As China slows down the production of bulk raw materials to meet its carbon neutrality goal, the price of energy inputs for raw materials production can be expected to drop while raw materials prices can be expected to rise. Regional economies that import raw materials from China can expect to face a deterioration in their terms of trade and inflationary risks,[7] while the inflationary risk would be lower for economies that produce or export the same raw materials as China (such as Indonesia, which is a net exporter of coal). More broadly, from a financial standpoint, the transition process in a large economy such as China could be accompanied by fluctuations in global commodity and raw material futures and options markets, financial risks from stranded assets especially in the power generation sector, and "green bubbles" from excessive investment in renewable energies—which could potentially contribute to financial market uncertainties in the region.

6/ Nine regions received "first-level" alerts after their energy intensity increased; 10 regions received "second-level" alerts after their energy intensity decreased less than the proposed targets (Kong and Li 2021).

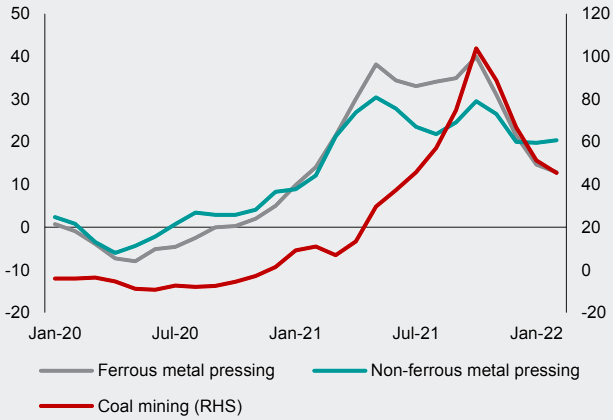
7/ Imports may be partially compensated by domestic production, the extent to which depends on different economies' capacities of producing those raw materials.

Figure 1.3.3. China: Production of Major Raw Materials
(Percent, year-on-year)



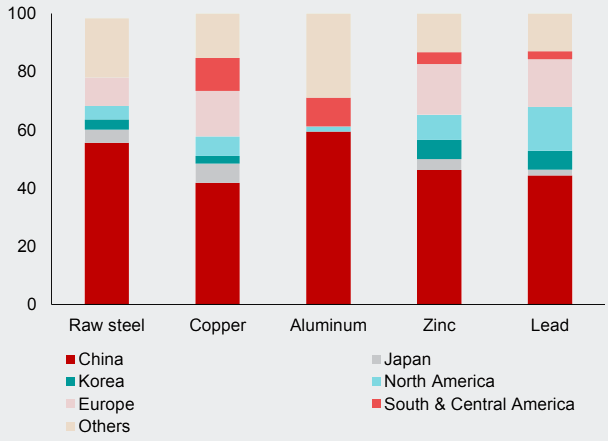
Source: Wind.
Note: Ten non-ferrous metals include copper, aluminum, lead, zinc, nickel, tin, antimony, magnesium, titanium, and mercury.

Figure 1.3.4. China: Producer Price Index in Selected Industries
(Percent, year-on-year)



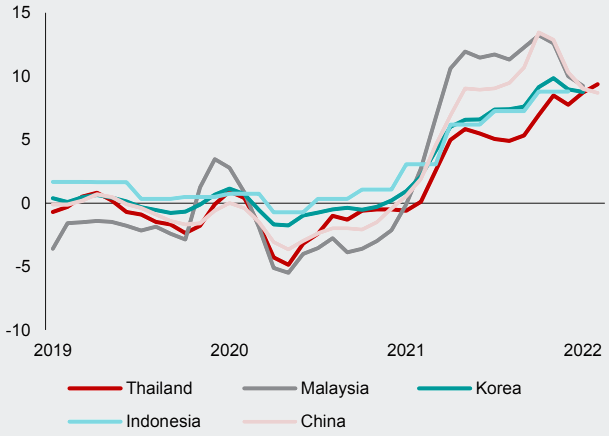
Source: CEIC; and AMRO staff calculations.

Figure 1.3.5. China: Share of World Production of Selected Metals, 2020
(Percent)



Sources: Bloomberg Finance L.P., US Geological Survey; and AMRO staff calculations.
Note: Copper, zinc, and lead are refined. Aluminum is smelter-grade.

Figure 1.3.6. Selected ASEAN+3: Producer Price Index
(Percent, year-on-year)



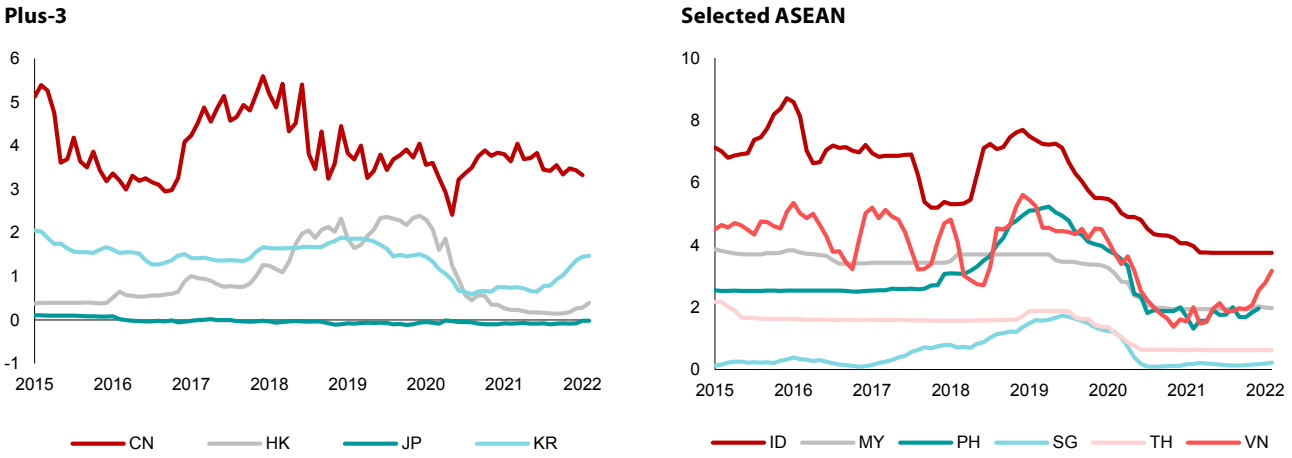
Sources: National authorities via Haver Analytics; and AMRO staff calculations.
Note: Data are up to January 2022 for China and Thailand; December 2021 for Korea, Malaysia, and Indonesia.

Credit Conditions Vary across the Region

Credit growth in the region has been generally firm. Both household and nonfinancial corporate borrowing have increased during the pandemic. The deployment of monetary easing measures to ensure liquidity in financial markets and regulatory forbearance to support banks' balance sheets has allowed banks to restructure or roll over their existing loans to businesses and households and avoid a decline in loan growth and a sharp rise in nonperforming loans (NPLs). Interbank and deposit rates are at historically low levels in most economies (Figures 1.36 and 1.37), helping to keep borrowing costs affordable for households and businesses (Figure 1.38). Outstanding household and corporate debt has continued to rise at different rates across the region (Figures 1.39 and 1.40). Debt levels have continued to increase markedly in the Plus-3 economies, but the increases have been more moderate and disparate in the ASEAN economies, reflecting dissimilar degrees of financial and policy support provided to the household and corporate sectors. In Korea, concerns about rising inflation and household debt prompted the central bank to raise interest rates in November 2021, and in China, concerns about developments in the property sector prompted the authorities to impose stricter regulations on leverage for property developers.

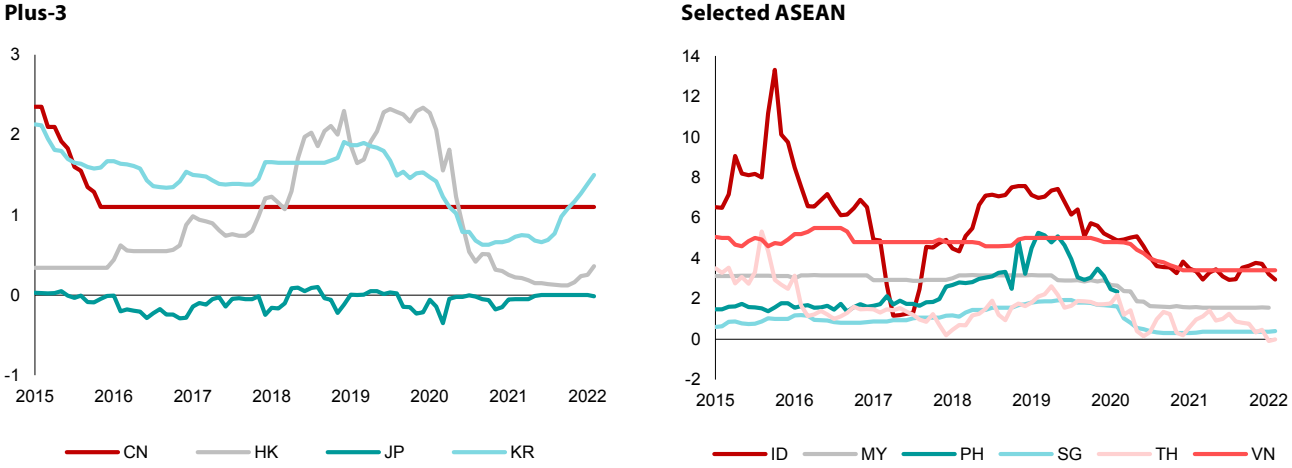
At the time of writing, ASEAN+3 economies are in different phases of their respective credit cycles. Credit growth is recovering in the ASEAN-4 and Vietnam, in tandem with the recovery in economic activity (Figure 1.41). Hong Kong, Korea, and Singapore are in the expansionary phase of their credit cycle, driven mainly by strong demand for mortgage loans amid robust growth in the property sector (Figure 1.42). Japan continues to implement the large lending schemes introduced at the onset of the pandemic, although the amount of new lending under the schemes has slowed reflecting lower precautionary

Figure 1.36. Selected ASEAN+3: 3-Month Interbank Rates
(Percent)



Sources: National authorities via Haver Analytics; and AMRO staff calculations.
Note: CN = China; HK = Hong Kong; ID = Indonesia; JP = Japan; KR = Korea; MY = Malaysia; PH = the Philippines; SG = Singapore; TH = Thailand; VN = Vietnam.

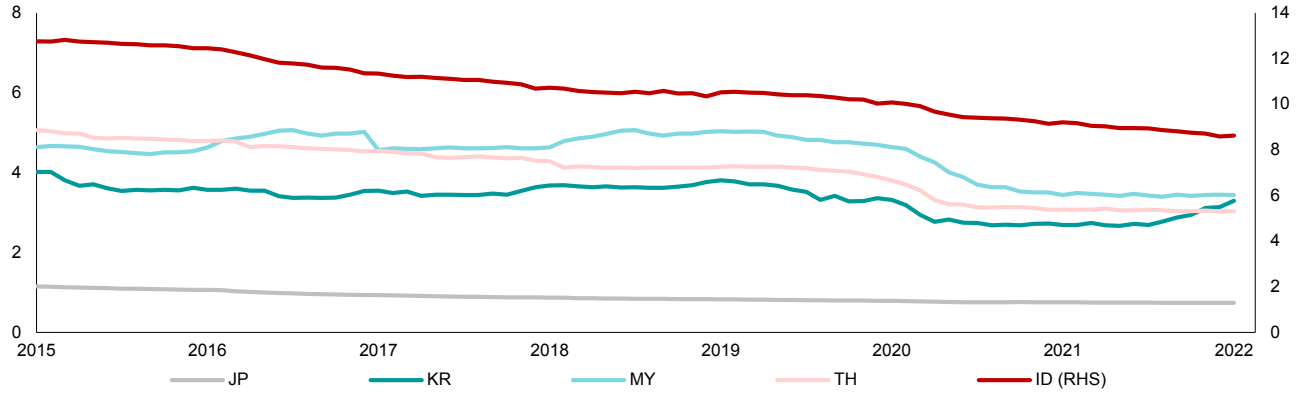
Figure 1.37. Selected ASEAN+3: 3-Month Deposit Rates
(Percent)



Sources: National authorities via Haver Analytics; and AMRO staff calculations.
Note: CN = China; HK = Hong Kong; ID = Indonesia; JP = Japan; KR = Korea; MY = Malaysia; PH = the Philippines; SG = Singapore; TH = Thailand; VN = Vietnam. Deposit rates data for PH have been unavailable since 2020 due to the suspension of bank report submissions under the New Economy Arrangement.

liquidity demand. The slower extension of credit in China is due to the tightening of regulatory measures, as well as the overall deleveraging policy that has been in place since 2020. Brunei and Lao PDR are also experiencing slower credit growth, reflecting more subdued credit demand amid a prolonged COVID-19 outbreak in the second half of 2021. Credit growth in Myanmar, as measured by quarter-on-quarter growth, turned negative in the second quarter of 2021 following the declaration of the state of emergency in February 2021.

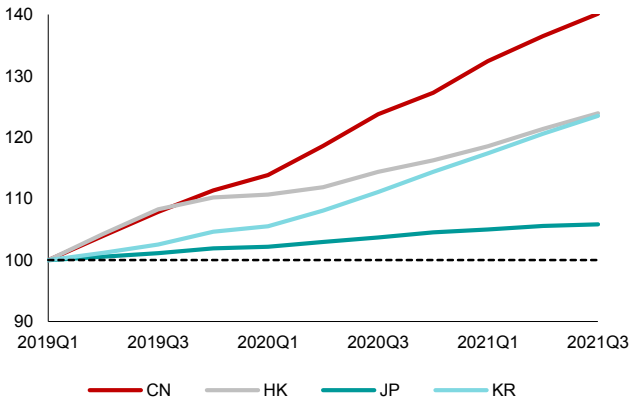
Figure 1.38. Selected ASEAN+3: Lending Rates
(Percent)



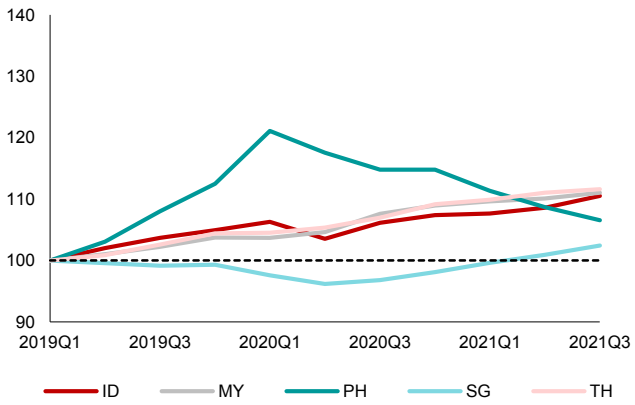
Sources: National authorities via Haver Analytics; and AMRO staff calculations.
Note: The definition of lending rates varies across economies and refers to the average lending rate, working capital credit rate, and interest rate on new loans to firms, among others.
ID = Indonesia; JP = Japan; KR = Korea; MY = Malaysia; TH = Thailand.

Figure 1.39. Selected ASEAN+3: Household Debt
(Index, 2019Q1 = 100)

Plus-3



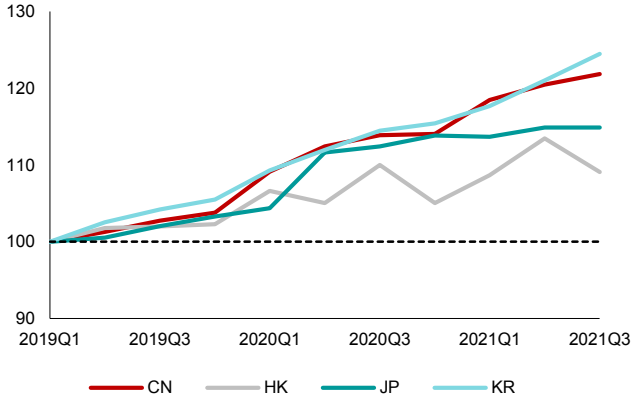
ASEAN-5



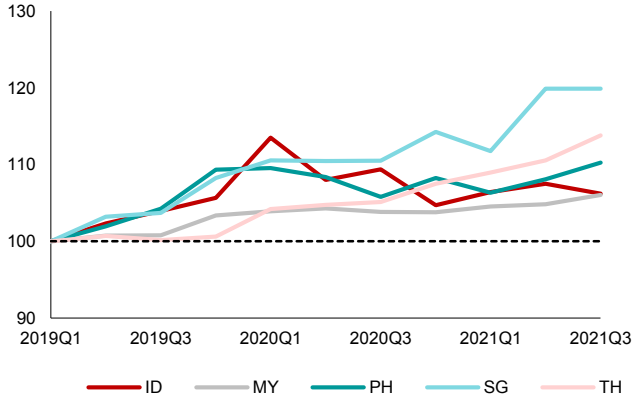
Sources: Bank for International Settlements and national authorities, both via Haver Analytics; and AMRO staff calculations.
Note: CN = China; HK = Hong Kong; ID = Indonesia; JP = Japan; KR = Korea; MY = Malaysia; PH = the Philippines; SG = Singapore; TH = Thailand.

Figure 1.40. Selected ASEAN+3: Nonfinancial Corporate Debt
(Index, 2019Q1 = 100)

Plus-3

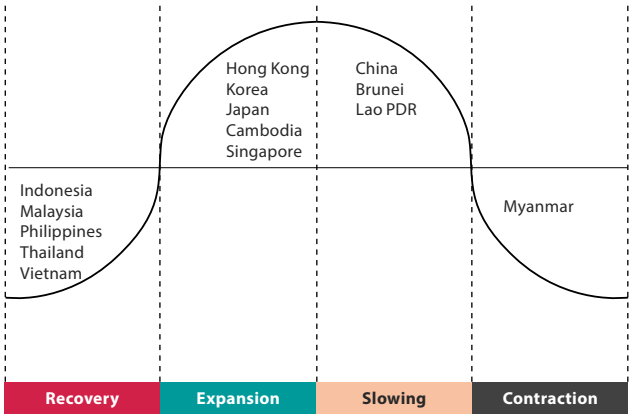


ASEAN-5



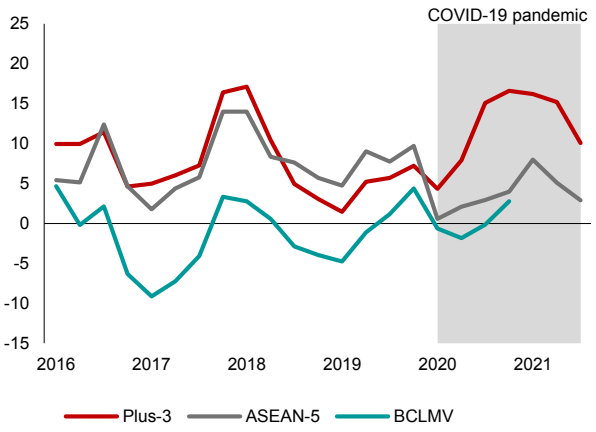
Sources: Bank for International Settlements and national authorities, both via Haver Analytics; and AMRO staff calculations.
Note: CN = China; HK = Hong Kong; ID = Indonesia; JP = Japan; KR = Korea; MY = Malaysia; PH = the Philippines; SG = Singapore; TH = Thailand.

Figure 1.41. ASEAN+3: Credit Cycle Position, February 28, 2022



Sources: AMRO staff estimates.
Note: The credit cycle can be measured by the credit gap, which is the deviation of an indicator constructed by aggregating real credit growth, real property prices (where available), and the credit-to-GDP ratio from its trend value. "Expansion" indicates that the credit gap is positive and widening—credit growth is positive and property prices are rising. "Slowing" indicates that the credit gap is positive and narrowing. "Contraction" indicates that the credit gap is negative and widening—credit growth is negative and property prices are falling. "Recovery" indicates that the credit gap is negative and narrowing.

Figure 1.42. ASEAN+3: Growth in Credit to the Private Sector
(Percent, year-on-year)



Sources: National authorities via Haver Analytics; and AMRO staff calculations.
Plus-3 = China, Hong Kong, Japan, and Korea; ASEAN-5 = Indonesia, Malaysia, the Philippines, Singapore, and Thailand; BCLMV = Brunei, Cambodia, Lao PDR, Myanmar, and Vietnam.

Steady Capital Inflows amid Financial Market Scares

Capital flows into the region were strong in 2021, driven almost entirely by flows into debt markets, especially China and Korea (Figure 1.43, Table 1.3). Most regional equity markets saw outflows, with the exception of China, which benefited from inflows from Shanghai and Shenzhen Stock Connect programs as offshore stocks underperformed as a result of regulatory changes, and Indonesia, where a large number of initial public offerings by tech companies attracted foreign interest. Regional bond markets mostly experienced inflows. If US bond yields were to rise at a faster pace because of a more hawkish than anticipated stance by the US Federal Reserve (the Fed), regional bonds could become relatively less attractive for foreign investors. However, this would not necessarily translate into substantial capital outflows if country-specific factors remain favorable. Continued domestic economic recovery will also create room for monetary tightening in some economies, thus limiting any worsening of relative bond valuations.

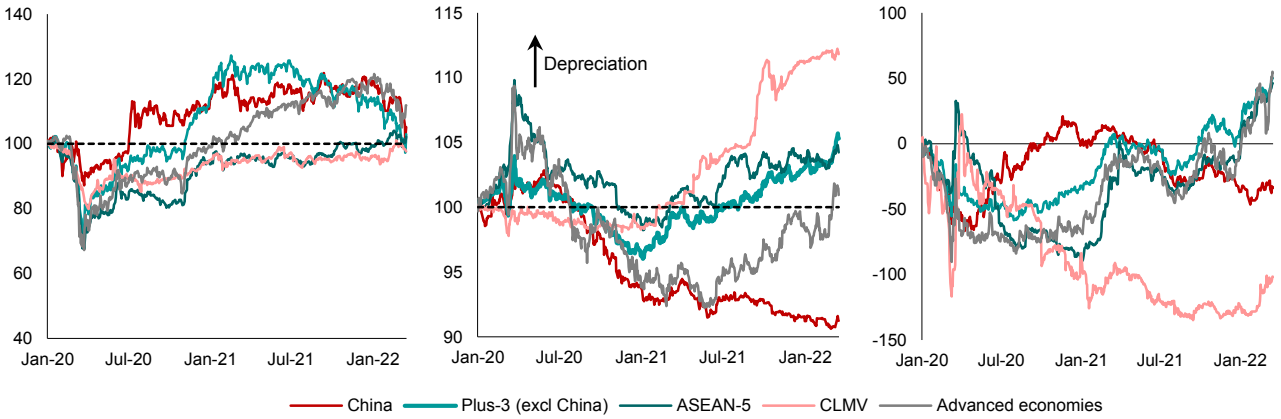
Looking ahead, some of the key themes that preoccupied global and regional financial markets in 2021 are likely to carry over to 2022. Prime among them are growth, inflation, and the monetary policy outlook in the United States (Box 1.4). In addition, developments in China's real estate sector could be taken by financial markets to signal potential vulnerabilities ahead, notwithstanding recent measures implemented by the authorities to strengthen the sector's resilience (Box 1.3).

Figure 1.43. ASEAN+3 and Selected Advanced Economies: Performance of Equity, Exchange Rate, and Government Bond Markets

Equity Returns
(Index, Dec 31, 2019 = 100)

Exchange Rate against USD
(Index, Dec 31, 2019 = 100)

10-year Government Bond Yield Returns
(Basis points, Dec 31, 2019 = 0)



Sources: Atlantic Council; Bank for International Settlements; national authorities via Haver Analytics; and AMRO staff calculations.
Notes: Data are up to March 17, 2022. Selected advanced economies = United States, euro area, and United Kingdom; Plus-3 (excl China) = Hong Kong, Japan, and Korea; ASEAN-5 = Indonesia, Malaysia, the Philippines, Singapore, and Thailand; CLMV = Cambodia, Lao PDR, Myanmar, and Vietnam. Data for Brunei and bond yield returns for Cambodia, Lao PDR and Myanmar are unavailable. Exchange rates are quoted against the US dollar; for advanced economies, these include only the euro and British pound.

Table 1.3. Selected ASEAN+3: Monthly Portfolio Flows into Equity and Debt Markets
(Billions of US dollars)

Period / Market	2020	2021	2021												2022	
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
Equity Flows																
Total	**179.6**	**71.6**	**20.4**	**-2.8**	**-32.9**	**25.7**	**33.6**	**-0.8**	**-49.5**	**-5.1**	**12.2**	**23.1**	**12.4**	**35.3**		
China	221.1	98.0	25.8	0.1	-30.5	26.7	42.7	-0.1	-44.5	-0.4	10.9	25.0	10.2	32.2		
Total (excl China)	**-41.5**	**-26.4**	**-5.3**	**-2.8**	**-2.4**	**-1.0**	**-9.1**	**-0.7**	**-5.0**	**-4.7**	**1.3**	**-1.9**	**2.2**	**3.1**	**-2.5**	
Indonesia	-3.2	2.7	0.8	0.3	-0.2	-0.2	0.2	0.3	0.1	0.3	0.3	0.9	-0.2	0.1	0.4	1.2
Korea	-20.1	-23.0	-5.3	-1.8	-1.3	0.1	-8.0	-0.8	-4.2	-5.1	0.9	-3.2	3.0	2.6	-3.3	0.4
Malaysia	-5.8	-0.8	-0.2	-0.2	0.0	-0.3	0.0	-0.3	-0.3	0.3	0.2	0.4	0.0	-0.3	0.1	0.7
Philippines	-3.3	-1.0	-0.1	-0.4	-0.4	-0.4	0.2	0.5	-0.2	-0.1	-0.1	-0.2	0.1	0.1	0.0	
Thailand	-8.3	-1.6	-0.4	-0.6	0.0	-0.1	-1.1	-0.3	-0.5	0.2	0.3	0.5	-0.3	0.7	0.4	1.9
Vietnam	-0.9	-2.7	-0.1	-0.1	-0.5	0.0	-0.5	-0.2	0.2	-0.3	-0.3	-0.3	-0.4	-0.1	-0.1	0.0
Debt Flows																
Total	**204.5**	**200.0**	**45.0**	**24.4**	**3.8**	**13.7**	**24.0**	**21.3**	**5.4**	**6.3**	**15.7**	**7.3**	**14.7**	**18.3**		
China	187.2	132.3	39.8	15.5	-4.4	7.3	18.1	10.9	-1.2	0.9	13.3	5.1	13.7	13.3		
Total (excl China)	**17.3**	**67.8**	**5.2**	**8.9**	**8.3**	**6.4**	**5.9**	**10.5**	**6.6**	**5.4**	**2.4**	**2.2**	**1.0**	**5.1**	**5.9**	
Indonesia	-4.7	-4.9	0.8	-1.1	-1.3	1.0	0.2	1.3	-0.6	1.0	-1.3	-0.9	-2.2	-1.9	-0.3	0.5
Korea	20.5	58.9	3.3	8.0	8.1	3.0	5.0	8.3	8.1	1.5	4.4	2.1	2.4	4.7	3.0	3.3
Malaysia	4.5	8.2	0.9	1.8	1.4	1.6	0.5	-0.1	-0.9	1.6	0.2	0.7	-0.8	1.5	0.8	0.7
Philippines	-0.9	0.4	0.2	0.3	-0.1	0.0	0.2	-0.2	-0.1	0.1	0.0	0.0	0.0	-0.1	0.1	
Thailand	-2.0	5.2	0.0	-0.1	0.2	0.9	0.0	1.2	0.1	1.2	-0.9	0.3	1.6	0.8	2.3	

Sources: Bloomberg Finance LP; national authorities via Haver Analytics; and AMRO staff calculations.
Note: The flows are shaded based on the country's historical flow numbers (since 2014). Green indicates inflows, while red indicates outflows in the period 2014–21. The darker the shade of green and red, the larger the inflows and outflows, respectively.

Box 1.4:

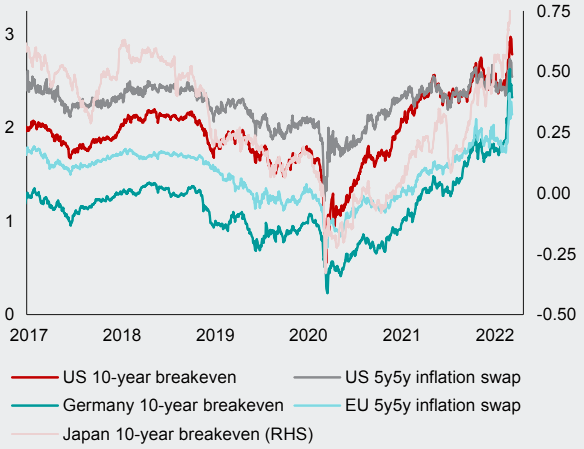
Inflation Scares, Policy Pivot, and Market Uncertainties in 2021

Regional financial markets spent most of 2021 dissecting the elevated inflation and inflation expectations in the advanced economies and their impact on the respective economies' monetary policy amid fresh waves of the pandemic (Figure 1.4.1). The rise in inflation in early 2021 was initially seen as temporary and technical but as months passed, the view began to change. Major central banks, which had premised their policies on transitory inflation, acknowledged that inflation had stayed higher for much longer than earlier expectations.

Higher inflation expectations led to some turbulence in global markets as policy tightening expectations were brought forward significantly (Pande 2021). The shift in the Fed's policy stance had the greatest impact on emerging markets. Market volatility rose in the first quarter of 2021 as markets positioned themselves for a potential Fed tightening and was calmed only after dovish forward guidance by the Fed.

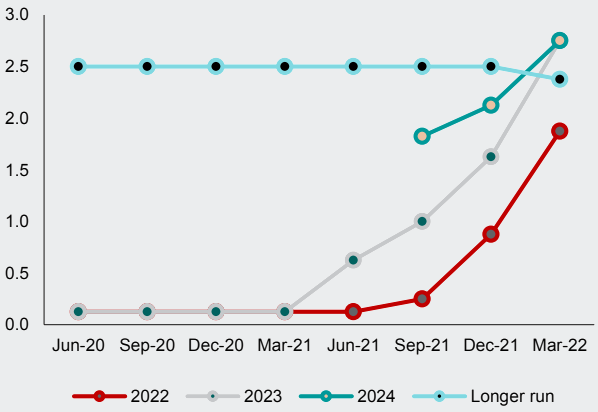
The Fed did gradually shift its stance in response to the persistent inflation by acknowledging the need for tapering in June, announcing tapering in November, and increasing the pace of tapering in December. Markets priced in the Fed's hawkishness in late December 2021 and January 2022. The first rate increase by the Fed came in March 2022, together with the announcement that it would consider shrinking the balance sheet by late 2022 (Figure 1.4.2). Fed tightening could still be a source of market volatility in 2022. While some may argue that it would be difficult for the Fed to be more hawkish than what the market pricing indicates, risks exist on either side. Although uncertainty over the Russia-Ukraine situation has temporarily dampened interest rate-tightening expectations, Fed forecasts and market pricing both indicate that the Fed will likely deliver a cumulative hike of at least 175 basis points in 2022.

Figure 1.4.1. Selected Advanced Economies: Market-Implied Inflation Expectations
(Percent)



Sources: Bloomberg Finance L.P.; and AMRO staff calculations.
Note: The 10-year breakeven yield is the US Treasury market-implied pricing of inflation expectations over the next 10 years. 5y5y inflation swap is the swap market-implied pricing of inflation over 5 years, 5 years from now.
EU = European Union.

Figure 1.4.2. Federal Open Market Committee Median Projections of Policy Rates
(Percent)



Sources: US Federal Reserve; and AMRO staff calculations.

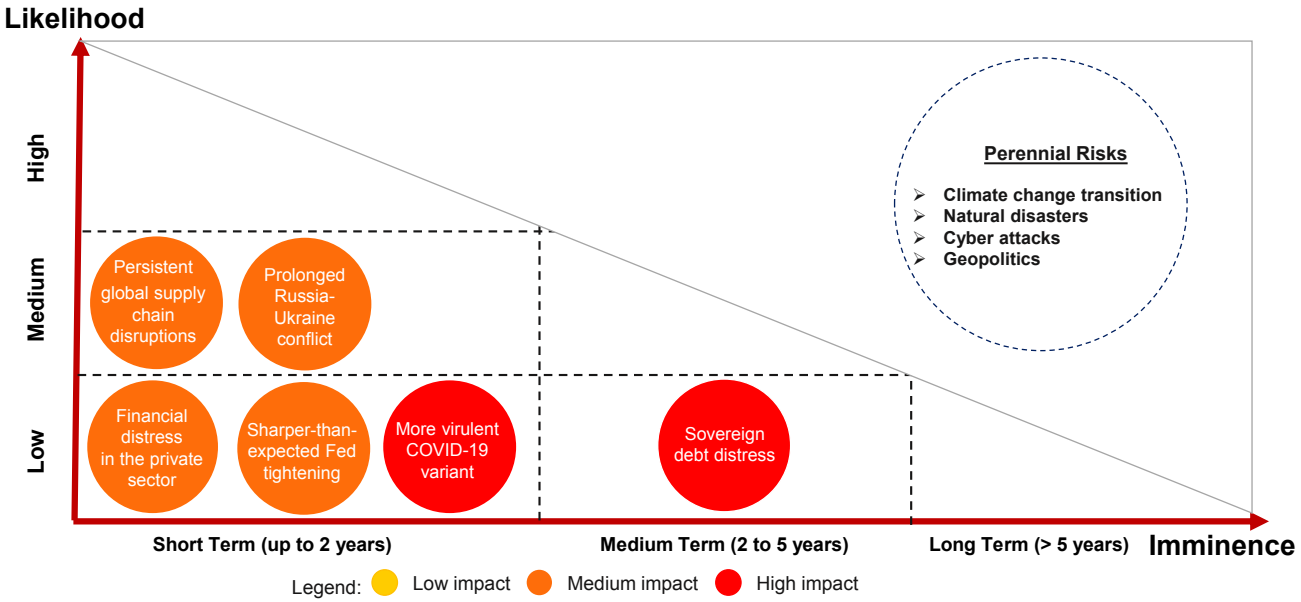
The author of this box is Prashant Pande.

II. Risks to the Outlook

The possible emergence of new and more virulent COVID-19 variants cannot be ignored. Available COVID-19 vaccines have remained effective so far at preventing severe illness, hospitalizations, and death, but vaccine-resistant variants of the virus would add to the risks from delays in the availability of approved vaccines and antiviral treatments, further setting back the progress of economic re-opening. A new wave of such infections could prompt a retightening of containment measures and further test the region's healthcare capacity, derailing the prospects of economic recovery (Figure 1.44).

An emerging key risk is the Russia-Ukraine conflict, the immediate effects of which were felt most notably in commodity prices, particularly energy prices. Sweeping sanctions imposed on Russia have driven crude oil prices to multiyear highs, and wholesale gas prices have more than doubled since the end of February 2022. Escalating energy prices would have negative repercussions for the region, given that most regional economies are net energy importers. A prolonged conflict will keep energy and food prices elevated and cause disruptions to the supply chains, stoking inflation and lowering private consumption and growth. There will also be an impact on the region via lower global growth and its knock-on effects on global trade (Box 1.5).

Figure 1.44. Regional Risk Map, March 2022



Another key risk is a continuation or recurrence of the global supply-chain bottlenecks that disrupted trade flows in 2021 (Figure 1.45). The likelihood of more COVID-19 related production shutdowns, port-handling stoppages and shipping delays in the region depends on the future path of the pandemic and how the region's authorities respond to new outbreaks. Structural problems in the logistics sector in major export markets like the United States, which have contributed to supply chain bottlenecks and delays, will take a longer time to resolve (Box 1.1). In addition, airspace and shipping-lane closures during the Russia-Ukraine conflict could disrupt freight and drive up cargo costs. Such persistent supply chain disruptions could undermine the region's export performance and raise global cost pressures.

A sharper-than-expected monetary policy normalization in the United States could lead to a premature tightening in global financial conditions, with potential implications for interest rates, capital outflows, and financial market volatility in the region. Global bond market volatility has increased in tandem with the shift in the US inflation outlook and the attendant uncertainties. As a result, borrowing costs have trended higher, spilling over to emerging markets, including those in the region. History shows that Fed policy normalization after a crisis is not without spillover effects, especially if financial markets overreact in anticipation of the Fed's actions. A tightening in global financial conditions resulting from Fed policy surprises can lead to volatility spikes and fuel global risk aversion (Box 1.6). Higher risk premia can cause higher debt service and refinancing risks and disruptive corrections to stretched assets, depressing regional growth.

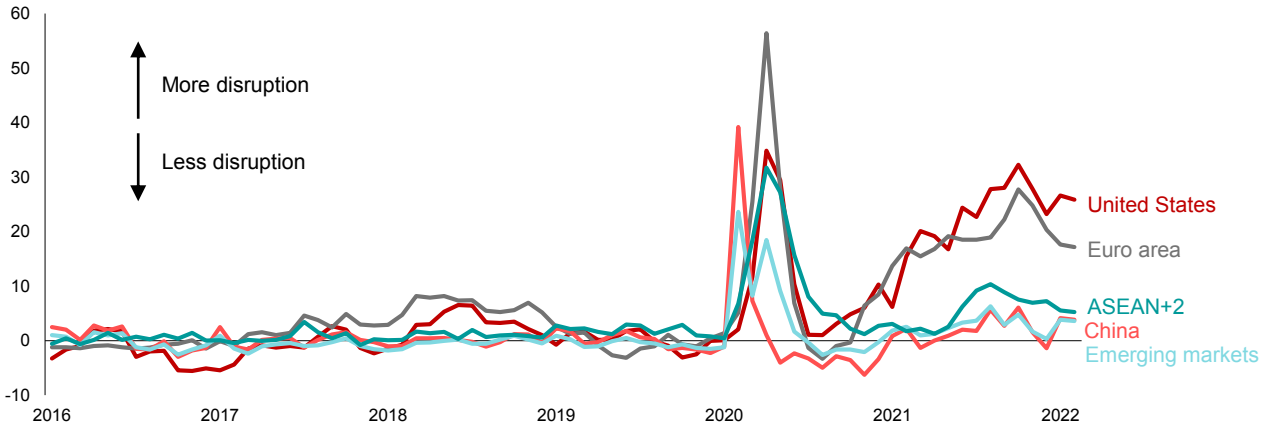
The prolonged impact of the pandemic on business and household incomes means that financial risks are still elevated. Many businesses throughout the region experienced large income losses, some of which are permanent. Similarly, in the labor market, some jobs would be permanently lost. If the recovery is delayed, more businesses and individuals would be unable to service their loans, and this could have implications for banking sector soundness. That said, ASEAN+3 corporate default risks appear to have moderated in 2021, after rising sharply across the region in 2020 as debt surged to record levels. Corporate debt-at-risk (DAR)—measured by the interest coverage ratio and the debt service ratio, both as a percentage of GDP—is projected to have fallen in 2021 in almost all economies with the improvement in earnings amid an economic turnaround and low interest rates, although it remains higher than before the pandemic (Figures 1.46 and 1.47) (Ho and Ong 2022).[5]

A major financial crisis is unlikely at this juncture. Policy measures such as policy rate reductions, credit expansion, and regulatory forbearance have helped to keep reported NPL ratios low so far. Policy measures such as credit guarantees for small- and medium-sized enterprises (SMEs) have helped to keep bank capital adequacy ratios (CARs) high by lowering risk weights in the computation of capital adequacy. Bank capital buffers were generally comfortable going into 2021. Reverse solvency stress tests undertaken for a sample of banks (using the latest available 2020 annual financial statements) indicate that NPL ratios would have to rise by an average of around 10 percentage points or more among banks in the majority of ASEAN+3 economies (except Lao PDR, Vietnam, Korea, and China) to reduce their CARs to the regulatory minima (Figure 1.48). Anecdotal evidence from some economies in the region suggests that most borrowers who were kept afloat thanks to loan repayment moratoria in 2020, have resumed servicing their bank loans with the turnaround in economic activity.

The pandemic could threaten fiscal sustainability in the region. Public debt-to-GDP ratios have risen sharply—by 10–20 percentage points in many economies—with the deployment of massive fiscal resources to support economic activity through the crisis (Figure 1.49). As a result, the debt service burden has risen, squeezing available fiscal space. In the event of a prolonged pandemic, continued fiscal support may be needed and this could pose a threat to fiscal health, especially for economies with limited fiscal space. Similar to the banking sector, the realization of a sovereign debt crisis is deemed a tail risk at this juncture due to some mitigating factors. First, the bulk of the fiscal deficits were financed from higher domestic savings that spiked up because of the collapse in consumption and investment in the region. These financial savings were in turn reinvested by banks and asset management firms in government bonds. Second, in some countries, the central banks bought government bonds to inject liquidity into the markets. Third, interest rates on these bonds are significantly lower because of the easy monetary conditions. Because of these mitigating factors, the rollover risk and debt service burden are much lower than if the debt were financed from foreign capital inflows. This is also in line with the market's assessment of sovereign debt, as reflected in sovereign credit ratings for ASEAN+3 economies (Figure 1.50).

Climate change—and policy responses to climate change—will have huge economic impacts and long-lasting, multigenerational consequences. Regional economies that are dependent on agriculture, fisheries, and other natural resources are especially vulnerable to natural disasters resulting from extreme weather conditions. Any manifestation of climate change risk would not only have a direct fiscal burden, but also spill over to the wider financial system, magnifying the impact on the real economy. Apart from the physical risks, regional economies also face challenges from policies to reduce their reliance on carbon-based fuels and other carbon-intensive industries (Box 1.7).

Figure 1.45. ASEAN+3 and Selected Economies: Supply Chain Disruption
(Index)

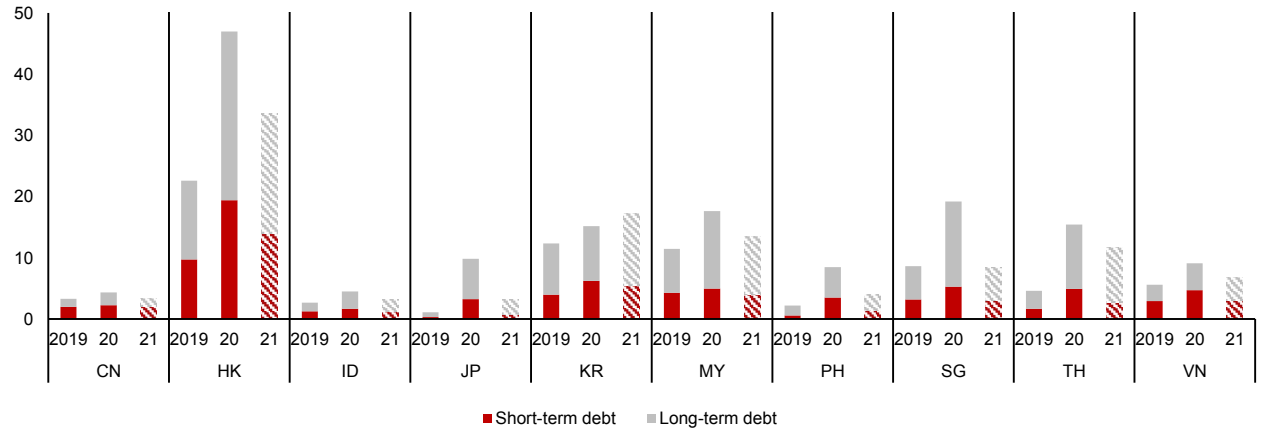


Sources: Haver Analytics; and AMRO staff calculations.
Note: Supply chain disruptions are calculated as the difference between the supply delivery times sub-index in the Purchasing Managers' Index (PMI) and a counterfactual, cyclical measure of supply delivery times based on the manufacturing output sub-index in the PMI. The extent of supply chain disruptions is measured by deviations from zero. ASEAN+2 = ASEAN economies, Japan, and Korea.

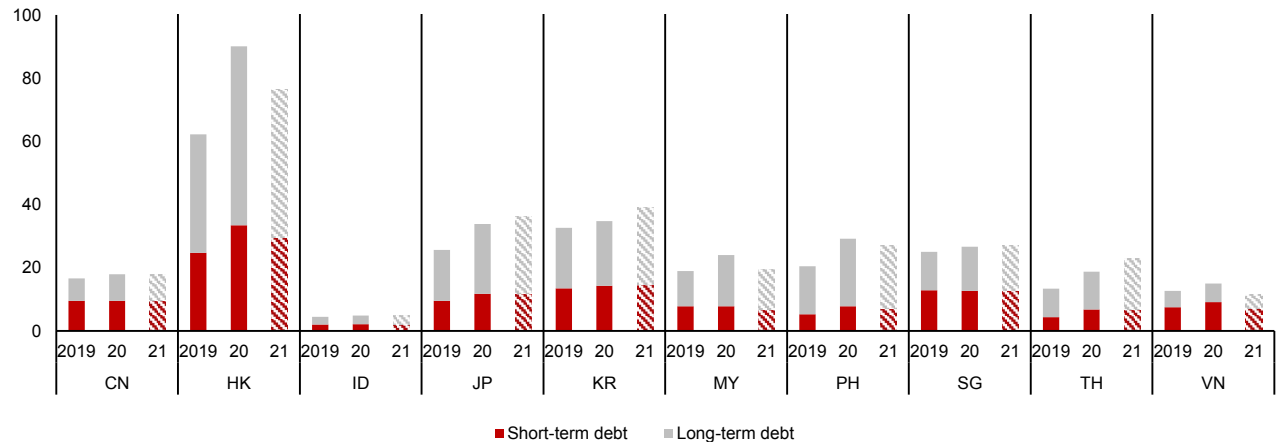
5/ The eventual lifting of regulatory forbearance could have some bearing on the corporate default risk, which bears close watching.

Figure 1.46. Selected ASEAN+3: Actual and Projected Debt-at-Risk
(Percent of GDP, end of period)

By Interest Coverage Ratio

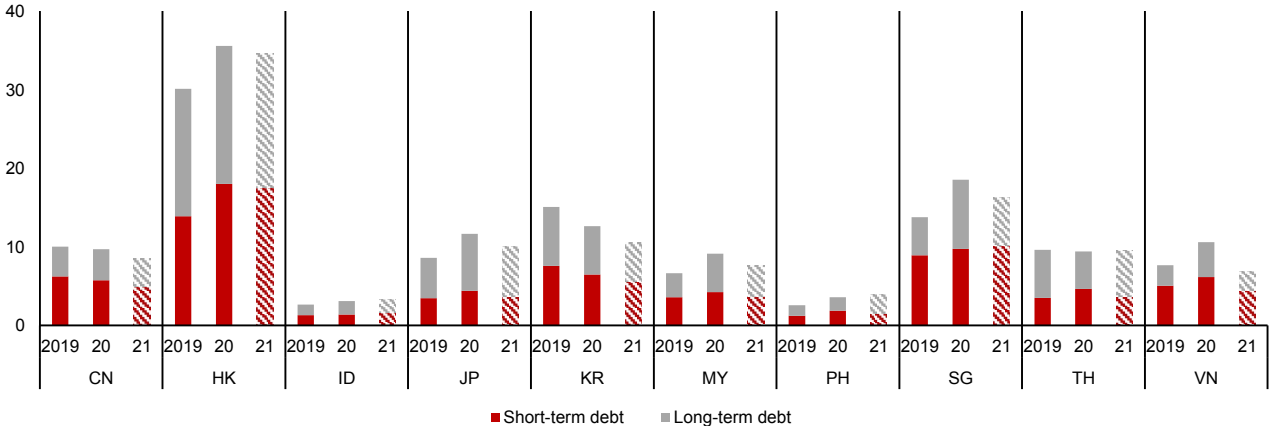


By Debt Service Ratio



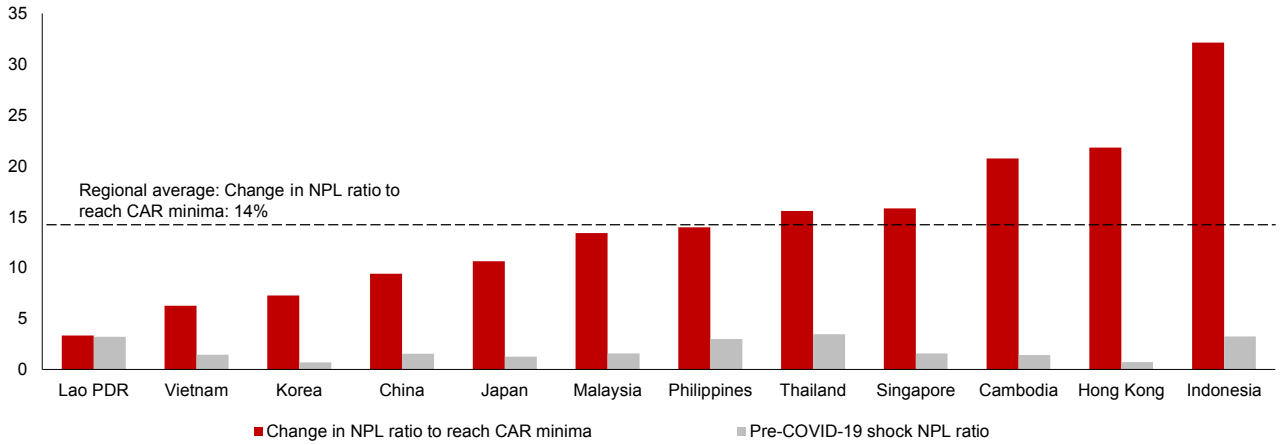
Source: Ho and Ong (2022).
Notes: CN = China; HK = Hong Kong; ID = Indonesia; JP = Japan; KR = Korea; MY = Malaysia; PH = the Philippines; SG = Singapore; TH = Thailand; VN = Vietnam. Firms with interest coverage ratio <1.25 or debt service ratio <1 are classified as having debt-at-risk (DAR). DAR for 2021 is projected using actual data in the first half of 2021.

Figure 1.47. Selected ASEAN+3: Actual and Projected Debt-at-Risk, Taking into Account Availability of Quick Assets
(Percent of GDP)



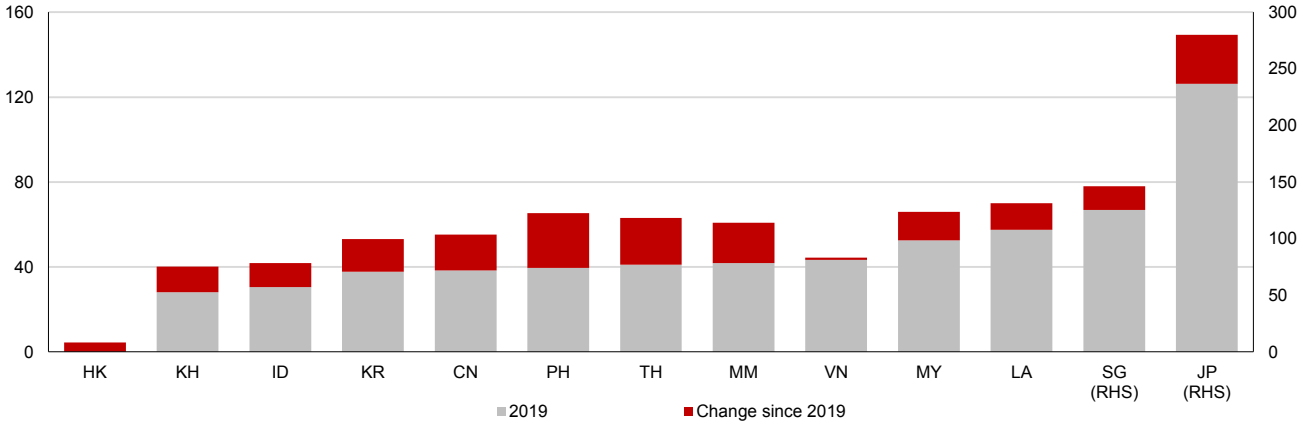
Source: Ho and Ong (2022).
Notes: CN = China; HK = Hong Kong; ID = Indonesia; JP = Japan; KR = Korea; MY = Malaysia; PH = the Philippines; SG = Singapore; TH = Thailand; VN = Vietnam. Firms with debt service ratio <1 and without sufficient quick assets to cover short-term obligations are classified as having debt-at-risk (DAR). DAR for 2021 is projected using actual data in the first half of 2021.

Figure 1.48. ASEAN+3: Change in NPL Ratio to Reach Regulatory Minima, All Banks
(Percentage points, 2020 position)



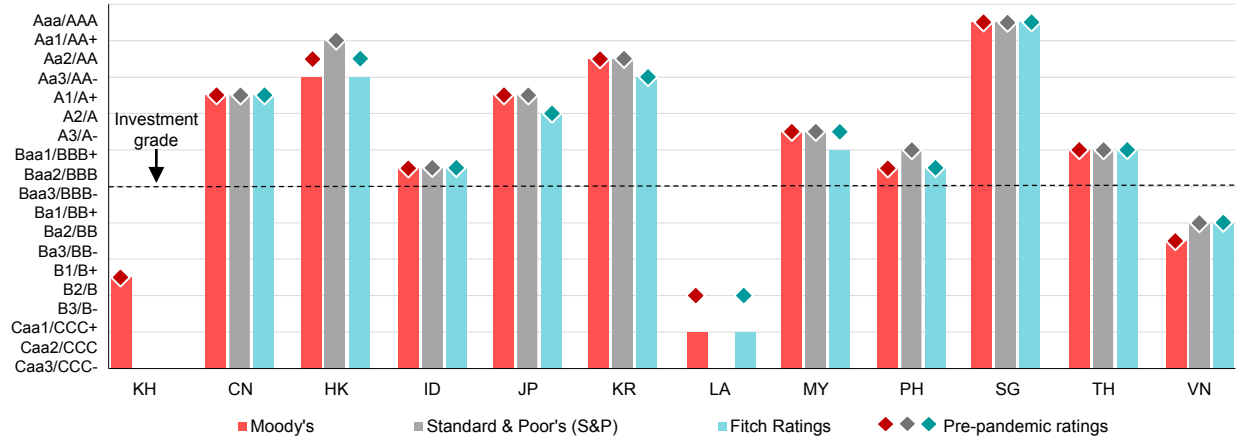
Sources: BankFocus; and AMRO staff estimates.
Note: Data are from individual banks' financial statements for 2020. "All banks" comprise those available in BankFocus. Where banks do not report classified loans, their non-performing loan (NPL) ratios are used to calculate their NPL levels. Minimum capital adequacy is defined as 10.5 percent for banking systems that have adopted Basel III (ASEAN-5, China, Hong Kong, Korea, and Japan, with 4 percent for Japanese banks that do not have an overseas business base) and 8 percent for those that have adopted or are transitioning to Basel II (Cambodia, Lao PDR, and Vietnam). The capital asset ratio (CAR) is used for some of Cambodia's banks in the test. Given the unavailability of NPL ratios for Singapore during the Asian financial crisis (AFC), the highest ratio in the immediate post-AFC period (Q2 2004) is used as a proxy, due to the lagging nature of this indicator. In some economies, the odd small- or medium-sized bank has reported a CAR that appears to be below the regulatory minimum; this very small number of banks is excluded from AMRO staff's estimates of aggregate breakeven NPL ratios.

Figure 1.49. ASEAN+3: Government Debt Projections, 2022–23
(Percent of GDP)



Sources: National authorities via Haver Analytics; and AMRO staff projections.
Note: The 2022–23 projections are based on information available up to December 31, 2021. CN = China; HK = Hong Kong; ID = Indonesia; JP = Japan; KH = Cambodia; KR = Korea; LA = Lao PDR; MM = Myanmar; MY = Malaysia; PH = the Philippines; SG = Singapore; TH = Thailand; and VN = Vietnam. Brunei is omitted as data are unavailable.

Figure 1.50. ASEAN+3. Sovereign Debt Ratings, 2022
(Rating)



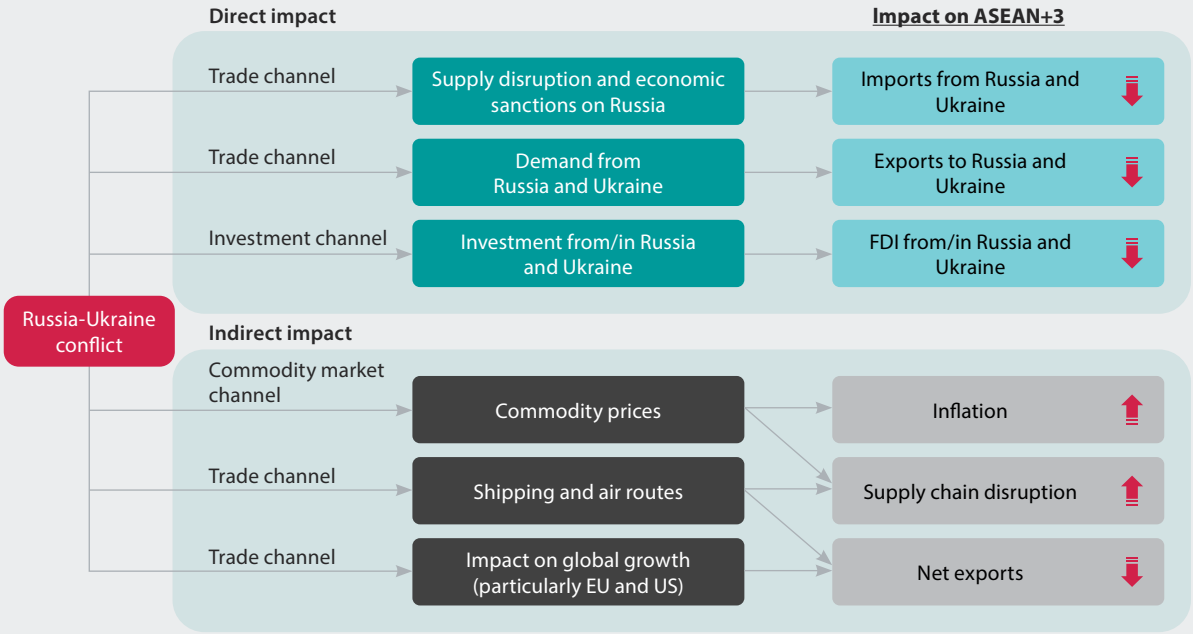
Source: Credit rating agencies.
Note: The columns denote ratings as of February 6, 2022, and the markers denote pre-pandemic ratings as of December 31, 2019. Pre-pandemic ratings for Lao PDR are as of January 8, 2020, for Moody's; and February 12, 2020, for Fitch Ratings. CN = China; HK = Hong Kong; ID = Indonesia; JP = Japan; KH = Cambodia; KR = Korea; LA = Lao PDR; MY = Malaysia; PH = the Philippines; SG = Singapore; TH = Thailand; and VN = Vietnam. Brunei and Myanmar are omitted as data are unavailable.

Box 1.5:

Impact of the Russia–Ukraine Conflict on the ASEAN+3 Region

The escalation of the Russia-Ukraine conflict on February 24, 2022, has introduced additional downside risks to the global growth outlook. The ASEAN+3's direct trade and investment links with Russia and Ukraine are relatively limited. However, the impact of the conflict on global commodity prices, transport routes, and ultimately, growth, could affect the region's macroeconomic outlook (Figure 1.5.1).

Figure 1.5.1. Potential Impact of the Russia-Ukraine Conflict on the ASEAN+3 Region



Source: AMRO staff.

Direct impact through trade and investment links with Russia and Ukraine

The supply of major goods produced by Russia and Ukraine has been affected by the disruption of economic activities in the two economies and the international sanctions imposed on Russia.[1] The ASEAN+3 region's primary imports from Russia and Ukraine are mineral fuels and agricultural products. While imports from Russia and Ukraine account for a small share of the region's overall imports, the potential disruption to the supply of key intermediate inputs such as noble gases and nickel could significantly impact the region's manufacturing production and exports, particularly in the semiconductor and automobile industries (Figure 1.5.2).

Exports from the ASEAN+3 to Russia and Ukraine could be affected by lower demand due to the conflict as well as the closure of airspace and export bans and financial sanctions imposed on Russia.[2,3]

The author of this box is Catharine Tjing Yiing Kho, with inputs from Chiang Yong (Edmond) Choo, Marthe Hinojales, Anthony Chia Kiat Tan, and Hongyan Zhao.

1/ On February 26, 2022, Western governments banned several Russian banks from the Society for Worldwide Interbank Financial Telecommunication (SWIFT) international payment system and blocked the Central Bank of Russia from accessing its foreign exchange reserves.

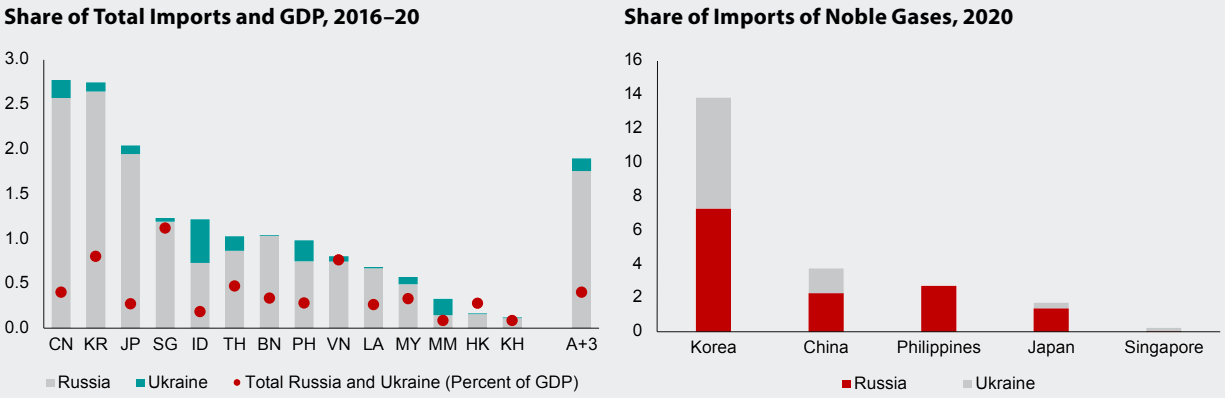
2/ The United States and the European Union have announced a host of export controls on Russia, blocking access to key technologies and markets. In addition, the US Foreign Direct Product Rule requires US government endorsement for exports to Russia of items produced outside the United States made with technology or materials of US origin, including semiconductors, computers, communications, and information security. Among ASEAN+3 economies, Japan, Korea, and Singapore have announced sanctions on exports to Russia of products that can be employed for strategic/military purposes, potentially including semiconductors.

3/ The European Union and other countries have closed their airspace to Russian airlines, and Russia has retaliated with the same.

The region's main exports to Russia and Ukraine are electrical and electronic goods, vehicles, and industrial machinery. While exports to Russia and Ukraine account for only a small share of the region's total goods exports, the conflict could weigh on services exports by reducing the number of tourists from Russia to the region. For example, Russian tourists were the third-highest contributor to Thailand's tourism revenue in pre-pandemic 2019; they were also the largest group of travelers to Thailand in January 2022 and the top visa applicants under the quarantine-free entry program that was relaunched in February 2022 (Chuwiruch and Yuvejwattana 2022).

The ASEAN+3's inward direct investments from and outward direct investments to Russia and Ukraine are also very small. FDI inflows to the region from Ukraine are negligible. Half of the ASEAN+3 economies reported FDI inflows from Russia in 2020 but the inflows accounted for less than 2 percent of their total FDI inflows. Some regional economies, e.g., China, Hong Kong, Japan, Korea, and Singapore, have outward direct investments in Russia, but these investments accounted for less than 1 percent of their total outward direct investments. ASEAN+3 manufacturing projects in Russia are mostly concentrated in the automobile and auto-parts sector and they are primarily to serve the domestic market. Some Japanese companies have suspended or ceased some of their operations in Russia since the start of the conflict. The decline in inward investments could marginally dent the region's investment growth, while the decline in outward investment by the region could result in financial losses for regional firms.

Figure 1.5.2. ASEAN+3: Merchandise Imports from Russia and Ukraine
(Percent)



Sources: IMF Direction of Trade and International Financial Statistics databases via Haver Analytics; UN Comtrade; and AMRO staff calculations.
Note: A+3 = ASEAN+3; BN = Brunei; CN = China; HK = Hong Kong; ID = Indonesia; JP = Japan; KH = Cambodia; KR = Korea; LA = Lao PDR; MY = Malaysia; MM = Myanmar; PH = Philippines; SG = Singapore; TH = Thailand; and VN = Vietnam. Noble gases include argon, neon, krypton, and xenon, represented by HS codes 28042100, and 28042900.

Indirect impact through commodity prices and global growth

The conflict is affecting global commodity prices and the global growth outlook—and this will impact the ASEAN+3 region, given its deep integration in global markets. Since the start of the conflict, the prices of mineral and agricultural products have surged to historic highs (Figure 1.5.3). Russia is a major producer and exporter of energy supplies—in 2021, it was the largest producer of natural gas, the second-largest exporter of crude oil and condensates, and the third-largest coal exporter in the world (U.S. EIA 2022). Ukraine and Russia account for a large share of the world's exports of sunflower oil and wheat.

The increase in global commodity prices will raise imported inflation in the ASEAN+3 region. Even though the ASEAN+3's reliance on Russia for energy imports is relatively low, the region's economies will feel the impact of higher global energy prices as most of them are net oil and gas importers and the share of energy-related items in their consumer baskets ranges from under 10 percent to almost 30 percent. Food prices are also likely to see sharp increases as agricultural commodity exports from Russia and Ukraine are curtailed, with spillovers into prices of domestically produced commodities. For example, the price of crude palm oil, a substitute for sunflower

oil, rose to an all-time high on March 2, 2022. Higher indirect production costs, such as the cost of fertilizer and feedstock, could disrupt agriculture production and contribute to higher food prices throughout this year and into next year. The pass-through of energy and selected food price increases to inflation will depend on the persistence of these shocks, the CPI weights of affected commodities, and the extent to which these prices are fully passed on to households and firms (or alternatively, the extent to which they are blunted through subsidies or domestic/alternative substitutes).

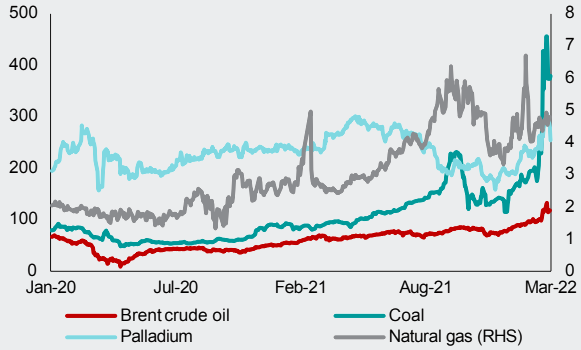
A sharp hike in the prices of base metals and the closure of international shipping routes and air spaces could lead to renewed disruptions in global supply chains. Prices of base metals produced by Russia (e.g., palladium and nickel) have risen in global commodity markets. Together with rare gases, these are critical inputs in supply chains related to semiconductors and electric vehicle battery production in the ASEAN+3. In the immediate term, these inputs could be sourced elsewhere but a protracted conflict could drastically reduce the global supply of these inputs and cause their prices to soar. In addition, port and air space closures mean ocean carriers may skip ports and planes may need to be rerouted, increasing transportation time and cost.[4] The delay in shipment and increase in production cost of critical inputs related to semiconductor or automobile production could potentially disrupt regional exports and reduce firm profitability (Box 1.1).

Lastly, a prolonged conflict and higher energy prices would trigger a global stagflationary recession. The European Union is expected to be the most affected, given its high reliance on energy imports from Russia and lack of immediate substitutes. The European Central Bank (ECB) has forecasted that the euro area's economic output could be lowered by 1.2 percent in 2022 under an adverse scenario characterized by weaker foreign demand, higher commodity prices, heightened uncertainty, repricing in financial markets, and production cuts (ECB 2022). Growth in the United States is also expected to be affected as higher energy prices will exacerbate pre-existing inflationary pressures and dampen private sector spending, retarding the economic recovery.

Lower global growth, particularly among the key trading partners for the region, will lower demand for the region's exports. The reduction in export proceeds would also weigh on private investment in regional economies, particularly in the export-oriented sectors. At the same time, the fall in export income coupled with higher inflation as a result of high energy and food prices would reduce households' real income and dampen private consumption.

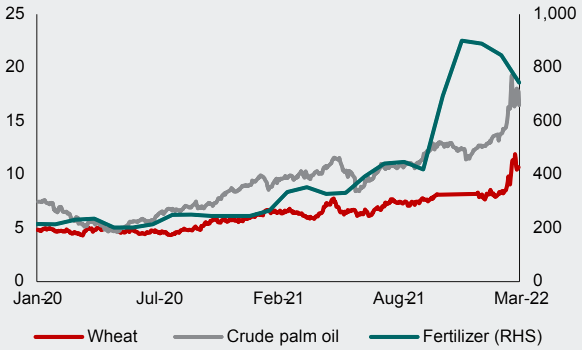
Figure 1.5.3. World: Prices of Selected Raw Commodities

Mineral products
(USD per barrel; USD per metric ton; USD10 per troy ounce; USD per mmbtu)



Sources: Energy Information Agency, Financial Times, Johnson Matthey via Haver Analytics; and AMRO staff calculations.
Note: Data are up to March 15, 2022. Palladium price refers to the Johnson Matthey Base Price. USD = US dollar; mmbtu = metric million British thermal unit.

Agricultural products
(USD per bushel; USD per tonne; USD per metric ton)



Sources: Wall Street Journal, Bank Negara Malaysia, and World Bank via Haver Analytics; and AMRO staff calculations.
Note: Data are up to March 15, 2022. Wheat price refers to Kansas City wheat and fertilizer price refers to urea-based fertilizer from Ukraine.

[4] Almost all of the 10 largest container shipping companies—responsible for moving some 80 percent of global trade—have stopped accepting bookings for Russian cargo, and ports in Europe and the United States are turning away Russian vessels.

Box 1.6:

Shifts in US Monetary Policy: Potential Spillovers to ASEAN+3 Economies

Global financial conditions have tightened relative to January 2021, with a firming economic outlook in major advanced economies. Among advanced economies, the recovery in the United States is the most advanced, with output closest to its pre-pandemic trend and inflation at its highest level in almost 40 years (IMF 2021). Ten-year US Treasury yields have trended higher, reflecting higher expected inflation and a widening inflation risk premium (Figure 1.6.1). This has spilled over to regional emerging markets' sovereign bond markets, resulting in higher borrowing costs.

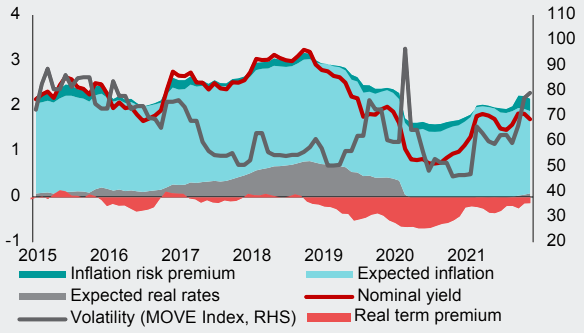
Global bond market volatility has increased since early 2021, in tandem with the shift in the US inflation outlook and the attendant uncertainties. The announcement by the Fed of a faster tapering of its asset purchase program beginning in January 2022, the rate hike in March 2022, and the upward shift in Fed officials' median interest rate projections to seven rate hikes over the course of this year (from less than one hike in September 2021), along with the Russia-Ukraine situation, have kept market volatility elevated.

What do changes in US real yields imply for emerging-market risk assets?

Historically, episodes of rising US real yields and/or falling inflation expectations have led to increased emerging-market stress and capital outflows (AMRO 2021). A key indicator to monitor the spillover effects of US monetary policy on regional markets is the real component of US yields. Typically, higher real rates are caused by expectations of tighter financial and monetary conditions. Higher breakeven yields (i.e., inflation expectations) are the outcome of an improvement in economic activity (which leads to higher growth and inflation). Regional markets have seen periods of stress when US real rates rose (e.g., during the 2013 "taper tantrum" and the 2016 US presidential elections) or when inflation expectations fell sharply (e.g., during the renminbi depreciation in 2015 and the COVID-19 pandemic in 2020).

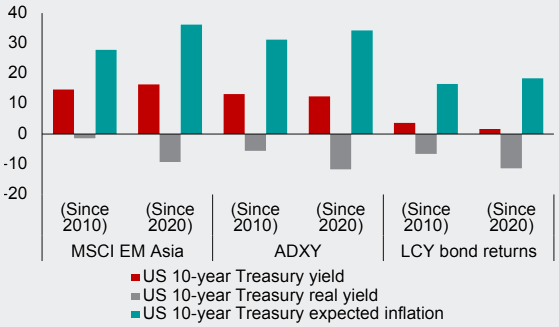
This correlation was observed in early 2022 when the market started positioning itself for a potential tightening of US monetary policy. As of February 10, 2022, 10-year real yields rose by 60 basis points in the year to date, and inflation expectations fell by 15 basis points. This was accompanied by broadly weaker regional equity, foreign exchange, and bond markets. Figure 1.6.2 shows the broad correlations between US yield components and regional risk assets.

Figure 1.6.1. United States: 10-Year US Treasury Yield Decomposition
(Percent)



Sources: Bloomberg Finance L.P.; and Haver Analytics.

Figure 1.6.2. Asia: Correlations between US Treasury Yield Components and Emerging-Market Risk Assets
(Percent)



Sources: Bloomberg Finance L.P.; and AMRO staff calculations.
Note: Correlation calculated on daily changes in yields and indices since January 1, 2010, and January 1, 2020. ADXY = Bloomberg-JPMorgan Asia Dollar Index; LCY = local currency; MSCI EM = Morgan Stanley Capital International Emerging Markets.

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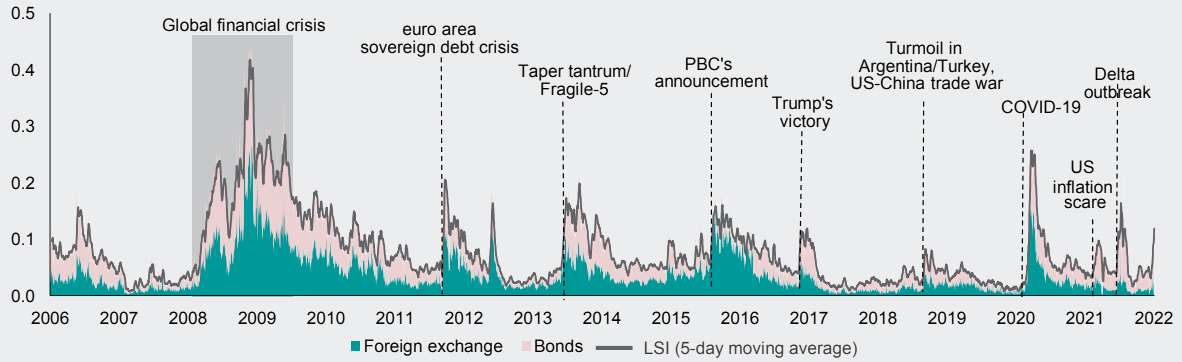
How do (actual and expected) shifts in US monetary policy affect regional emerging-market sovereign debt and currency markets, and capital flows?

Shifts in the US inflation and monetary policy outlook are contributing to local market stress. The regional emerging-market Local Stress Index (LSI) captures market stress in local bond and currency markets following changes in global financial conditions (Figure 1.6.3).[1] During the COVID-19 selloff in early 2020, the level of local market stress was significantly higher compared to earlier stress episodes (such as the 2011 European sovereign debt crisis, the 2013 taper tantrum, the 2015 announcement of the renminbi central parity, and the 2016 Trump presidential victory) but much lower compared to the 2008 global financial crisis. While the COVID-19 selloff-related stress normalized relatively quickly, the LSI suggests that the fundamental shift in the US inflation outlook and the direction of Fed monetary policy is contributing to a fresh bout of market stress in regional emerging markets, particularly local bond markets (Figure 1.6.4). Markets tend to price policy changes ahead of time, and a sharp change in market expectations tends to lead to increased volatility as the market realigns to the new pricing. Increased market volatility, coupled with a sharp rise in borrowing costs could hurt regional emerging markets, particularly those with weaker fundamentals and that are more dependent on external financing.

A sharp spike in US Treasury term premiums, triggered by upside surprises in US inflation, could lead to capital flow reversals in regional emerging markets. The capital flows-at-risk (CFaR) framework can be used to quantify the probability of capital reversals in regional emerging markets in the months following a change in financial condition and/or macro-financial vulnerabilities.[2] A counterfactual analysis suggests that a positive one standard deviation (approximately 100 basis point) shock to the 10-year US Treasury term premium could lead to a sharp rise in the probability of debt outflows over the next six months (Figure 1.6.5):[3]

- Prior to the shock, the regional emerging-market CFaR (5th percentile) is estimated at 4.9 percent of GDP, on average, over the next six months.

Figure 1.6.3. Regional Emerging Markets: Local Stress Index
(Index, 0 to 1; 0 = no stress, 1 = maximum stress)



Sources: Bloomberg Finance L.P.; J.P. Morgan; Reuters; and AMRO staff estimates.
Note: The Local Stress Index (LSI) focuses on several key indicators, chosen on an ex ante basis, given their information content in portending major stress events. The indicators reflect local market liquidity and stress conditions, unlike those indicators used to derive broader financial condition indices, which are a reflection of funding costs. The index is unit-free by construction and is measured on an ordinal scale with range [0, 1], with 1 being the upper limit. Regional emerging markets refer to Indonesia, Korea, Malaysia, the Philippines, and Thailand.. PBC = People's Bank of China. Fragile-5 = Brazil, India, Indonesia, South Africa, and Turkey.

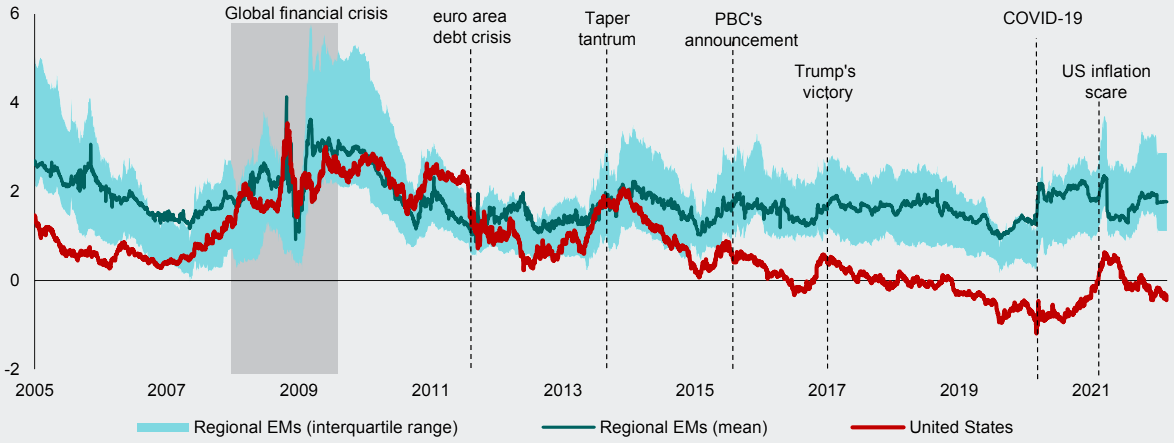
1/ The LSI focuses on several key indicators chosen on an ex ante basis, based on their information content in portending major stress events. The indicators reflect local market liquidity and stress conditions, unlike indicators used to derive broader financial condition indices, which reflect funding costs.

2/ The CFaR framework links macro-financial conditions to the probability distribution of future capital flows. From a policymaking point of view, the analysis provides information about the entire distribution of future capital flows, which is useful for the assessment of tail risks and the likelihood of various risk scenarios. Understanding the driving forces at the left tail of the distribution would also help policymakers to deal with severe downside risks. The CFaR is not structural and therefore cannot ascertain causal links. However, it can quantify the macroeconomic impact stemming from systemic risk events, making it possible to evaluate the severity of such risks. The CFaR, as a reduced form, is most appropriate for comparative statics analysis. It is part of the IMF surveillance toolkit (see Prasad and others 2019).

3/ Refers to sovereign debt gross portfolio capital inflows.

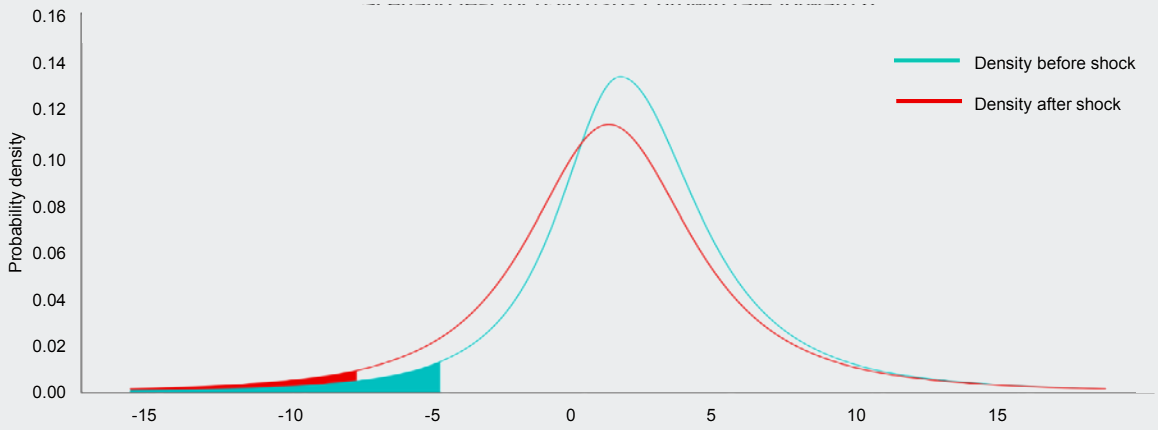
- After the shock, the mode of the distribution shifts leftward, with an increase in the probability that regional emerging-market debt inflows will see a reversal in the next six months (from 25 percent to 40 percent). In the absence of policy measures, the estimated tail-risk CFaR is an outflow of at least 7.7 percent of GDP, on average, over the next six months—which is non-trivial compared to 4.9 percent of GDP pre-shock CFaR.

Figure 1.6.4. Regional Emerging Markets: Estimated Term Premia (10-Year Sovereign Yields)
(Percent)



Source: AMRO staff estimates.
Note: EM = emerging market. Regional EMs refer to Indonesia, Korea, Malaysia, the Philippines, and Thailand.

Figure 1.6.5. Conditional Forecast Densities of Regional Emerging-Market Portfolio Debt Flows Before and After Shocks to US Treasury Term Premia



Source: AMRO staff estimates.
Note: The figure shows the conditional forecast probability densities of regional emerging-market portfolio debt flows before and after a positive one standard deviation (approximately 100 basis point) shock to 10-Year US Treasury (10Y UST) term premia. Assuming Fed policy remains unchanged, the 10Y UST yield (1.8 percent as of February 28, 2022), will rise to above 2 percent and stay there. During the taper tantrum episode (May–August 2013), the 10Y UST term premium rose by 101 basis points, bringing the 10Y UST yield to 2.9 percent by the end of August 2013. The analysis assumes no policy countermeasures.

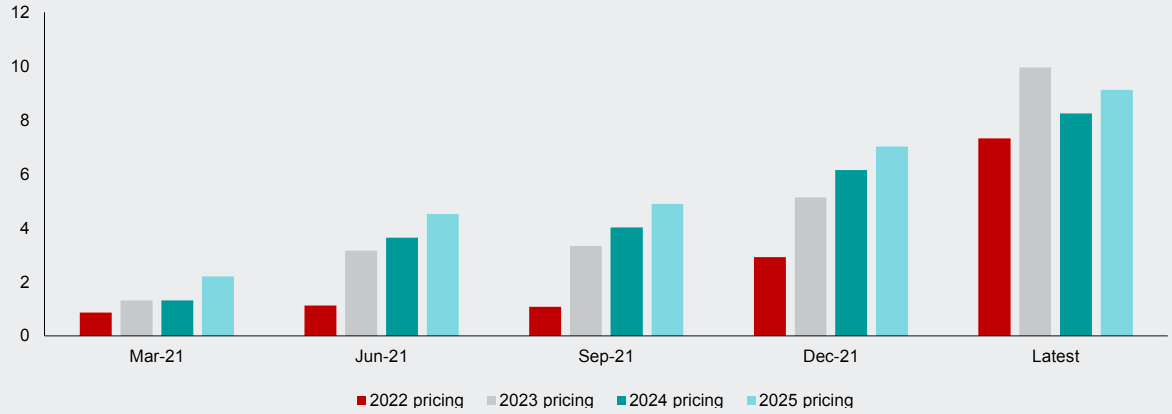
Managing the transition to higher global interest rates

History shows that Fed policy normalization after a crisis can cause bumpiness in the financial markets, especially when the market prices in a hawkish turn. While the Fed has learned to use forward guidance as a tool for gradually shifting market expectations, markets still remain sensitive to potential changes in Fed policy and could potentially get ahead of themselves. The Fed's forward guidance since the fourth quarter of 2021 has gradually shifted market expectations and thus helped dampen (but not eliminate) the increase in market volatility. At the time of writing, the market is expecting a cumulative hike of 175–200 basis points in the Fed's policy rate in 2022 (including

the 25 basis point hike delivered in March) and another 50–75 basis points in 2023 (Figure 1.6.6). This implies that the market is probably also prepared for a Fed balance sheet reduction in the coming months. It can be argued that the current market pricing and Fed forward guidance are already very hawkish, and it would be difficult to imagine the Fed surprising the market with an even more hawkish stance unless inflation surprises on the upside again. That said, the potential risks to regional emerging markets from an actual tightening of the Fed's monetary stance cannot be ignored and regional policymakers would need to remain attentive to the evolving risks in the transition to higher global interest rates.

Sound economic fundamentals, together with favorable structural factors (such as capital market openness and deep local markets), can help mitigate spillover risks. Past reform efforts to foster financial sector development, including deepening the domestic capital markets, have contributed to more resilient market functioning during periods of stress. Moreover, learning from past crises, the region's economies have kept their house in order—enhancing their resilience while reducing vulnerabilities to external shocks. With strong fundamentals such as a credible and more flexible macroeconomic framework supported by an expanded policy toolkit (including capital-flow management and macroprudential policy measures) and ample foreign reserves, regional authorities have become more skillful in navigating uncertainties and managing the shocks. Investors have also become more discerning, able to differentiate economies based on fundamentals. However, there is no room for complacency, and regional policymakers will need to step up their surveillance and be attentive to emerging signs of stress.

Figure 1.6.6. Market Pricing of Fed Rate Hikes
(Number of 25 basis point hikes priced in)



Sources: Bloomberg Finance L.P.; and AMRO staff estimates.
Note: Fed = US Federal Reserve. Latest data as at March 16, 2022.

Box 1.7:

Climate Change Risks and Policies in the ASEAN+3

ASEAN+3 economies face physical and economic risks from climate change, which will have significant implications on future development prospects. Four ASEAN economies—Myanmar, the Philippines, Thailand, and Vietnam—were among the 10 economies in the world with the highest fatalities and economic losses due to weather-related disasters between 1999 and 2018; Cambodia came in close at twelfth place (Beirne, Renzhi, and Volz 2021; Eckstein and others 2019). The physical risks from climate change have been widely discussed in the literature, including AMRO (2018). These include raging forest fires, massive flooding, higher frequency of cyclones and droughts, as well as rising sea levels and frequent landslides, many of which were witnessed in the ASEAN+3 region in 2021, affecting economies' agricultural production, water availability, power supply, transport and infrastructure, tourism, and coastal resources.

In addition to the physical risks of climate change, ASEAN+3 economies also face transition risks from changing strategies, policies, and investments to reduce their reliance on carbon-based fuels and other carbon-intensive industries. Industries that are heavily reliant on fossil fuels are increasingly facing a greater regulatory burden amid calls to transition to a low-carbon economy. Over time, a large portion of reserves of oil, gas, and coal will most likely be left in the ground and discounted or written off from balance sheets. For example, if Indonesia, the Philippines, and Vietnam are to meet their commitments under the Paris Agreement, it is estimated that up to USD 60 billion of coal-fired plants could be stranded at retirement after 15 (rather than 40) years (ASEAN 2021). Transition risks are also likely to increase banks' credit risks (AMRO 2020).

Transition risks can arise from policy changes not just within but also outside the economy or region. If the Plus-3 economies were to transition in a way that is likewise compatible with the Paris Agreement, it will impact the profitability of coal mines elsewhere in the region, like in Indonesia. The European Union's shift away from palm oil biofuel toward deforestation-free products could lead to stranded landbanks for Malaysian and Indonesian conglomerates in oil palm plantations (ASEAN 2021). Additionally, the European Union's July 2021 proposal to implement a carbon border adjustment mechanism (CBAM) on extraregional energy-intensive imports—to initially cover electricity, iron and steel, fertilizers, aluminum, and cement projects—could make some ASEAN+3 exports to the bloc more expensive and thus uncompetitive in the medium term. For example, Malaysia CBAM exports to the European Union account for about seven percent of its total CBAM exports in 2019 (Vickers, Ali, and Powell 2021). However, a no-action scenario will be even costlier for the region in the long run, especially for ASEAN, making it critical for economies to achieve substantial progress in terms of their commitments (Anwar and others 2020).

Fortunately, progress has been made to a certain extent to date, with a number of medium- to long-term regional- and country-specific actions and policies in the ASEAN region—such as in the areas of coastal protection structures (Brunei); promotion of mangroves and developing tolerant crop varieties (Indonesia); developing appropriate crop management techniques (Lao PDR); and sustainable coastal development, climate-adapted technology, and organic farming (Malaysia) (Table 1.7.1).

Even so, many initiatives remain in the conceptual phase and need to be translated into actual policies and action plans before they can have an impact on mitigating the risks from climate change. This can be done by disincentivizing industries from maintaining (or increasing) their reliance on high carbon and polluting sectors—such as through emission or disposal fees, pollution taxes, or charges—and incentivizing them towards lower carbon and renewable energy alternatives and sustainable practices—e.g., through loans and grants for erosion control, land conservation, and large-scale recycling projects, as well as encouraging information disclosure on firm activities that meet environmentally-sustainable goals. At the regional level, examples of specific initiatives include the ASEAN Plan of Action for Energy Co-operation, which

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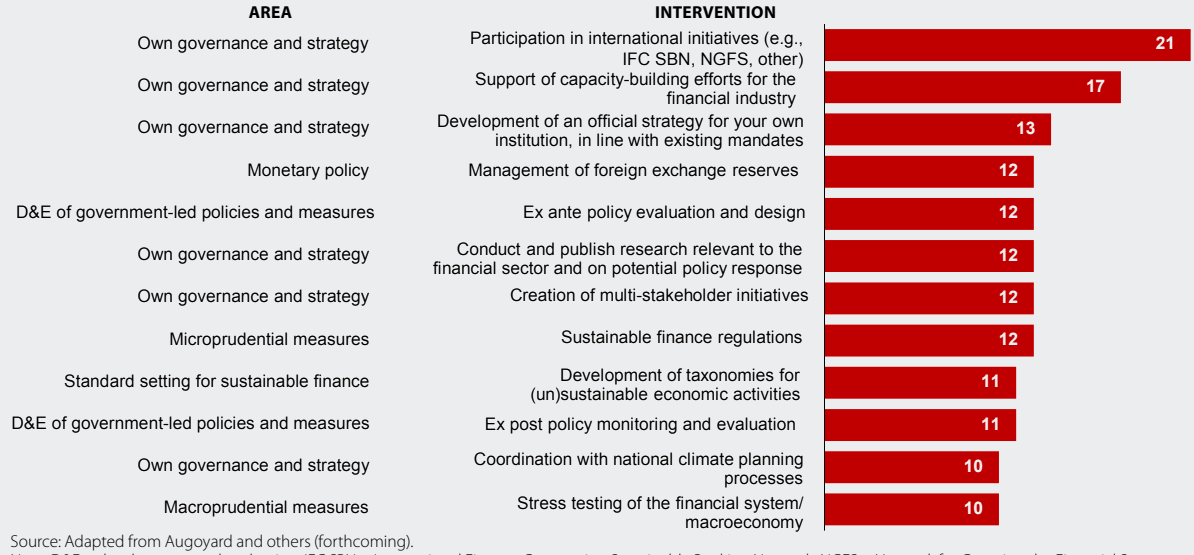
contains a renewable energy target of 23 percent in total primary energy supply by 2025 and the 2021 Forum on Carbon-Neutrality Goals of China, Japan, and Korea, focusing on how trilateral cooperation can accelerate the transition to net zero emissions through innovation, technology, and the sharing of best practices (UNESCAP 2021).[1]

Another policy area gaining popularity is carbon pricing—a key element that will help push the shift to a low-carbon economy. ASEAN+3 economies have increased regional discussions on this issue while balancing the need to reduce carbon use against the need to ensure economic growth, especially in the aftermath of the pandemic. In July 2021, China's national emissions trading scheme began operating—three years after its launch—aiming to be an important market-based instrument to help the economy achieve its climate goals. However, while there have been calls for a regionwide, common carbon tax in ASEAN, this is unlikely to be implemented in the short-term given the varying levels of reliance on carbon production and use across ASEAN members, particularly as they focus on post-pandemic recovery. Thus, even if an ASEAN-wide tax is implemented in the short term, it is unlikely to be high enough to discourage carbon use. Regional consensus regarding a sufficiently high carbon tax rate that can encourage the shift to other forms of energy is expected to become a key focus for ASEAN+3 regional priorities in the next few years.

One critical driver of climate change mitigation policies will be the financial sector, which can help push the rest of the economy in the desired direction by channeling credit toward low- or non-carbon based industries and renewable energy. Many central banks and financial supervisors in Asia have implemented or are starting to implement policies and regulatory measures which promote sustainable green finance, within their mandates (Figure 1.7.1). However, there is still room for stronger regulatory measures from central banks, financial supervisors, and government agencies in the ASEAN+3 to direct firms toward less intensive carbon usage and to increase their dependence on renewable energy and technologies. For example, a stronger focus on regulatory measures based on climate change risk criteria for the financial sector would directly flow through to the firms across the economy to price climate change risks into their products and incentivize the shift toward more renewable forms of energy use. Regulatory measures for the financial sector could include climate change risk-based stress testing, green supervisory reviews from central banks and financial supervisors, and higher capital risk weights for lending to sectors that have a higher-than-average carbon usage. Such measures should be undertaken by ASEAN+3 members if they are to properly deal with, and mitigate, the damaging effects of climate change in their economies and minimize spillovers to the rest of the region.

Figure 1.7.1. Asia: Measures Implemented by Central Banks and Financial Supervisors to Achieve Climate and Environmental Objectives
(Number of implementing central banks and financial supervisors)



Source: Adapted from Augoyard and others (forthcoming).
Note: D&E = development and evaluation; IFC SBN = International Finance Corporation Sustainable Banking Network; NGFS = Network for Greening the Financial System.

[1/] However, significant work will need to be undertaken in the next 3 years to meet this target, since renewable energy formed only about 14 percent of the total share of energy in ASEAN in 2017.

Table 1.7.1. Selected ASEAN+3: Medium- to Long-Term Adaptation Vision, Strategies, and/or Plans

Economy	Indicative Adaptation Strategies/Vision	Target Year	Adaptation Areas
Brunei	Brunei Darussalam National Climate Change Policy	2035	Generating awareness on adaptation; promotion of integrated adaptation solutions with mitigation co-benefits; integrated impact assessment tools; national climate risk framework, monitoring and evaluation; research on sea level rise; multi-stakeholder engagement; and consideration of nature-based solutions, coastal protection structures, and community based disaster-prevention. Research and mapping of sea level rise, flood risk mitigation, provision of nature-based solutions to prevent soil erosion and flooding, and community- and school-based disaster risk reduction.
Cambodia	National Strategic Plan on Green Growth 2013–30	2030	Green jobs; sustainable agriculture (green agriculture); resilient infrastructure; resilient financial systems; public-private partnerships; capacity building for resilience and environmentally sustainable solutions; strengthening the capacity of financial institutions; payment of ecosystem services; enhancing food security.
Indonesia	Roadmap Nationally Determined Contribution Adaptation	2030	Increasing economic resilience, social security, and livelihoods as well as ecosystem and landscape resilience.
	Climate Resilience Development Policy	2045	Prioritize marine and coastal, agriculture, water, and health sectors.
	Long Term Strategy	2050	Agriculture, forestry, and other land uses; energy; wastes; and industrial processes.
	Low Carbon Development Initiative	2060	Climate resilient agriculture; resilience to sea level rise; resilient lifestyles for farmers; economic resilience against climatic shocks; resilient infrastructure; promotion of mangroves; flood risk mitigation; developing tolerant crop varieties. Key sectors include agriculture, fisheries and marine resources, forests, water resources, infrastructure.
Lao PDR	National Green Growth Strategy	2030	Resilient natural resources; payment of ecosystem services; resilient agriculture; resilient rural economy; development of appropriate crop management techniques; climate resilient forestry; water resource information systems; resilient water infrastructure; strengthening of public health infrastructure.
	Agriculture and Forestry Research Strategy 2025 and the 'Vision up to 2030'	2030	Developing climate-smart agricultural practices through testing and scaling up technologies; improving practices to build farmers' capacity to adapt to climate change, policies, and institutions for climate-resilience through modeling; and scenario assessment and policy analysis for agriculture and food security under climate change.
Malaysia	National Renewable Energy Policy and Action Plan 2011	2030	Modern and resilient infrastructure; resilience-based and green jobs.
	Shared Prosperity Vision 2030	2030	Food sovereignty and security, sustainable coastal development, climate adapted technology and organic farming.
	Roadmap for the Water Sector Transformation 2040	2040	Climate change impact and adaptation.
The Philippines	National Climate Change Action Plan	2028	Enhancing adaptive capacity and resilience of communities and natural ecosystems to climate change; and adopting the total economic valuation of natural resources while ensuring biodiversity conservation, among others.
	Sustainable Finance Roadmap 2021	2030	Integrating sustainability considerations into macroeconomic policies and risk management in asset markets, mainstreaming sustainable finance, and developing a pipeline of sustainable investment projects.

Source: Various reports from national authorities.

III. AMRO Staff Macroeconomic Forecasts for 2022–23

The global economy is expected to continue to improve in 2022, albeit at a slower pace due to the spread of the Omicron variant and higher energy prices generated by the Russia-Ukraine conflict. Major advanced economies rebounded strongly in 2021, and while global growth is expected to slow down in 2022, it will still be above potential. Global inflation has turned out to be higher and more persistent than expected. The Russia-Ukraine conflict will also exert additional upward price pressures, particularly on energy and food. Given gradual policy normalization by major advanced economies and the continuing rebound in economic activities, most ASEAN+3 economies are expected to begin unwinding their fiscal and monetary policy support during the year. Global supply chain bottlenecks are assumed to have peaked in the fourth quarter of 2021 and to ease in 2022, barring prolonged shipping-lane and airspace restrictions arising from the Russia-Ukraine conflict. While global economies continue to reopen, high costs and burdensome protocols will limit the scale of resumption in travel activities, particularly in the first half of 2022, and international tourism is not expected to return to pre-pandemic levels until mid-2023.

Against this backdrop, the ASEAN+3 region is expected to grow at a more moderate pace of 4.7 percent in 2022 (Table 1.4). The ongoing Russia-Ukraine conflict is expected to have a limited impact on the region's GDP growth in 2022 given regional economies' small exposure to the two economies engaged in the conflict. An escalation and prolongation of the conflict would, however, pose a downside risk to growth (Box 1.8).

- GDP growth in China, Hong Kong, and Korea, which rebounded strongly in 2021 after these economies' early success in containing the COVID-19 spread, is expected to moderate to a more sustainable pace in 2022. Japan, whose recovery momentum was weakened by the Delta outbreak, is expected to grow more strongly by 2.9 percent in 2022.

- After a weaker rebound in 2021, the ASEAN economies as a group are poised to register a stronger expansion of 5.1 percent in 2022. Economies that were weighed down by the Delta outbreak (Indonesia, Malaysia, the Philippines, Thailand, and Vietnam) are projected to see firmer growth this year. The forecast rests mainly on the expected gradual reopening of the region following the successful vaccination of more than 80 percent of the population in 7 out of the 10 economies. Economic activity will also benefit from a partial resumption of travel and tourism activity, particularly in the second half of the year— for example, Thailand has resumed quarantine-free travel since February 1, 2022, while the Philippines has reopened tourism to fully vaccinated travelers from February 10, 2022. The exception in the ASEAN group is Singapore, where GDP growth—which rebounded strongly in 2021 thanks to rapid vaccination progress and strong exports—is expected to moderate in 2022, similar to China, Hong Kong, and Korea.

The region is expected to sustain a growth rate of 4.6 percent in 2023 as the economic recovery continues. While some ASEAN economies, such as Cambodia, Lao PDR, and Thailand, would register stronger growth as their economies reopen and tourism recovers more fully in 2023, others, such as Malaysia, Singapore, and Vietnam, are projected to moderate to a more sustainable trend growth rate. The Plus-3 economies are forecast to register more moderate, near-trend growth in 2023 after narrowing the output gap in 2022.

AMRO staff's adverse scenario puts the region's GDP growth at 3.9 percent in 2022 and 3.5 percent in 2023 (Figure 1.51). In the adverse scenario, the Russia-Ukraine conflict would be protracted, lasting beyond 2023. Commodity prices would remain volatile and high throughout the duration of the geopolitical tension. At the same time, more virulent COVID-19 strains could emerge by the end of 2022, necessitating targeted containment measures in major advanced economies and the ASEAN+3 region to slow the spread of infections. The shortage of raw materials and intermediate inputs would accelerate price pressures and weigh on private sector activities. The renewed suspension of economic activities would exacerbate scarring in the region's economies, further dampening growth.

AMRO staff's upside scenario puts the region's GDP growth at 5.4 percent in 2022 and 5.7 percent in 2023. In the upside scenario, the Russia-Ukraine conflict is resolved within the first half of 2022 and the ongoing economic reopening is faster than expected, culminating in all containment measures being removed by end of 2022. The resolution of the conflict in Europe and the earlier resumption of economic activities would reduce price pressures and support a stronger economic recovery. Economic scarring would be limited to sectors that have been affected thus far, with workers and firms able to shift to new growth areas seamlessly (Box 1.8).

Headline inflation for the ASEAN+3 region is forecast to increase to 3.5 percent in 2022 and moderate to 2.3 percent in 2023. The increase in inflation this year reflects base year effects, the removal of subsidies on energy and some essential products, and supply-side constraints that are pushing up the costs of raw materials, energy, transportation, and food. The inflation outlook is dependent on global commodity price developments and the strength of the economic recovery. Persistent disruptions to global supply chains, including from the Russia-Ukraine conflict, could see higher imported inflation and greater pass-through from PPI inflation to CPI inflation. With domestic demand expected to recover in tandem with the gradual economic reopening throughout the region this year, further rounds of containment measures could dampen demand and temper inflationary pressures.

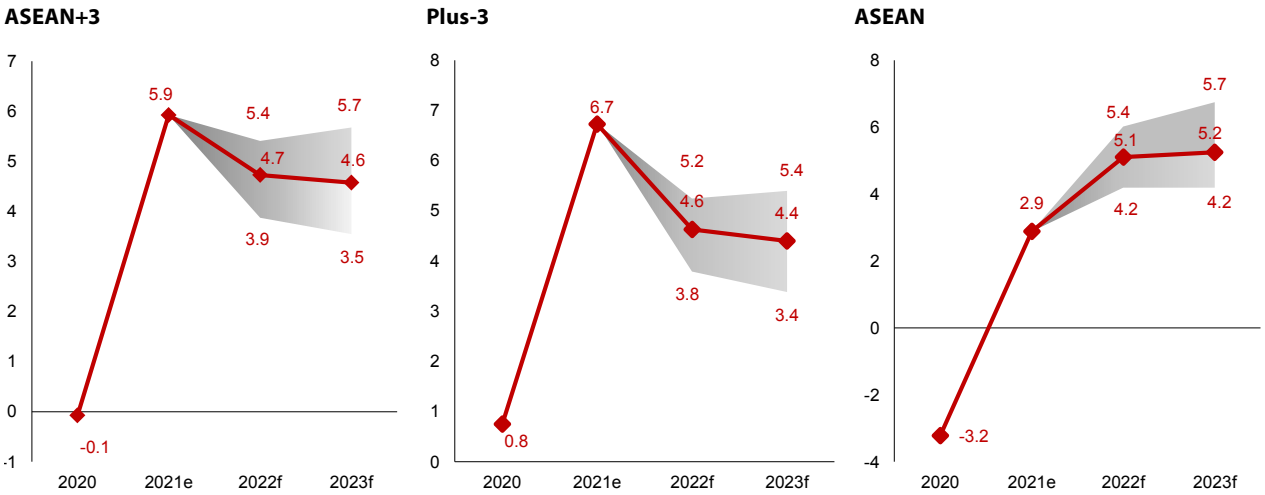
In 2023, inflation is expected to moderate to a longer-term trend for most economies, except Brunei and Indonesia. Inflation is expected to remain unchanged in Brunei as the decline in food prices following the easing of supply chain disruptions is offset by rising demand pressures stemming from the delayed recovery in economic activity. Meanwhile, the slight increase in Indonesia's inflation is supported by a pick-up in economic activities and mainly reflects its return to long term trends, as well as Bank Indonesia's headline inflation target range of 3.0 ± 1.0 percent.

Table 1.4. ASEAN+3: AMRO Staff Growth and Inflation Estimates and Forecasts, 2022–23
(Percent, year-on-year)

Economies	GDP Growth			Inflation		
	2021e	2022f	2023f	2021e	2022f	2023f
ASEAN+3	**5.9**	**4.7**	**4.6**	**2.1**	**3.5**	**2.3**
Plus-3	**6.7**	**4.6**	**4.4**	**1.2**	**2.1**	**1.7**
China	8.1	5.2	5.3	0.9	2.2	2.0
Hong Kong	6.4	2.8	3.2	1.6	2.0	2.3
Japan	1.6	2.9	1.2	-0.3	1.1	0.5
Korea	4.0	3.0	2.6	2.5	2.9	1.9
ASEAN	**2.9**	**5.1**	**5.2**	**2.5**	**4.1**	**2.6**
Brunei	0.2	4.1	2.3	1.7	1.3	1.3
Cambodia	2.9	5.2	6.1	2.9	5.0	3.7
Indonesia	3.7	5.2	5.3	1.6	2.8	3.0
Lao PDR	2.6	3.9	5.9	3.8	5.0	3.5
Malaysia	3.1	6.0	5.0	2.5	2.7	2.0
Myanmar	-18.7	1.5	–	3.6	9.5	–
Philippines	5.6	6.5	6.5	3.9	4.1	3.5
Singapore	7.6	4.0	2.6	2.3	3.3	2.0
Thailand	1.6	3.4	5.2	1.2	4.2	1.8
Vietnam	2.6	6.5	7.0	1.8	3.4	3.0

Sources: National authorities via CEIC and Haver Analytics; and AMRO staff estimates and forecasts.
Note: e refers to AMRO staff estimates, and f refers to AMRO staff forecast. Myanmar's growth numbers are based on its fiscal year, from October 1 to September 30.

Figure 1.51. ASEAN+3: GDP Growth Forecasts under AMRO Staff Scenarios
(Percent, year-on-year)



Sources: National authorities via Haver Analytics; Oxford Economics Global Model; and AMRO staff estimates.
Note: e refers to AMRO staff estimates, and f refers to AMRO staff forecast.

Box 1.8:

AMRO Staff Macroeconomic Forecasts: Baseline, Adverse, and Upside Scenarios

To complement the baseline forecast, AMRO staff simulated upside and downside scenarios to assess the potential impact of the risk factors presented in the Global Risk Map for AMRO's baseline projections for 2022 and 2023. The simulations were run using Oxford Economics' Global Economic Model, which covers all ASEAN+3 economies with an underlying data set that is updated every month.[1] The assumptions used in the baseline, adverse, and upside scenarios are as follows (Figures 1.8.1 and 1.8.2).

Baseline scenario: COVID-19 becomes endemic and the Russia-Ukraine conflict is resolved in the second half of 2022. High vaccination coverage, including booster doses, enables all ASEAN+3 economies to continue relaxing pandemic containment measures. Current vaccination regiments are broadly successful in protecting against future COVID-19 variants. Broad-based movement restrictions are therefore no longer necessary to contain the spread of the COVID-19 virus. Social distancing requirements and border restrictions would be gradually scaled back, with full relaxation of measures by the middle of 2023. The Russia-Ukraine conflict is expected to die down after the second quarter of 2022. Energy price increases and their knock-on effects on transportation costs would similarly peak in the second quarter of 2022 and moderate thereafter. After the first hike in March 2022, the Fed would raise interest rates six more times in 2022, in line with the forward guidance issued. Some households and firms, particularly in sectors hard-hit by the pandemic, would face financial distress until they can transition to new jobs and businesses; there would be some business closures, but continued targeted fiscal support would prevent widespread bankruptcies and layoffs. Unemployment rates would recover to pre-pandemic levels by mid-2023.

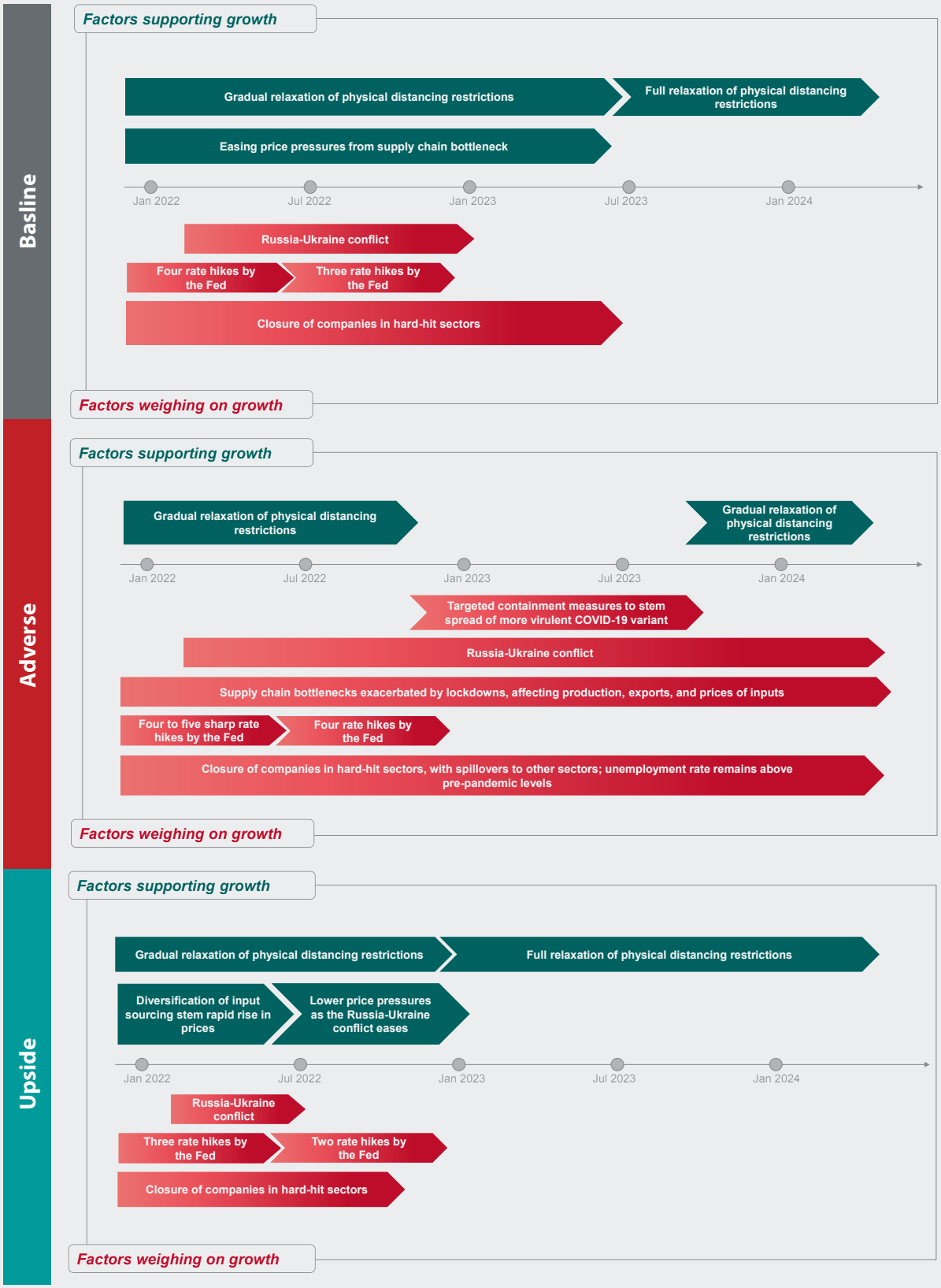
Adverse scenario: The Russia-Ukraine conflict is prolonged and compounded by the emergence of a more virulent COVID-19 variant. The Russia-Ukraine conflict extends beyond 2023. International sanctions against Russia remain in place for a protracted period, restricting the supply of energy products globally. Energy prices rise and remain elevated throughout the duration of the conflict. A more virulent strain of COVID-19 emerges that is resistant to existing vaccines. While blanket lockdowns are not expected, containment measures are likely to be tightened significantly to stem the spread of infections. Physical distancing measures and border restrictions are therefore retightened in the fourth quarter of 2022. Targeted lockdowns in major production nodes within the global supply chain disrupt production activity and exports across the region. The shortage of raw materials and intermediate goods would compound price pressures from already-rising global inflation and high commodity prices. The Fed would raise interest rates more than seven times, and/or by more than a cumulative 250 basis points, in 2022 to address rising inflationary pressures. The reimposition of containment measures and the shrinking fiscal space for continued expansive policy support would intensify financial distress among households and businesses in the ASEAN+3 region, creating deeper economic scars. Unemployment rates would stay above pre-pandemic levels beyond 2023.

Upside scenario: Faster-than-expected economic reopening and swift resolution of the Russia-Ukraine conflict. Regional economies ease physical distancing measures and border restrictions given the milder effects of the Omicron variant. The pace of economic reopening is accelerated so that all COVID-19-related measures are removed by the end of 2022. The Russia-Ukraine conflict is resolved in the second quarter of 2022. With the resolution of the geopolitical tension, the supply of crucial raw materials is restored and inflationary pressures ease earlier compared to the baseline scenario. The Fed would therefore normalize interest rates at a pace that is in tandem with the recovery in the global economy. Economic scarring would be limited to sectors that have been affected to date, with no sharp increase in bankruptcies or NPLs when policy support is removed. The labor market would continue recovering, with unemployment rates declining to pre-pandemic levels by the end of 2022, as firms move to new growth areas.

The author of this box is Catharine Tjing Yiing Kho.

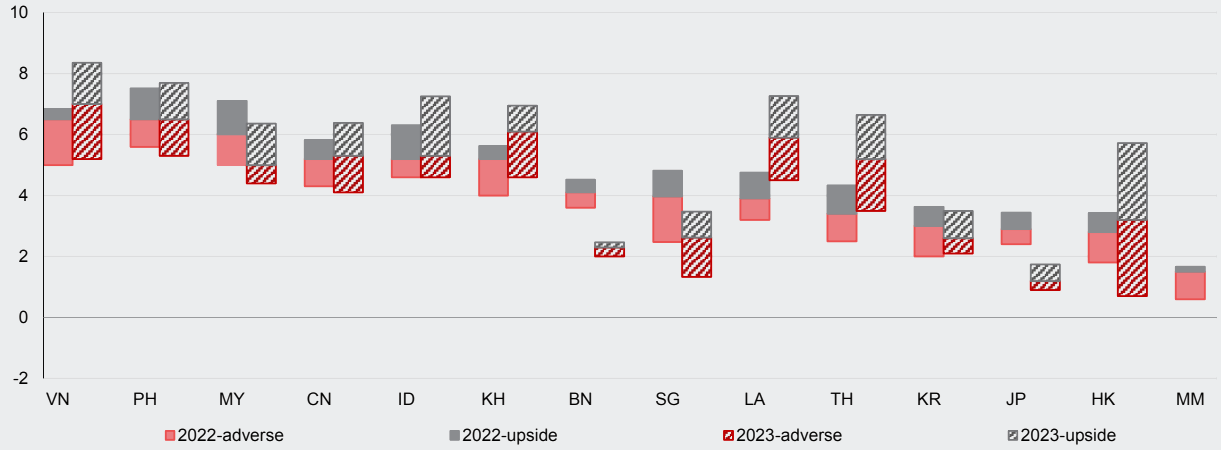
1/ The model consists of a system of equations with macroeconomic variables that include GDP and its components, prices, exchange rates, and interest rates. The Global Economic Model is essentially an error-correction model that estimates how quickly a variable returns to its equilibrium state after a shock; hence, it estimates both the short-term and long-term effects of the shock on the variable. In the short term, the model assumes sticky factor prices and aggregate demand-determined output. In the long term, the model assumes that prices adjust fully, and the equilibrium is determined by supply factors such as productivity, labor, and capital. For this exercise, only the short-term estimates are presented.

Figure 1.8.1. Summary of Key Assumptions



Source: AMRO staff.
Note: The Fed = US Federal Reserve.

Figure 1.8.2. ASEAN+3: Projected GDP Growth Ranges, 2022–23
(Percent, year-on-year)



Sources: Oxford Economics; and AMRO staff estimates.
Note: BN = Brunei; CN = China; HK = Hong Kong; ID = Indonesia; JP = Japan; KH = Cambodia; KR = Korea; LA = Lao PDR; MY = Malaysia; MM = Myanmar; PH = the Philippines; SG = Singapore; TH = Thailand; and VN = Vietnam.

IV. Policy Considerations

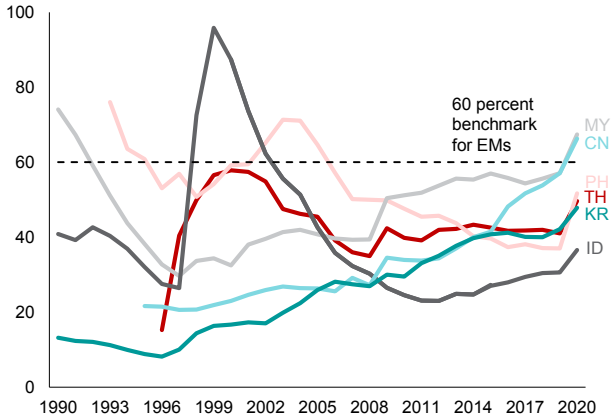
Macroeconomic and macroprudential policies in the ASEAN+3 by and large continue to be focused on alleviating the impact of the pandemic and supporting an economic recovery. The proactive and exceptionally large support and stimulus programs introduced to counter the economic fallout of the pandemic in 2020 were followed by a more targeted and calibrated approach in many of the region's economies in 2021. Looking ahead in 2022, given the less supportive global policy settings, regional policymakers will have to undertake a crucial balancing act—avoiding a premature withdrawal of policy support in view of the still nascent economic recovery especially in the close-contact services sectors, while at the same time, facilitating the reallocation of capital and labor to new and expanding sectors, and rebuilding policy space to prepare for future shocks.

Policy Space

Fiscal space remains moderate to ample in most ASEAN+3 economies. The ASEAN+3 economies entered the pandemic with substantial policy space and reserves, but over the last two years, most authorities across the region have rolled out large fiscal packages and have continued to extend financial support to firms and households badly affected by the pandemic and containment measures. As a result, public debt ratios have increased markedly since the outbreak of the pandemic (Figure 1.52 and Figure 1.53). Thailand raised its public debt ceiling from 60 percent to 70 percent of GDP in September 2021 to support further fiscal outlays, and Malaysia raised its debt ceiling from 60 percent to 65 percent of GDP from October 2021 until at least the end of 2022. Vietnam is also planning to follow suit. In Indonesia, the temporary suspension of the budget deficit ceiling through 2022 has provided the fiscal authorities room and flexibility to undertake pandemic policy response. At the same time, fiscal support measures in some economies are shifting from broad-based support to being increasingly targeted to sectors that are hard-hit by the pandemic. Notwithstanding the increase in public debt levels, AMRO staff's assessment is that all economies, except Japan, Lao PDR, and Myanmar, have moderate-to-ample fiscal headroom, with manageable debt-to-GDP ratios (Table 1.5).

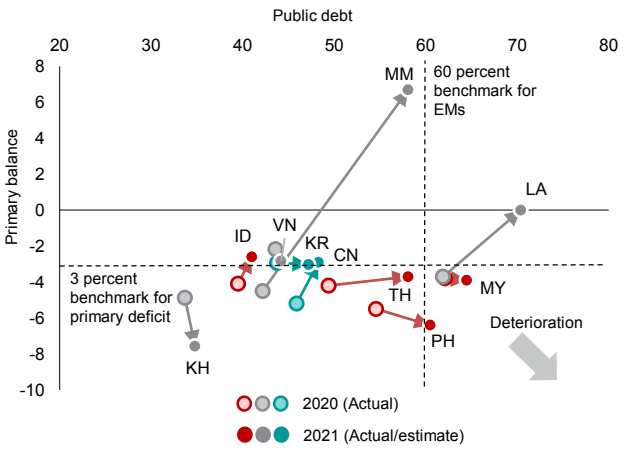
Monetary policy space across the region has narrowed following significant easing measures to support the economy in the wake of the pandemic. After cutting reserve requirement ratios and policy interest rates to ease liquidity and monetary conditions in 2020, most central banks in the region have continued to maintain a largely accommodative monetary policy stance—refraining from further loosening, but also from reversing course. The three exceptions are China, which normalized its monetary policy stance ahead of most countries in line with its business cycle, and Korea and Singapore, where policy normalization began in the second half of 2021, reflecting the strong economic rebound amid firmer inflation, as well as the desire to guard against a buildup of financial stability risks. Similarly, macroprudential policies, especially credit and forbearance policies, remain

Figure 1.52. Selected ASEAN+3: General Government Debt
(Percent of GDP)



Source: IMF International Financial Statistics (IFS) database via Haver Analytics.
Note: CN = China; ID = Indonesia; KR = Korea; MY = Malaysia; PH = the Philippines; and TH = Thailand. EM = emerging market.

Figure 1.53. Selected ASEAN+3: Public Debt and Primary Balance, 2020–21
(Percent of GDP)



Sources: National authorities via Haver Analytics; and AMRO staff estimates.
Note: CN = China; ID = Indonesia; KH = Cambodia; KR = Korea; LA = Lao PDR; MM = Myanmar; MY = Malaysia; PH = the Philippines; TH = Thailand; and VN = Vietnam. EM = emerging market.

relatively loose across the region to mitigate the risks of financial distress of households and corporates which are still affected by the economic downturn and struggling to service their debt (Table 1.6). Monetary policy space is assessed by AMRO staff to be moderate in most regional economies, except for Japan, Cambodia, Lao PDR, and Myanmar where policy space is limited due to the zero lower bound or high degree of dollarization (Table 1.5).

Table 1.5. ASEAN+3: Assessment of Policy Space
(Position as of end-2021 compared to end-2020)

Policy space		Fiscal		
		Ample	Moderate	Limited
Monetary	Ample			
	Moderate	Korea Singapore	China Indonesia Korea Malaysia Myanmar Philippines Thailand Vietnam	
	Limited	Brunei Cambodia Hong Kong	Brunei Cambodia	Japan Lao PDR Myanmar

Source: AMRO staff estimates, based on Poonpatpibul and others (2020).
Note: Red font denotes an economy's policy space assessment in the pre-pandemic period; arrow indicates the shift in an economy's policy space assessment from the pre-pandemic period to the current period (in black font). This framework does not necessarily take into account the ability and capacity of monetary authorities to undertake unconventional monetary policy.

Policy Positions

Most ASEAN+3 economies are consolidating fiscal policies and adopting a more contractionary fiscal stance in 2022. In view of the gradual normalization in economic activities as containment measures are progressively rolled back, the authorities are gradually unwinding fiscal stimulus policies (Figure 1.55). However, the fiscal stance is expansionary in China and Thailand and neutral in Malaysia, the Philippines, and Vietnam. China has adopted a more expansionary fiscal position to boost the economy following a slowdown in the second half of 2021; Thailand has continued its fiscal support for the tourism-oriented economy which is still badly affected by international border closures and domestic containment measures. Malaysia, the Philippines, and Vietnam are maintaining their fiscal impulse to sustain the growth momentum in their economies. AMRO staff broadly concurs with the fiscal stance adopted by the region's economies. However, staff is of the view that an easing bias would be more appropriate for Vietnam in case downside risks materialize.

The monetary policy stance remains broadly accommodative across the region (Figures 1.54 and 1.55). Following the recent cuts in policy rates and the reserve requirement ratio, China's monetary policy stance is assessed to be appropriately supportive of economic growth. Monetary policy conditions in Myanmar remain tight given the ongoing state of emergency. While Korea has begun interest rate normalization and Singapore has raised the slope of its Singapore dollar nominal effective exchange rate policy band from zero percent, the monetary policy stance is assessed to be still accommodative and supportive of the further recovery in these economies. With the recovery in growth momentum expected to be sustained, AMRO staff recommends that the central banks in these two economies continue their monetary policy normalization path to minimize financial stability risks as the economic recovery continues. Similarly, Malaysia should be prepared to normalize its monetary policy later in the year in tandem with an improvement in its growth trajectory. The monetary policy stance in the rest of the region's economies should be maintained to support their economic recovery.

Most of the region's economies are maintaining the accommodative macroprudential stance they introduced at the start of the pandemic—reserve requirement ratios, countercyclical capital buffers, and liquidity coverage ratios that were lowered in 2020 have not been raised, ensuring continued liquidity support to households, businesses, and financial institutions. Malaysia, Myanmar, and Vietnam have tapered macroprudential accommodation to some degree, but not to the extent of tightening macroprudential policies. For example, Malaysia abolished the property gains tax for properties sold after being owned for five years but retained the tax for properties divested after less than five years. Economies that rebounded well in the past year, namely China, Korea, and Singapore, have continued to tighten their macroprudential policies to reduce upward price pressures in their property markets. AMRO staff assesses the current

policy stance for all economies to be appropriate, with the exception of Cambodia, where some reduction in the degree of macroprudential policy accommodativeness is recommended given its firm economic recovery.

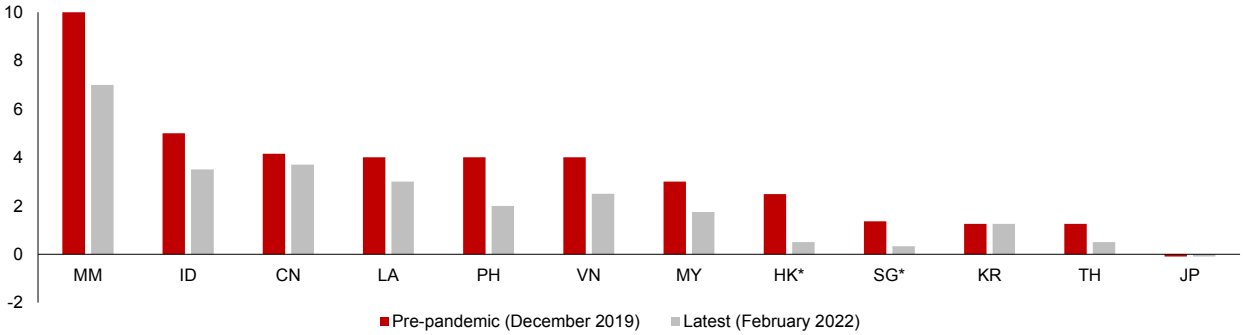
Credit policy remains accommodative in all economies, except China and Myanmar. Across the region, measures such as credit guarantees, repayment deferment programs, soft loans, and concessionary loans have been maintained (or extended). However, the continuation of these supportive measures would be state-dependent (such as economies' position in the COVID cycle) and would not be expected to continue indefinitely. In China, while liquidity remains ample, the extension of credit has been shifted toward priority sectors, such as SMEs, technology, and green sectors. AMRO staff concurs with the credit policy in all economies except Lao PDR, where more credit could be extended to SMEs to boost the economic recovery.

Table 1.6. ASEAN+3: Regulatory Forbearance, February 28, 2022

Measures	Economies
Loosen capital or liquidity requirements	• Cambodia (no specified end date) • Hong Kong (CCB, no specified end date; Basel III, Jan-23) • Indonesia (CCB, LCR, and NSFR, extended through Mar-22; Basel III reforms on RWA and CVA to Jan-23) • Japan (no specified end date) • Korea (LCR for foreign currencies, Mar-21, first extended to Sep-21, and again to Mar-22) • Malaysia (80 percent NSFR until Sep-21) • Myanmar (Apr-23) • Singapore (CAR and LCR, Sep-21; Basel III, Jan-23) • Vietnam (timeframe for tightening liquidity requirements was extended)
Loosen loan classification	• Hong Kong (no specified end date) • Indonesia (initially until Mar-21, first extended to Mar-22, and again to Mar-23) • Lao PDR (Jul-21) • Malaysia (extended through Dec-21) • Singapore (Sep-21) • Thailand (end-2023) • Vietnam (Jan-24)
Debt relief or restructuring	• Brunei (deferment of loan repayment, loan restructuring, conversion of credit card outstanding balance extended until Jun-22) • Cambodia (extended through Jun-22) • Hong Kong (pre-approved principal payment holiday scheme extended to Apr-21; SME guarantee scheme to Jun-21; 100 percent personal loan guarantee scheme to Jun-21; repayment of trade facilities deferred for another 90 days to Oct-21) • Indonesia (loan restructuring initially until Mar-21, first extended to Mar-22, and again to Mar-23) • Korea (loan moratorium for SMEs, Mar-21, first extended to Sep-21, and again to Mar-22) • Lao PDR (Jul-21) • Malaysia (extended through Dec-21) • Myanmar (no official guidance, subject to banks' own discretion) • Philippines (loan moratorium, Dec-20; NPL non-recognition, Dec-2021; no restructuring policy) • Singapore (lifted on Sep-21) • Thailand (broad-based/blanket loan payment holiday replaced by targeted, case-to-case-basis debt relief measures, and a long-term restructuring program) • Vietnam (3 months after Prime Minister announces official end of COVID-19)

Source: AMRO staff compilation.
Note: CAR = capital adequacy ratio; CCB = capital conservation buffer; CVA = credit valuation adjustment; LCR = liquidity coverage ratio; NPL = nonperforming loan; NSFR = net stable funding ratio; RWA = risk-weighted assets; and SMEs = small and medium-sized enterprises.

Figure 1.54. Selected ASEAN+3: Key Interest Rates
(Percent, end-of-period)



Sources: National authorities via Haver Analytics; and AMRO staff calculations.
Note: Asterisk (*) indicates that data used are monthly average market-based rates instead of end-of-period rates. Key interest rates vary across economies and could refer to the policy rate, the refinancing rate, the discount rate, the overnight repo rate, among others. Brunei and Cambodia are excluded from the sample given the current design of their monetary policy framework.
CN = China; HK = Hong Kong; ID = Indonesia; JP = Japan; KR = Korea; LA = Lao PDR; MM = Myanmar; MY = Malaysia; PH = the Philippines; SG = Singapore; TH = Thailand; and VN = Vietnam.

Figure 1.55. ASEAN+3: AMRO Staff Assessment of Current Policy Stance and Policy Recommendations

Source: AMRO staff estimates.
Note: Asterisk (*) denotes fiscal year of April 1 to March 31. For Brunei and Hong Kong, which have a currency board arrangement, the current monetary stance refers to current monetary conditions. Credit policy refers to policies relating to credit extended to the real and property sectors, as well as to regulatory forbearance for banks.

Appendix 1.1: Selected Key Macroeconomic and Financial Indicators

Appendix Table 1.1.1. ASEAN+3: Selected Key Macroeconomic and Financial Indicators

	2020	2021 e	2022 f	2023 f
Brunei				
Real GDP growth (percent, year-on-year)	1.1	0.2	4.1	2.3
Headline inflation (period average, percent, year-on-year)	1.9	1.7	1.3	1.3
Current account balance (percent of GDP)	4.5	8.2	10.9	11.4
General government fiscal balance (percent of GDP)	–20.1	–9.1	–6.0	–3.2
Cambodia				
Real GDP growth (percent, year-on-year)	–3.1	2.9	5.2	6.1
Headline inflation (period average, percent, year-on-year)	2.9	2.9	5.0	3.7
Current account balance (percent of GDP)	–11.9	–41.6	–14.5	–8.5
General government fiscal balance (percent of GDP)	–5.3	–9.2	–5.3	–6.1
China				
Real GDP growth (percent, year-on-year)	2.2	8.1	5.2	5.3
Headline inflation (period average, percent, year-on-year)	2.5	0.9	2.2	2.0
Current account balance (percent of GDP)	1.9	1.8	1.1	1.2
General government fiscal balance (percent of GDP)	–6.2	–3.8	–4.9	–5.0
Hong Kong				
Real GDP growth (percent, year-on-year)	–6.5	6.4	2.8	3.2
Headline inflation (period average, percent, year-on-year)	0.3	1.6	2.0	2.3
Current account balance (percent of GDP)	6.5	5.5	4.7	4.0
General government fiscal balance (percent of GDP)	–8.7	0.7	–1.8	1.3
Indonesia				
Real GDP growth (percent, year-on-year)	–2.1	3.7	5.2	5.3
Headline inflation (period average, percent, year-on-year)	2.0	1.6	2.8	3.0
Current account balance (percent of GDP)	–0.4	0.3	–1.2	–2.0
General government fiscal balance (percent of GDP)	–6.1	–4.6	–3.2	–3.0
Japan				
Real GDP growth (percent, year-on-year)	–4.5	1.6	2.9	1.2
Headline inflation (period average, percent, year-on-year)	0.0	–0.3	1.1	0.5
Current account balance (percent of GDP)	3.0	2.8	2.4	2.7
General government fiscal balance (percent of GDP)	–10.0	–9.4	–5.7	–4.7
Korea				
Real GDP growth (percent, year-on-year)	–0.9	4.0	3.0	2.6
Headline inflation (period average, percent, year-on-year)	0.5	2.5	2.9	1.9
Current account balance (percent of GDP)	4.6	5.1	2.9	2.4
General government fiscal balance (percent of GDP)	–3.7	–4.4	–3.2	–3.6

Appendix 1.1: Selected Key Macroeconomic and Financial Indicators

Appendix Table 1.1.1. ASEAN+3: Selected Key Macroeconomic and Financial Indicators (Continued)

	2020	2021 e	2022 f	2023 f
Lao PDR				
Real GDP growth (percent, year-on-year)	3.3	2.6	3.9	5.9
Headline inflation (period average, percent, year-on-year)	5.1	3.8	5.0	3.5
Current account balance (percent of GDP)	–0.6	1.1	–0.8	–0.4
General government fiscal balance (percent of GDP)	–5.2	–2.0	–2.5	–2.5
Malaysia				
Real GDP growth (percent, year-on-year)	–5.6	3.1	6.0	5.0
Headline inflation (period average, percent, year-on-year)	–1.2	2.5	2.7	2.0
Current account balance (percent of GDP)	4.2	3.5	3.7	3.6
General government fiscal balance (percent of GDP)	–6.2	–6.4	–5.9	–5.0
Myanmar				
Real GDP growth (percent, year-on-year)	3.2	–18.7	1.5	—
Headline inflation (period average, percent, year-on-year)	5.8	3.6	9.5	—
Current account balance (percent of GDP)	–2.5	–1.8	–0.6	–0.3
General government fiscal balance (percent of GDP)	–6.2	–8.6	–6.0	–5.6
The Philippines				
Real GDP growth (percent, year-on-year)	–9.6	5.6	6.5	6.5
Headline inflation (period average, percent, year-on-year)	2.4	3.9	4.1	3.5
Current account balance (percent of GDP)	3.1	–1.0	–1.9	–1.5
General government fiscal balance (percent of GDP)	–7.6	–8.6	–7.8	–6.3
Singapore				
Real GDP growth (percent, year-on-year)	–4.1	7.6	4.0	2.6
Headline inflation (period average, percent, year-on-year)	–0.2	2.3	3.3	2.0
Current account balance (percent of GDP)	16.8	18.1	17.7	17.0
General government fiscal balance (percent of GDP)	–10.8	–0.9	–0.5	0.8
Thailand				
Real GDP growth (percent, year-on-year)	–6.1	1.6	3.4	5.2
Headline inflation (period average, percent, year-on-year)	–0.8	1.2	4.2	1.8
Current account balance (percent of GDP)	4.2	–2.2	–2.3	1.4
General government fiscal balance (percent of GDP)	–5.2	–4.7	–4.3	–3.6
Vietnam				
Real GDP growth (percent, year-on-year)	2.9	2.6	6.5	7.0
Headline inflation (period average, percent, year-on-year)	3.2	1.8	3.4	3.0
Current account balance (percent of GDP)	4.5	–1.6	3.0	3.3
General government fiscal balance (percent of GDP)	–3.5	–4.1	–4.6	–4.8

Sources: National authorities via CEIC and Haver Analytics; and AMRO staff estimates.
Note: "e" denotes AMRO staff estimates, "f" denotes AMRO staff forecasts. Numbers in red denote AMRO staff estimates and forecasts. Data are for the calendar year, except for general government fiscal balances and Myanmar (fiscal year). Data for 2021 are AMRO staff estimates, where actual data are not yet available.

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