Chapter 2.

ASEAN+3 Growth Strategy in the Pandemic's Wake

Highlights

- COVID-19 has been a major disruptor—as well as a catalyst for change. The evolving virus and the policies implemented to contain it have exacted a heavy toll on economic activity and populations in the ASEAN+3 region. At the same time, the pandemic has precipitated changes in business operations, technology adoption, social norms, and consumer behavior that are likely to endure long after the crisis ends.

- What does this mean for the ASEAN+3's established growth strategy of moving up the technological value chain, developing services as a second driver of growth, and leveraging digital technology to meet the region's burgeoning consumer demand? Will the pandemic jeopardize the hitherto remarkable upward trajectory of regional incomes by leaving scars on member economies' output potential?

- Some extent of scarring is unavoidable—although it will take various forms in different economies, and some economies will be more affected than others. Scarring of the labor supply will be felt most strongly in the region's aging economies: birth rates have fallen (further); labor force participation rates have declined; and prolonged border closures could discourage future immigration. Scarring of the capital stock will affect the region's emerging and developing economies, as rebuilding of fiscal buffers and high debt-service burdens could constrain investments in infrastructure, especially those needed for digitalization. And scarring of productivity will have an impact across the region, as extended school closures and unemployment durations have eroded human capital, and prolonged policy support could delay the reallocation of resources needed for economies to adjust to the post-pandemic new normal.

- The pandemic has dealt a blow to some services but has provided a boost to others. Travel and tourism, in particular, have borne the brunt of lockdowns and containment measures, and their (likely slow) recovery will hinge on success in adapting to the significant changes to travel preferences and behavior introduced by COVID-19, such as a greater emphasis on hygiene and contactless interactions. On the bright side, digitally supplied services, including e-commerce, digital financial services, telehealth, and modern services, have thrived during the pandemic and have strong potential as future growth drivers.

- Crippling supply chain disruptions over the past year have thrown into question existing global value chain (GVC) paradigms and the relevance of the region's manufacturing-for-export strategy. But notwithstanding increasing interest in near- and reshoring production to protect critical supply chains, COVID-19 has not diminished ASEAN+3 economies' fundamental advantages as GVC locations. The newly implemented Regional Comprehensive Economic Partnership provides an additional boost for supply chains to be located in the region.

- Looking ahead, ASEAN+3 economies must prioritize building resilient systems, characterized by scalable healthcare systems, continuous training and upgrading, constant innovation, competitive business environments, and sustainable fiscal positions. Closer intraregional cooperation—in areas of supply chain security, interconnectivity, cross-border flows, and digital integration—will further expand the region's opportunities to secure post-pandemic growth, minimize scarring, and prepare for future shocks.

I. Introduction

This thematic chapter reflects on the impact of the COVID-19 pandemic on medium- to long-term growth in the ASEAN+3 region. Although the crisis is by no means over as yet, as we pass its two-year anniversary, it is time to take stock of the lasting changes in the region's economies caused by the pandemic and policy responses to the pandemic. The crisis will eventually end; it is time to look ahead at the new normal and the region's growth strategy in the pandemic's wake. This chapter builds on the narrative of past AREO thematic chapters, which laid out how the region's economies must look beyond the traditional manufacturing-for-export strategy and ride the "new economy" growth paradigm to help create more options to generate growth.

The key elements of the region's growth strategy were formulated against the backdrop of rapid technological advances and the sharp rise in regional income. As elucidated in AMRO (2018, 2020a), they involve moving up the technological value chain, developing services as a second driver of growth and employment, and leveraging the new digital technology to develop products and services to meet the burgeoning consumer demand in the region.

Has COVID-19 upended this strategy? After more than two years, the COVID-19 health and economic crisis could have left permanent scars on ASEAN+3 economies, causing lasting damage to their output potential and to the region's medium- and long-term growth. The crisis could also redefine the landscape of regional demand and growth drivers by precipitating changes in business operations, technology adoption, social norms, and consumer behavior that will endure after the pandemic ends.

The objective of this chapter is to assess the potential nature and extent of economic scarring caused by the COVID-19 crisis and to consider the implications of the pandemic for the region's growth strategy going forward. It takes a systematic look at the following questions:

- What are the possible channels of scarring in the current setting, and how badly could they damage the region's output potential in the medium to long term?
- How will the COVID-19 pandemic affect the region's established strategy for growth? Will the pandemic put paid to the manufacturing-for-export growth strategy? How will the pandemic affect the region's prospects of developing services as a second engine of growth?
- What are the challenges and policy priorities for the region as it embarks on its post-pandemic growth phase?

II. Has the Pandemic Damaged ASEAN+3 Output Potential?

The ASEAN+3 economies have grown at a remarkable pace in recent decades. The region has transformed itself from a collection of poor economies with a combined GDP of slightly more than 10 percent of global GDP in the 1960s–70s into a group of middle- to high-income economies accounting for more than a quarter of global GDP in 2018 (AMRO 2020a). But the speed and extent at which the ASEAN+3 economies have grown in the last 20 years have been especially noteworthy, and AMRO (2020a) anticipated that "the global center of gravity for economic activities (both supply and demand) will continue to shift to Asia."

Can ASEAN+3 maintain its growth trajectory after the pandemic, or will it be indelibly scarred by COVID-19? The concept of scarring stems from the view that GDP fluctuations (shocks) are persistent—their effects linger years after the shock takes place—and recoveries from recessions (negative shocks) might not always be strong enough to bring GDP back to its trend prior to the shock. This persistence can be seen as the scars left by recessions. Scarring occurs because the recession undermines the economy's supply potential, altering its longer-term trend of GDP through persistently lower output or even lower GDP growth. The traditional growth-accounting framework points to three areas through which recessions can undermine an economy's supply potential: the labor supply; capital accumulation; and productivity.

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The historical evidence shows that economic recessions can have persistent effects on output paths. Recessions—"typical" recessions as well as recessions associated with a financial crisis, pandemic, natural disaster, or armed conflict—tend to be associated with permanent output losses, on average.[1] For typical recessions, the depressed output path results primarily from persistently weaker productivity (IMF 2021). For financial crisis-recessions, weaker productivity, lower capital-labor ratios, and employment losses all play a role (IMF 2009). Hence, recessions associated with financial crises lead to more negative outcomes than typical recessions. Recessions associated with epidemics and pandemics in the modern era have been followed by output losses of magnitudes larger than those following typical recessions, but smaller than those following financial crises (IMF 2021).[2]

But the medium-term output loss is not inevitable. Some economies have succeeded in avoiding it, ultimately exceeding their precrisis output trajectory. Although postcrisis output dynamics are hard to predict, the historical evidence on financial crises suggests that economies that apply countercyclical fiscal and monetary stimulus in the short run to cushion the downturn after a crisis tend to have smaller output losses over the medium term. A favorable external environment generally would help to reduce medium-term output losses. Evidence exists that structural reform efforts are associated with better medium-term outcomes (IMF 2009).

In the region, the 1997–98 Asian financial crisis left deep and lasting economic scars. ASEAN was the epicenter of the crisis, and its economies experienced recessions of varying magnitude: Indonesia, Malaysia, and Thailand each posted at least one quarter of double-digit contraction; and Korea and Singapore recorded four quarters of decline. While growth recovered fairly quickly after the crisis, there is evidence of permanent losses in the levels of output in the affected economies (Cerra and Saxena 2005; Ong and Choo 2020) (Box 2.1)

The economic impact of the 2002–03 severe acute respiratory syndrome (SARS) epidemic, on the other hand, was short-lived. SARS emerged in China in November 2002 and spread to Canada, Hong Kong, Singapore, Taiwan Province of China, and Vietnam in early 2003. In total, more than 8,000 people around the world contracted the disease, and about 780 of them died.[3] SARS hit economic activity in the ASEAN+3 region, with the travel, tourism, and hospitality sectors bearing the brunt of the impact; industrial production was not significantly impacted. GDP growth contracted in China, Hong Kong, and Singapore in the second quarter of 2003 while economic activity also slowed in the Philippines and Thailand. But the epidemic ended relatively quickly—SARS was declared contained in July 2003—and GDP levels in the affected economies recovered within the same year.

Since then, the region's economies have experienced their share of large negative shocks. Most economies were impacted to some degree by the 2008–09 global financial crisis and the 2009–10 H1N1 influenza pandemic that struck thereafter, although neither shock originated in the region.[4] Natural disasters—the 2008 earthquake in China's Sichuan province, the 2011 earthquake and tsunami in northeastern Japan, severe flooding in Thailand in the same year, and Super Typhoon Yolanda in the Philippines in 2013, to name a few—also took a significant human and economic toll on individual economies.

The COVID-19 crisis, however, is a crisis like no other experienced in the region (or, indeed, the world). The pandemic has inflicted a huge cost on the region's health, affecting more economies more severely than SARS. To contain the spread of the virus, authorities in the region have been implementing social distancing practices including lockdowns on all nonessential businesses and border closures. As a result, economic activity has slowed drastically, affecting more economies more severely than the Asian financial crisis. The pandemic is not over, even after two years, although some economies in the region are beginning to rebound. The longer the pandemic stretches out, the greater the likelihood that it could cause permanent economic damage through scarring effects on the labor supply, capital accumulation, and productivity growth (Figure 2.1). A full reckoning of the extent and areas of scarring caused by the pandemic can only be achieved years after it is over. For the present, this section analyzes the possible channels through which scarring could occur, with the purpose of highlighting areas for policy interventions in the short term that could minimize output losses over the long term.

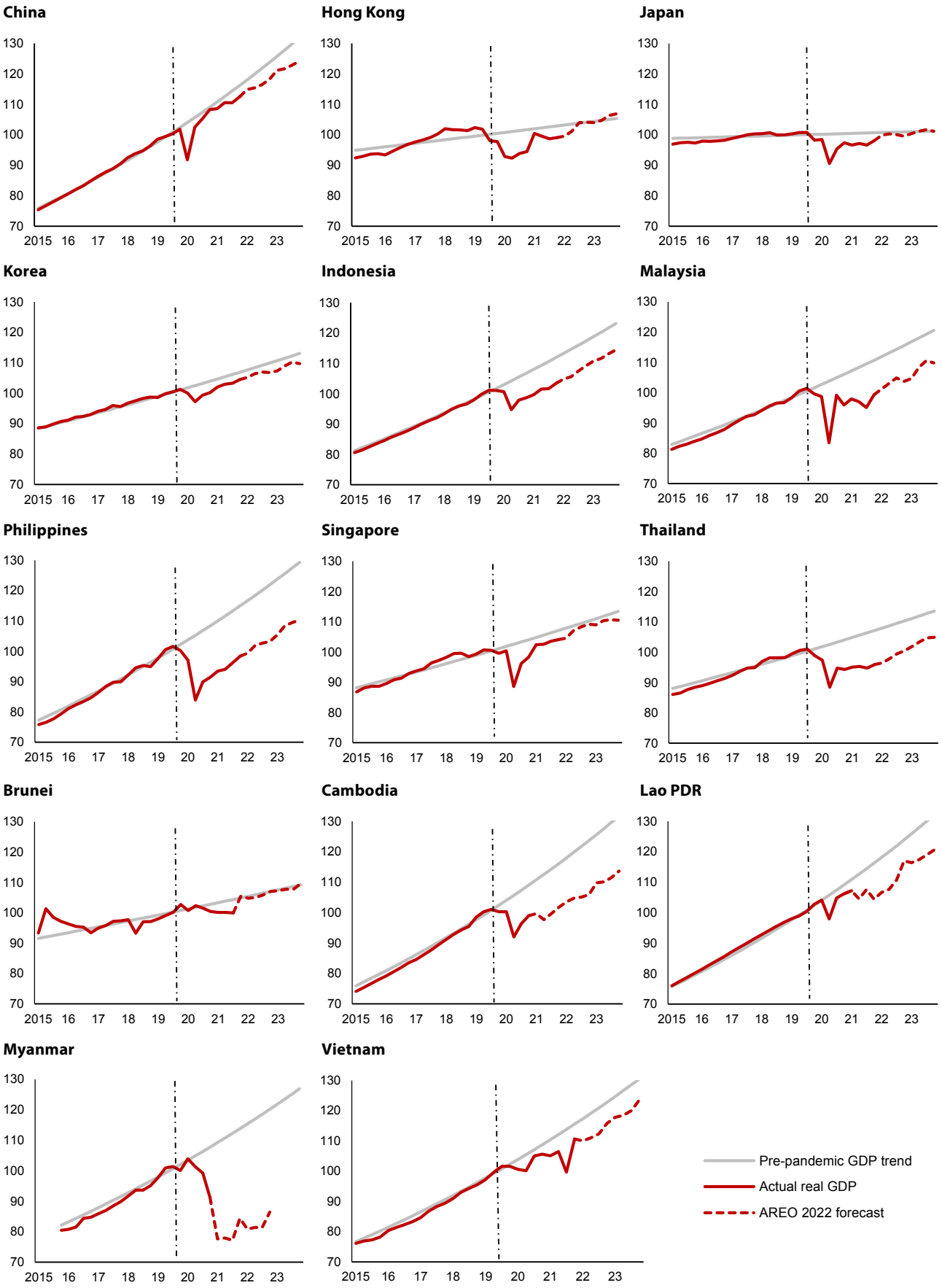
1/ See Cerra, Fatás, and Saxena (2020) for a review of the related literature and IMF (2021) for an analysis of scarring from recessions in 115 countries during 1957–2019.

2/ Ma, Rogers, and Zhou (2020) find that the adverse impact of past health crises on unemployment and output persisted for two and five years, respectively, on average; consumption, investment, and international trade also plummeted initially and rebounded rapidly but not by enough to restore pre-shock trends.

3/ The SARS virus traveled in humans to almost 30 economies, but it became deeply embedded in only six. China and Hong Kong accounted for 87 percent of all cases and 83 percent of all deaths (WHO 2015).

4/ AMRO (2017) and Ong and Choo (2020) compare the region's recovery path after the global financial crisis with that after the Asian financial crisis.

Figure 2.1. ASEAN+3: Actual and Projected Real GDP Levels against Pre-Pandemic Trends
(Index, 2019 = 100, seasonally adjusted)



Sources: National authorities via Haver Analytics; and AMRO staff estimates and projections.
Note: The vertical dotted line at Q4 2019 demarcates the onset of the pandemic. The pre-pandemic trend growth rate of real GDP for each economy is calculated by averaging the quarterly logarithmic difference of real GDP from Q1 2015 to Q4 2019; this trend growth rate is extended through Q4 2023 to obtain the gray "pre-pandemic GDP trend" line. Quarterly real GDP data for Myanmar are only available starting from Q4 2015 and projections stop at 2022. Actual and trend real GDPs are normalized to 2019 = 100 for ease of cross-economy comparison.

Box 2.1:

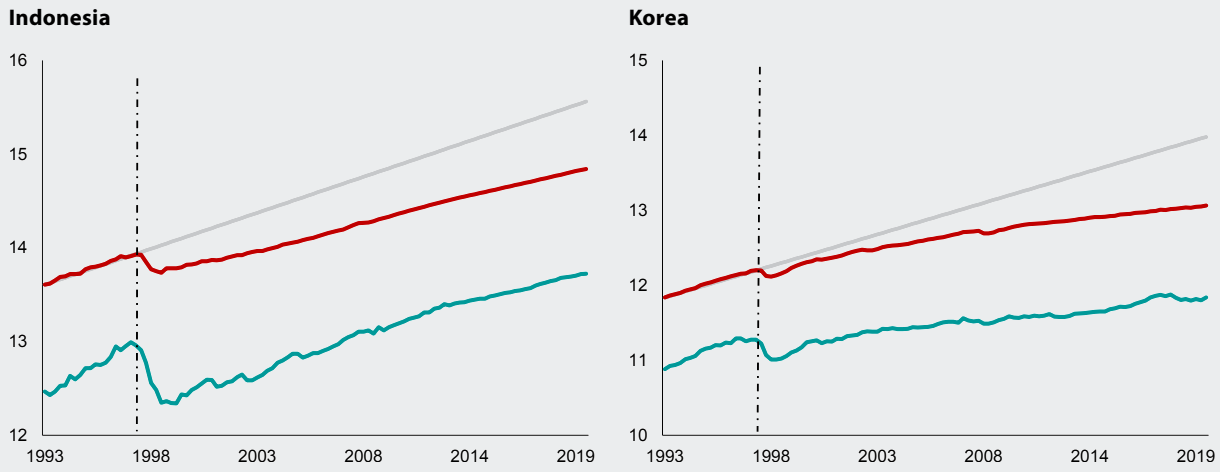
Economic Scars of the Asian Financial Crisis

The Asian financial crisis was caused by a combination of external imbalances and vulnerabilities in the financial and corporate sectors. The prolonged maintenance of de facto pegged exchange rates, in combination with inadequate financial sector supervision and prudential regulation, facilitated excessive unhedged foreign currency borrowing by the banking and/or corporate sectors in the ASEAN-3 (Indonesia, Malaysia, and Thailand) and Korea. Rapid credit expansion contributed to an investment boom (mainly in real estate) and asset price inflation in several economies. The vulnerabilities caused speculators to attack the currencies, leading to the collapse of the Thai baht in July 1997, which in turn triggered the contagion and the financial crisis that swept through the region. Stock market values fell, exchange rates depreciated sharply, and interest rates spiked, reflecting the rise in risk premia. These developments led to bankruptcies among banks and finance companies as loans soured. Output and consumption declined, and investment was hit especially hard.

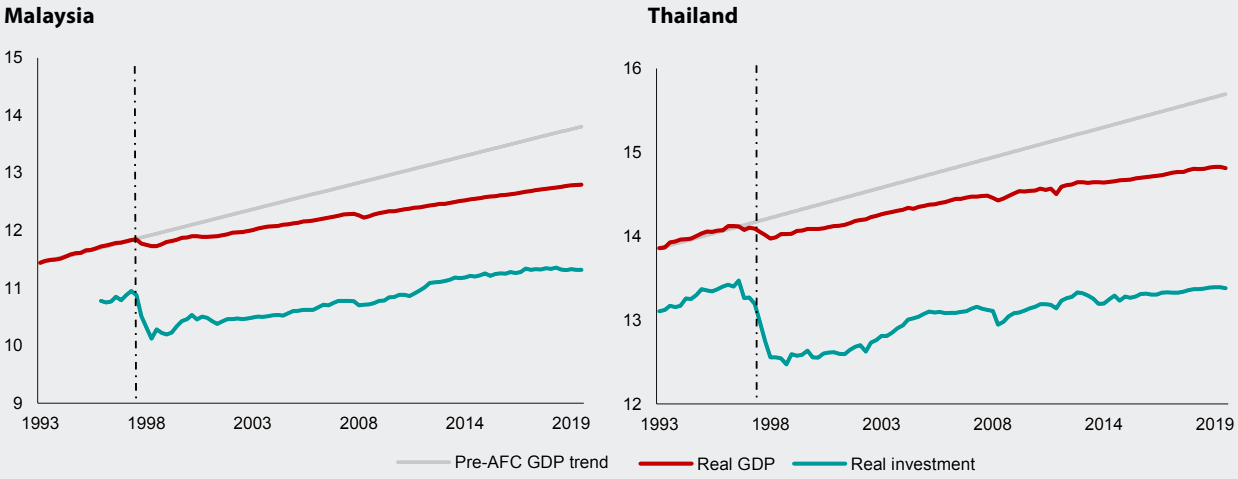
Severe policy adjustments by the affected economies—under emergency IMF programs in the case of Thailand (August 1997–June 2000), Indonesia (November 1997–December 2003), and Korea (December 1997–December 2000)—eventually enabled them to restore confidence and stem capital outflows. The recovery was led by exports, which were facilitated by sharply depreciated currencies and robust external demand. By 1999, GDP growth in the crisis-hit economies had recovered, albeit not to precrisis rates; neither did GDP levels recover to their precrisis trends (Figure 2.1.1).

The principal manifestation of scarring in the Asian financial crisis was slower capital accumulation. Private investment in the crisis-hit economies never fully recovered after the crisis (Figure 2.1.2). To some extent, this reflected the correction in precrisis excesses in real estate and infrastructure spending (Park, Shin, and Jongwanich 2009). But the investment decline also reflected the long-drawn-out process of rebuilding damaged corporate balance sheets as well as disruptions in domestic and external sources of financing—the consolidation in banking systems hindered lending (Figure 2.1.3), and capital inflows took a few years to return to the region after the crisis (Figure 2.1.4). Coupled with the decline in public investment arising from fiscal consolidation, this slump in investment spending lowered potential output growth for years to come (AMRO 2017).

Figure 2.1.1. ASEAN-3 and Korea: Real Output and Investment against Pre-Crisis Trends
(Millions of local currency, log scale)

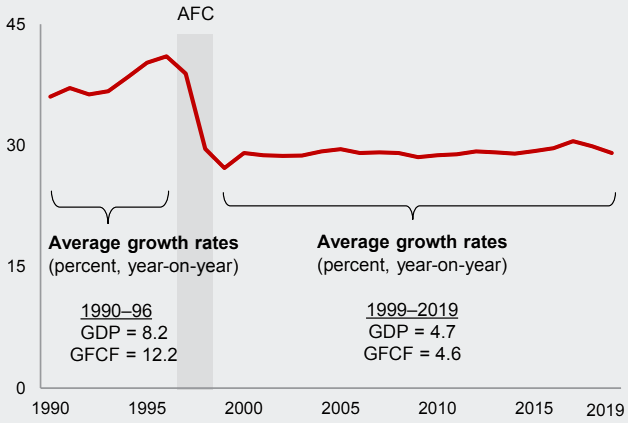


The authors of this box are Chiang Yong (Edmond) Choo and Ling Hui Tan.



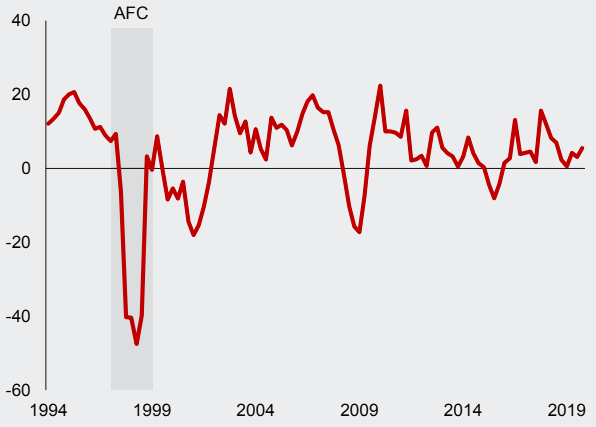
Sources: National authorities via Haver Analytics; and AMRO staff estimates.
Note: Real GDP and real investment data are seasonally adjusted. The vertical dotted line at Q3 1997 demarcates the onset of the Asian financial crisis (AFC). The pre-AFC trend growth rate of real GDP for each economy is calculated by averaging the quarterly logarithmic difference of real GDP from Q1 1993 to Q4 1996; this trend growth rate is extended through Q4 2019 to obtain the gray "pre-AFC GDP trend" line.

Figure 2.1.2. ASEAN-3 and Korea: Pre- and Post-Crisis Investment-to-GDP Ratio
(Percent of GDP)



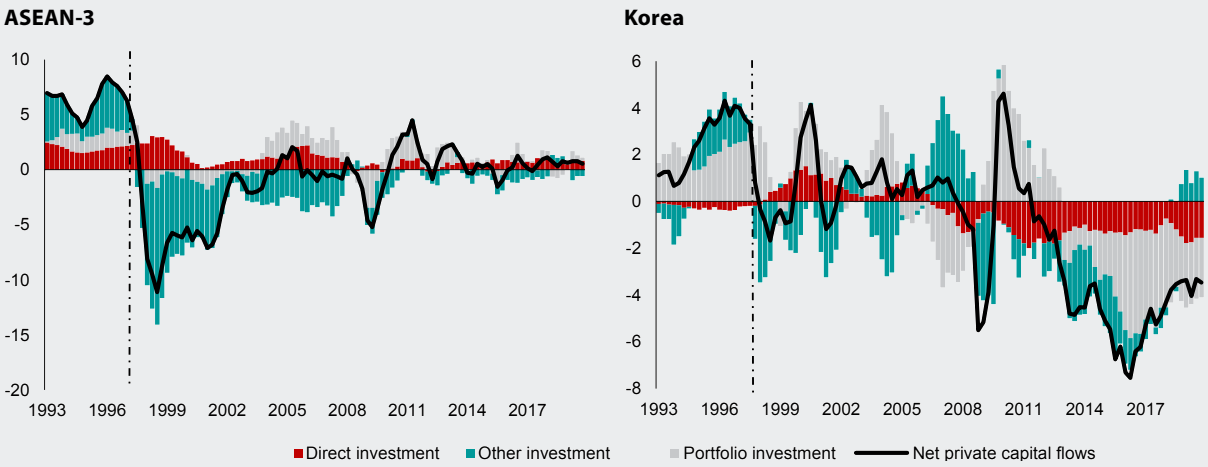
Sources: National authorities via Haver Analytics; and AMRO staff calculations.
Note: Investment refers to real gross fixed capital formation (GFCF) in national accounts. ASEAN-3 = Indonesia, Malaysia, and Thailand. AFC = Asian financial crisis; GDP = gross domestic product.

Figure 2.1.3. ASEAN-3 and Korea: Pre- and Post-Crisis Growth in Real Credit to the Private Sector
(Percent, year-on-year)



Source: Bank for International Settlements via Haver Analytics.
Note: ASEAN-3 = Indonesia, Malaysia, and Thailand. AFC = Asian financial crisis.

Figure 2.1.4. ASEAN-3 and Korea: Pre- and Post-Crisis Net Private Capital Flows
(Percent of GDP, 4-quarter moving average)



Sources: IMF, International Financial Statistics; national authorities via Haver Analytics; and AMRO staff calculations.
Note: The vertical dotted line at Q3 1997 demarcates the onset of the Asian financial crisis.

Will the Labor Force Shrink?

The COVID-19 pandemic is first and foremost a health crisis. Hence, the natural starting point is to consider its effect on labor supply. COVID-19's immediate impact on mortality in the region, though small, has been non-negligible. Although the case fatality rate (at the time of writing) is much lower compared to the 2003 SARS epidemic, the number of deaths to date has far outstripped that caused by SARS (Table 2.1). Within the region, COVID-19 death rates in the larger ASEAN economies have been much higher compared to the Plus-3 economies and Singapore (Figure 2.2). The long-term impact of COVID-19 on the labor force, however, will depend on how it affects demographic trends—specifically, the growth of the working-age population—and the labor force participation rate in the future. Since labor supply is an important determinant of an economy's output potential, any lasting influence of COVID-19 on labor force growth would have implications for potential output growth in the medium to long term.

Table 2.1. ASEAN+3 and World: Mortality Rates for COVID-19, SARS, and H1N1

	COVID-19 2020–		SARS 2003		H1N1 2009–2010
	World	ASEAN+3	World	ASEAN+3	World
Cases	437,098,038	29,248,186	8,096	7,416	–
Deaths	5,957,571	362,372	774	690	–
Infection rate (percent of population)	5.6	1.3	0.00013	0.00037	11–21
Death rate (per million persons)	768	160	0.1	0.3	22–84
Case fatality rate (percent)	1.4	1.2	9.6	9.3	0.01

Sources: National authorities via CEIC; Dawood and others (2012); Kelly and others (2011); Riley and others (2011); and AMRO staff calculations.
Note: Data for COVID-19 cases and deaths are up to February 28, 2022. SARS = severe acute respiratory syndrome.

Demographics

COVID-19 has been most lethal to the elderly. Unlike influenza, which typically causes mortality peaks in the very young and the very old, the death rate from COVID-19 has tended to increase with age, with those older than 70 most at risk, based on data from regional economies (Figure 2.3). Theoretically, a disease that kills mostly the elderly would have a different economic impact than a disease that kills mostly the working-age population—all else constant, the former would lead to an initial increase in GDP per capita whereas the latter would be a one-time reduction in the labor force, which would lower per capita output growth in the long term.

The pandemic has intensified chronically declining birth rates in the region's aging economies (Figures 2.4, 2.5). In China, early hopes for a "baby boom" when the lockdowns started did not materialize.[5] China recorded 7.52 births per 1,000 people in 2021—the lowest in more than 70 years—raising concerns among its demographers that the working-age share of the population might fall to half by 2050. Birth rates in Hong Kong, Japan, Korea, and Singapore likewise continued to trend downward during the pandemic to all-time lows, creating a renewed sense of urgency in these economies to address the troubling demographics. The Singapore government, for example, introduced a one-off Baby Support Grant to parents of infants born from October 1, 2020 to September 30, 2022, after receiving feedback that the pandemic had led to some people postponing their parenthood plans (Mohan 2020). Japan introduced a Newlywed Support Program in 2020 to provide a cash payment to newly married couples in participating municipalities with the aim of boosting marriage rates and birth rates (Kyodo News 2020).[6]

The trend of fewer births is less of a concern for the rest of the region. In fact, economies such as Indonesia and the Philippines braced for a surge in the number of

5/ Early in the pandemic, many headlines in the (mostly Western) media predicted that the lockdowns would result in a baby boom at the end of 2020. A March 2020 opinion piece by China's Xinhua media agency also speculated that a baby boom could be an upside to the pandemic: "Newlyweds and couples in their 30s or 40s in Wuhan and other locked down cities may make good use of the commuting time saved to cement ties and procreate" (Chen 2021).

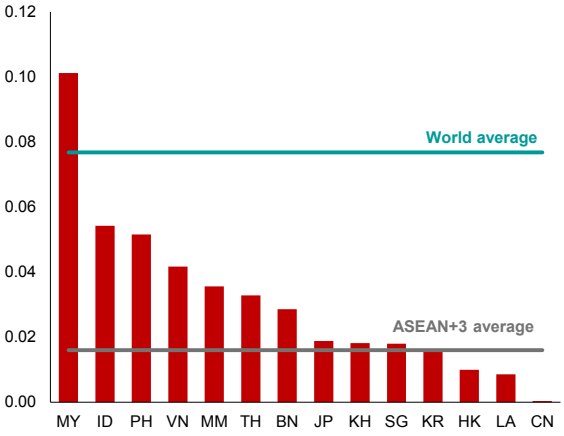
6/ The number of marriages in Japan fell by 12.7 percent in 2020 from a year earlier—the biggest percentage drop since 1950. There is a strong correlation between the marriage rate and the birth rate in Japan, as only a very small percentage of babies are born out of wedlock (Takenaka 2021).

births due to reduced access to family planning options during the lockdowns in 2020 (Straits Times 2020, Barcelo 2020). As it turned out, however, the number of births in the Philippines in 2020–21 dropped to record lows, due in part to women delaying pregnancies because of the pandemic (Cudis 2021). In contrast with Japan, however, the Philippine authorities are more sanguine about marriage and birth rates rebounding quickly once the pandemic is over (Philippine News Agency 2021).[7]

Prolonged border closures have kept foreign (or migrant) workers out of many of the region's economies. In Singapore, the share of foreign workers in the total labor force dropped to 33 percent in 2020 from 38 percent in 2019 (Figure 2.6); in Malaysia, the number of foreign workers dropped to 1.1 million in 2020 from 1.9 million in 2018 (Zainal 2021); and in Thailand, at least one-fifth of its estimated 2.5 million foreign workers have left the country since the start of the pandemic (Yuvejwattana 2021). Japan and Korea, which had started to open their economies to foreign labor in recent years, saw this trend weaken or stall during the pandemic (Figure 2.6). The ensuing labor shortages—in critical sectors such as construction, manufacturing, healthcare, and plantations—coupled with stiff demographic headwinds, have resulted in recent policy shifts to (re-)attract foreign workers. For example, Malaysia and Thailand have decided to lift restrictions and/or step up recruitment of foreign workers, while Japan is looking to allow foreign workers in sectors such as farming, construction, and sanitation to stay in the country indefinitely.[8]

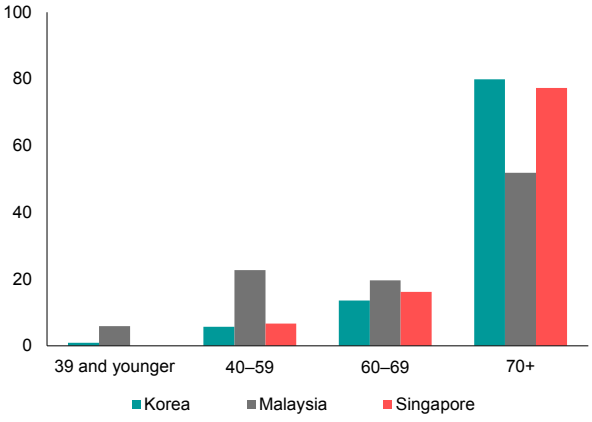
The barring of foreign workers could have a chilling effect on future immigration. Whether migrants will return to shore up the labor supply in these economies will depend on the opportunities available to them when the dust settles, as well as any lingering perceptions of unfavorable treatment by host countries during the pandemic.[9] Low-skilled workers—which form the bulk of migrant labor in Asia—are likely to return once borders reopen as they have fewer good opportunities in their home countries. Skilled workers, especially those in the technology and finance sectors, would have more options available as advanced economies, including those in the region such as Hong Kong, Japan, Korea, and Singapore, vie to attract them in the ongoing global competition for talent.

Figure 2.2. ASEAN+3: COVID-19 Death Rates, February 28, 2022
(Percent of population)



Sources: Johns Hopkins University; and AMRO staff calculations.
Note: 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 2.3. Selected ASEAN+3: COVID-19 Death Rates, by Age Group, February 28, 2022
(Percent)



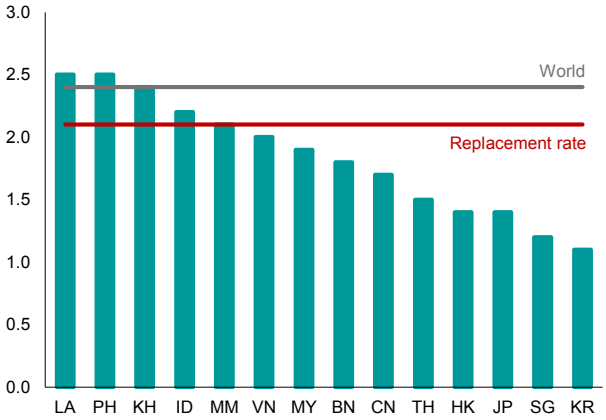
Sources: National authorities; and AMRO staff calculations.
Note: Singapore stopped reporting deaths in ages 39 and younger since November 2021.

7/ The number of marriages in the Philippines in 2020 was the lowest in 20 years (Philippine News Agency 2021).

8/ Thai authorities have begun signing memorandums of understanding with neighboring economies (Cambodia, Lao PDR, and Myanmar) to allow migrant workers to (re-)enter amid a severe labor shortage affecting some 45 industries, especially the food industry (Apisitniran 2022).

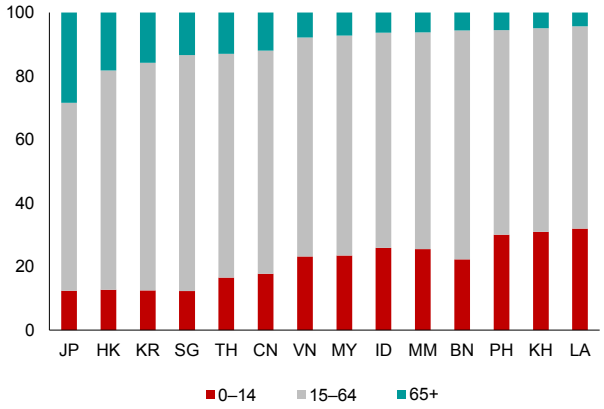
9/ Media reports have emerged as to some foreign professionals who chose to leave Hong Kong and Singapore because they felt the social distancing rules and mobility restrictions were too excessive. Some were put off by travel restrictions that made it difficult for them to visit their home countries. Some were laid off as government fiscal aid was directed to keeping citizens employed (AMRO 2021e).

Figure 2.4. ASEAN+3: Fertility Rates, 2021
(Per woman)



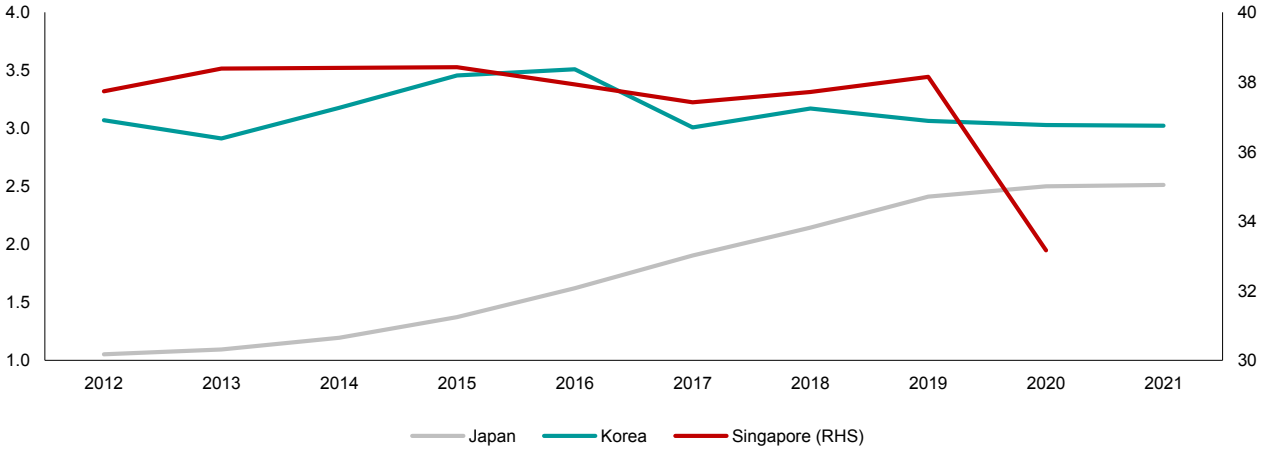
Source: United Nations Population Fund.
Note: BN = Brunei; CN = China; HK = Hong Kong; ID = Indonesia; JP = Japan; KH = Cambodia; KR = Korea; LA = Lao PDR; MM = Myanmar; MY = Malaysia; PH = the Philippines; SG = Singapore; TH = Thailand; and VN = Vietnam.

Figure 2.5. ASEAN+3: Demographic Structure, 2020
(Percent, by age group)



Sources: World Bank, World Development Indicators; and AMRO staff calculations.
Note: 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 2.6. Selected ASEAN+3: Foreign Workers
(Percent of labor force)



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

Labor force participation

Labor force participation rates declined across the region after the pandemic hit. The decline was largest in the Philippines, Korea, Hong Kong, and Singapore, where the labor force participation rate (LFPR) dropped by about 1.0–2.9 percent in 2020 compared with the 2019 average—although the worst LFPR drops in 2020 and 2021 were in the range of 2.5–9.1 percent relative to the 2019 average for these economies (Figure 2.7).[10] Compared to other crises such as SARS (which was relatively short-lived) and the global financial crisis (which was not a health crisis), COVID-19 has had a relatively larger and longer impact on LFPRs in the region (Figure 2.8).

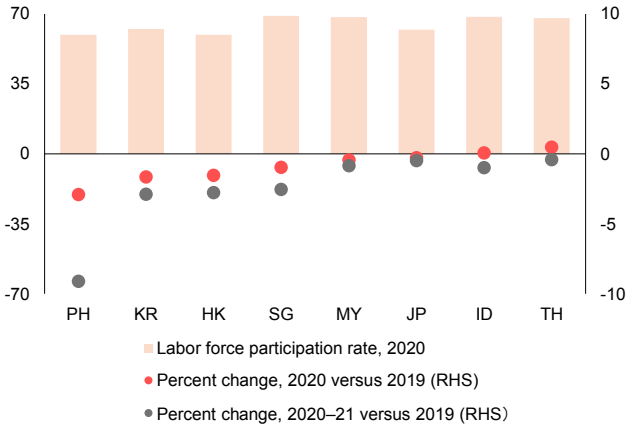
How lasting the decline in LFPRs will be depends on how COVID-19 has affected individual decisions to enter and leave the labor force. The pandemic has led to both involuntary and voluntary exits from the labor force. Individuals who had severe and/or prolonged COVID-19 infections have had to drop out of the labor force for health reasons.[11] Some—usually women—had to stop working to take care of family members who were sick or to look after their children when schools were closed and/or childcare was not available (ADB 2021a). The pandemic has also prompted workers to rethink their careers, work conditions, and long-term goals—young

[10] In Korea, the economically inactive population (i.e., those who are not working and not looking for a job) hit an all-time high in 2021: about 628,000 people gave up looking for jobs—the highest number since tracking of the statistic started in 2014—and a record 2.4 million "took a break from work with no plausible reasons like childcare, studies or illness" (Hwang 2022).

[11] In severely affected economies, the heavy burden of taking care of COVID-19 patients has also compromised the capacity of hospitals to provide adequate care for other patients, further harming the overall health of the population and contributing to declines in labor force participation.

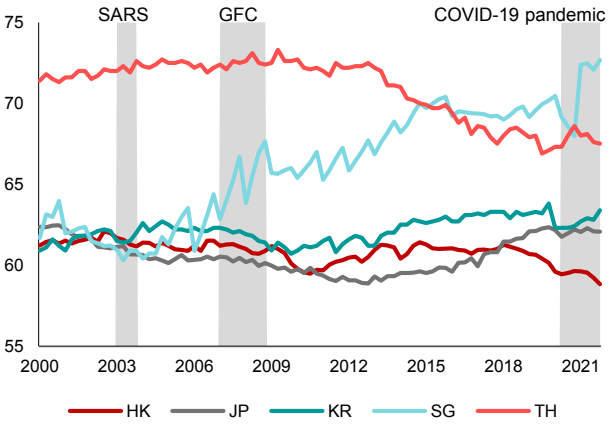
people have decided to stay in school or stay at home rather than enter the labor force during a recession; older workers with sufficient savings have decided to retire earlier than planned. In Japan and Korea, two of the region's economies most vulnerable to shrinking labor supply, estimates suggest that the pandemic's impact on labor force growth could be quite large (Box 2.2).

Figure 2.7. ASEAN+3: Labor Force Participation Rate, 2020
(Percent; percent, year-on-year)



Sources: National authorities via Haver Analytics; and AMRO staff calculations.
Note: All data are quarterly (non-seasonally adjusted) except for Indonesia (biannual). HK = Hong Kong; ID = Indonesia; JP = Japan; KR = Korea; MY = Malaysia; PH = the Philippines; SG = Singapore; and TH = Thailand. The red dot refers to the percentage change between the average labor force participation rates (LFPR) in 2020 and 2019. The gray dot refers to the percentage change between the lowest quarterly LFPR in 2020–21 and the 2019 average.

Figure 2.8. Selected ASEAN+3: Labor Force Participation Rate during Crisis Periods
(Percent)



Sources: National authorities via Haver Analytics; and AMRO staff calculations.
Note: Data are seasonally adjusted. GFC = global financial crisis; HK = Hong Kong; JP = Japan; KR = Korea; SARS = severe acute respiratory syndrome; SG = Singapore; and TH = Thailand.

Box 2.2:

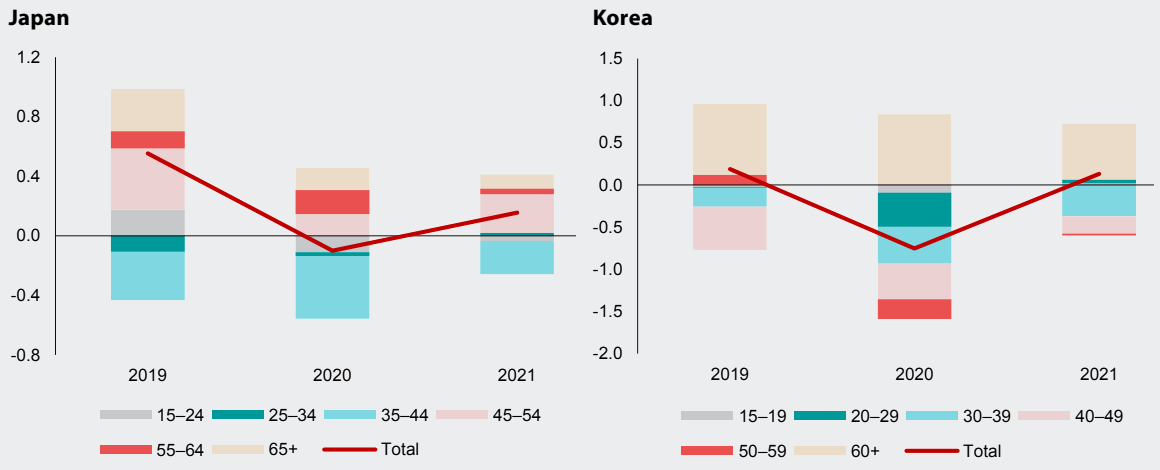
How Might the Pandemic Affect Labor Force Growth in Japan and Korea?

The pandemic has affected the labor force participation rate (LFPR) of different age groups differently in Japan and Korea. In Japan, the 15–24 age group and the 35–44 age group contributed to almost all of the LFPR decline in 2020 while the LFPR of the 35–44 age group and the 45–54 age group improved the most in 2021 (Figure 2.2.1). In Korea, all age groups except the 60-plus group contributed to the LFPR decline in 2020, and the LFPR of all age groups except the 60-plus group improved in 2021 (Figure 2.2.1).

The drop in the LFPR of younger people could be due to the discouraged worker effect, consistent with the higher unemployment rate among those cohorts (Figure 2.2.2). This is likely to be temporary as these individuals would normally return to the workforce when the economy improves. By contrast, a drop in the LFPR reflecting mainly older workers taking early retirement is more likely to be permanent as these individuals are unlikely to return to the workforce full time. In Korea, for example, there have been reports of major banks asking employees to accept early retirement to cut costs amid the prolonged pandemic and the increasing rate of digitalization of the industry (Choi 2020).

A back-of-the-envelope calculation suggests that COVID-19 could have a substantial impact on the labor force growth in these two economies. The impact of COVID-19 on labor force growth is captured by the change in the working-age population and the change in the LFPR due to the pandemic. We assume that the population of each (working-age) age group will remain at the corresponding 2021 level, and that the LFPR for each age group grows at the 2020–21 average growth rate for that group in 2022–26—in other words, that the pandemic leads to a one-time change in the size of each working-age cohort, but the change in attitudes to work (proxied by the change in labor force participation decisions) induced by the pandemic persists for the next five years. Based on these assumptions, labor force growth is projected to be about 0.3 percent in 2022–26 for Japan, and about –0.1 percent in 2022–26 for Korea (Figure 2.2.3). In the counterfactual scenario of no pandemic, which assumes the population of each age group will remain at the corresponding 2019 level, and that the LFPR for each age group grows at the pre-pandemic (2010–19 average) growth rate for that group in 2022–26, labor force growth would be about 0.9 percent in 2020–26 for Japan, and about 0.6 percent in 2020–26 for Korea. These results could overestimate the negative impact of the pandemic if the LFPR rebounds and if efforts to attract foreign workers bear fruit.

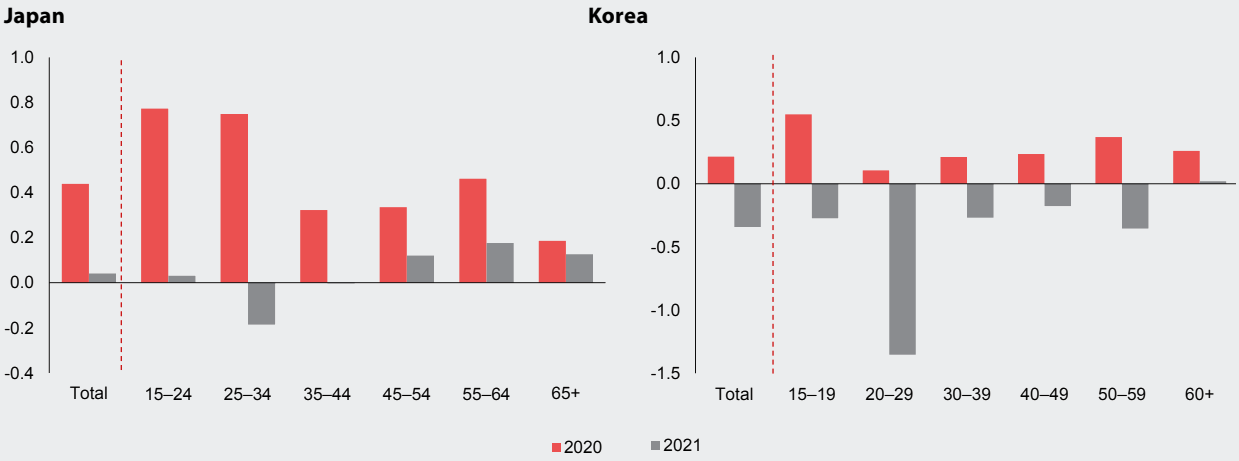
Figure 2.2.1. Japan and Korea: Contribution to Change in Labor Force Participation Rate, by Age Group
(Percent)



Sources: National authorities via Haver Analytics; and AMRO staff calculations.
Note: Data for 2021 refer to the monthly average from January to November.

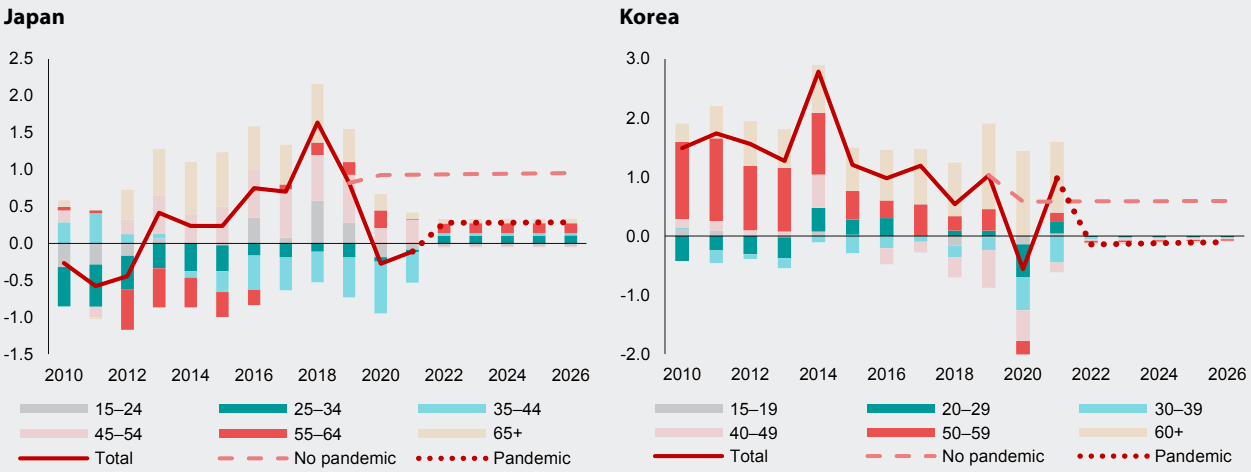
The author of this box is Hongyan Zhao.

Figure 2.2.2. Japan and Korea: Change in Unemployment Rate, by Age Group, 2020–21
(Percent)



Sources: National authorities via Haver Analytics; and AMRO staff calculations.
Note: Data for 2021 refer to the monthly average from January to November.

Figure 2.2.3. Japan and Korea: Labor Force Growth
(Percent)



Sources: National authorities via Haver Analytics; and AMRO staff calculations.
Note: Data for 2022–26 are estimated.

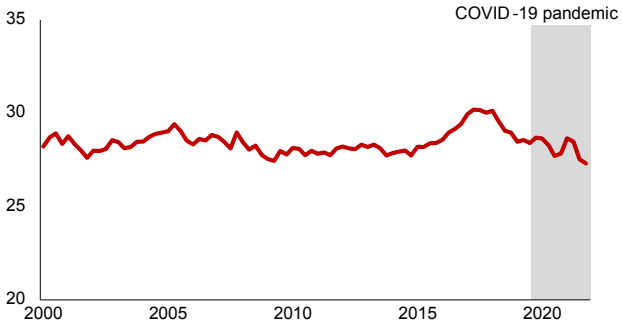
Will Capital Accumulation Slow Down?

The atmosphere of uncertainty generated by the COVID-19 pandemic has had an impact on fixed capital formation in the region. Unlike wars and natural disasters, epidemics and pandemics do not result in the destruction of physical capital stock in the affected economies. But the immediate impact of the pandemic and associated recession has been to undermine investment, which determines the rate of physical capital accumulation (Figure 2.9). The pandemic triggered a massive spike in uncertainty (Figure 2.10) surrounding, for instance: the spread and evolution of the virus; the efficacy and deployment of vaccines; the duration and effectiveness of social distancing, lockdowns, and other containment strategies; the near-term economic impact of the pandemic and policy responses; and how long government interventions and support policies would last. The conventional wisdom is that uncertainty causes firms to pause or delay new investment or expansion, causing capital stock to shrink through depreciation and attrition, until prospects for economic activity become clearer.[12]

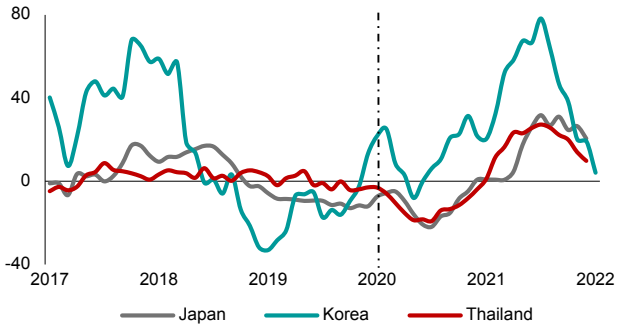
But heightened uncertainty on its own is unlikely to generate a persistent reduction in investment. Evidence from past recessions suggests that once the initial uncertainty subsides, pent-up demand would lead to a quick recovery in investment. In other words, uncertainty typically generates short, sharp drops in investment followed by a rapid rebound (Bloom 2014).[13] For the COVID-19 pandemic to generate a persistent reduction in investment—as in the type of scarring seen after the Asian financial crisis (see Box 2.1)—additional factors would have to be at play. The rest of this sub-section discusses various scenarios that could impair capital accumulation even after the pandemic is over, namely: scarring in corporate balance sheets; a banking crisis; loss of confidence by foreign direct investors; and loss of fiscal space for public investment.

Figure 2.9. ASEAN+3: Investment

Investment-to-GDP Ratio
(Percent of GDP)



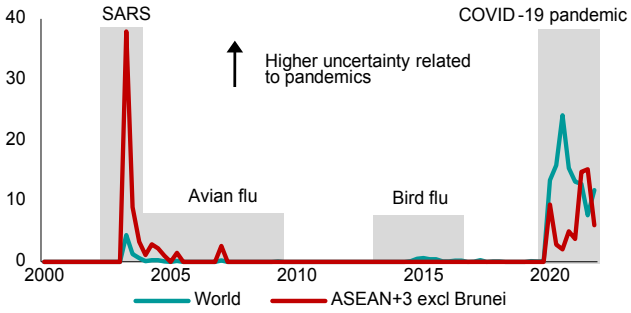
Real Growth in Capital Expenditure
(Percent, year-on-year)



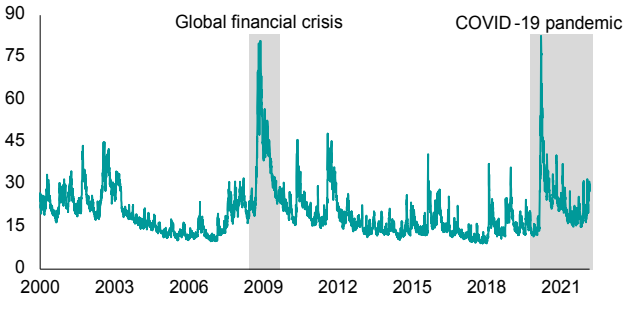
Sources: National authorities via Haver Analytics; and AMRO staff calculations.
Note: Investment is measured by real gross fixed capital formation in the national accounts.

Figure 2.10. Uncertainty Indices

Pandemic Uncertainty Index



VIX Index



Sources: Chicago Board Options Exchange (CBOE) via Haver Analytics; World Uncertainty Index; and AMRO staff calculations.
Note: The World Pandemic Uncertainty index counts the number of times the word "uncertain" and its variants appear near pandemic-related keywords in Economist Intelligence Unit country reports, normalized by the total number of words and multiplied by 1,000. The pandemic-related keywords include severe acute respiratory syndrome, SARS, Avian flu, H5N1, Swine flu, H1N1, Middle East respiratory syndrome, MERS, Bird flu, Ebola, Coronavirus, COVID-19, influenza, H1V1, World Health Organization, and WHO. A higher number means higher uncertainty related to pandemics. The index for ASEAN+3 (excluding Brunei) is calculated based on a simple average of individual economy indices. The CBOE Volatility Index (VIX) is constructed from the values of a range of call and put options on the Standard & Poor 500 Index and represents the market's expectation of volatility over the next 30 days.

12/ See Bloom, Bond, and Van Reenen (2007), for example. The idea is that uncertainty makes firms cautious about investment if adjustment costs make the action expensive to reverse. Investment adjustment costs may include, for example, the cost of damage to equipment during installation and removal and the loss from reselling used equipment at a discount (Bloom 2014).

13/ In the current context, the rebound could be additionally propelled by the need for spending on information and communication technology (ICT) to ensure business resiliency amid COVID-19-related restrictions.

Scarring in corporate balance sheets

"Financial scarring" is what happens when a recession damages private-sector balance sheets, destroying wealth and/or adding to debt burdens. These dynamics were particularly important after the Asian financial crisis and the global financial crisis, when affected economies suffered multiyear "balance-sheet recessions," with households, banks, and firms trying to resolve severe underlying financial imbalances that had built up in the run-up to the crisis. While financial vulnerabilities were not the root cause of the COVID-19 crisis, the pandemic has the potential to significantly weaken firms' balance sheets, which affects their incentive and hampers their ability to borrow and invest for some time. In contrast with the Asian financial crisis, firms in many of the region's economies entered the pandemic with stable leverage and relatively resilient balance sheets (Figure 2.11).[14] However, many ASEAN firms—especially small firms, and firms in the energy, materials, and "consumer discretionary" (i.e., nonessential goods and services) sectors—had high debt service burdens, low liquidity buffers, and weak cash-flow generating capacities, leaving them vulnerable to the extraordinary shock(s) caused by the pandemic (Kim, Li, and Yoo 2021).

Like most governments around the world, ASEAN+3 policymakers have been mindful of this risk from the outset, and all of them have extended critical policy support to firms. Support measures have been geared toward financing working capital and alleviating cash-flow problems (such as subsidized lending, grants, and temporary tax deferrals and exemptions) as well as maintaining solvency (such as loan restructuring and repayment moratoriums). In addition, some support measures for households (such as consumption vouchers) have been designed to incentivize spending to help domestic firms. Monetary easing and regulatory forbearance measures have supported liquidity in credit markets and allowed banks to restructure or roll over existing debt. The support measures have been mostly targeted to small- and medium-sized enterprises (SMEs) and sectors such as travel (e.g., aviation), tourism (e.g., hotels), and close-contact services (e.g., restaurants) that have been most hard hit by travel restrictions and other virus containment measures, as well as economically important sectors in some cases (e.g., the garment and footwear industry in Cambodia and the automobile industry in Indonesia). In a few economies such as Japan, Korea, and Thailand, the financial authorities have also provided more broad-based credit support for firms via existing or newly established corporate bond and/or equity stabilization funds.[15] Some economies explicitly introduced measures in their stimulus packages to encourage investment—Malaysia, for example, provided an accelerated capital allowance for capital expenditure on machinery and equipment, including information, communication, and technology (ICT) equipment, to incentivize businesses to undertake investments in 2020 and 2021.

It is too early to assess the extent of scarring in corporate balance sheets. The support policies have helped keep firms afloat so far, but debt levels have increased in some of the region's economies. Corporate debt-at-risk—that is, debt owed by firms that cannot cover their interest expenses with their earnings—increased sharply across the region in 2020 although it appears to have moderated in 2021 (see Chapter 1). However, the data do not cover micro, small, and medium-sized enterprises (MSMEs), which form a large share of firms in ASEAN economies (Figure 2.12). Available evidence on corporate insolvencies in the region suggests that corporate failure rates have not spiked relative to pre-pandemic levels. Still, if the pandemic drags on for too long, more and more companies, especially MSMEs, may not be able to generate enough earnings to service their debts, and a wave of business failures could follow when financial support is eventually withdrawn.

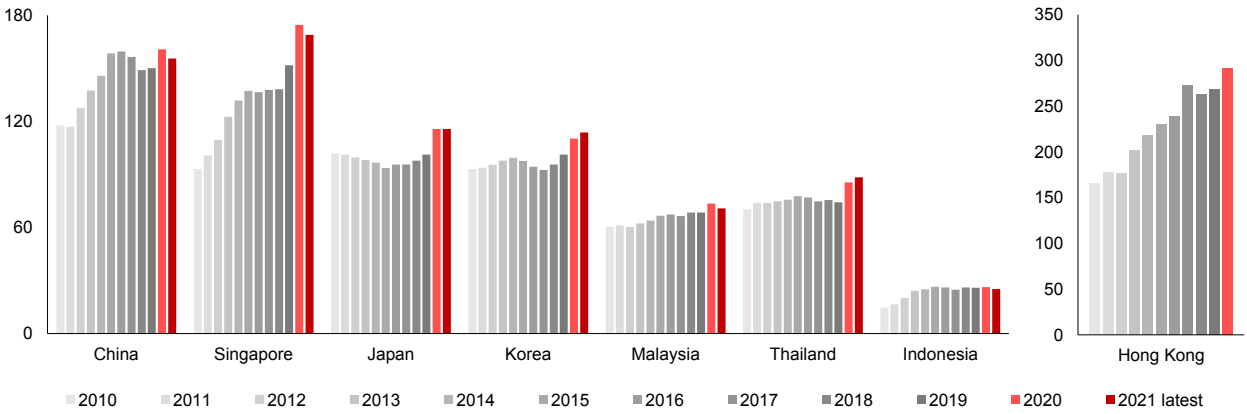
The vulnerability to firm financial distress would be more acute in economies where support policies turned out to be too generous or targeted at the "wrong" firms, and/or if global financial market conditions tighten in the process of recovery, triggering liquidity problems among surviving but fragile firms (G30 2020). As of end-2021, some ASEAN+3 members (including Cambodia, Indonesia, Malaysia, Singapore, Thailand, and Vietnam) have made efforts to ensure that financial and debt relief support is targeted at viable firms, while others (including China, Hong Kong, Japan, and Korea) have extended more broad-based credit support and regulatory forbearance.[16]

14/ Kim, Li, and Yoo (2021) note that nonfinancial firms in Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam had kept their balance sheet leverage broadly stable since the global financial crisis while reducing their reliance on short-term debt and limiting their exposure to currency risks.

15/ Korea's Financial Services Commission established a bond market stabilization fund and a stock market stabilization fund in March 2020 and has also provided support for corporate bond issuance and liquidity support for short-term money markets. The Bank of Japan more than tripled its outright purchases of commercial paper and corporate bonds when the pandemic started. The Bank of Thailand established a corporate bond stabilization fund in April 2020 to provide bridge financing to help companies facing a liquidity shortage to roll over their maturing bonds and avoid default.

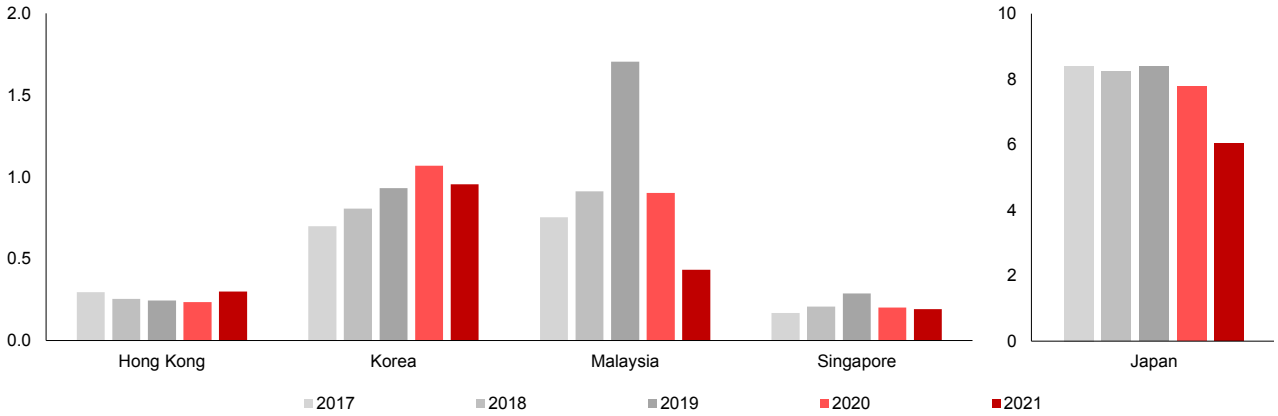
16/ In 2021 Japan recorded the fewest bankruptcies in a half century, a testament to how well the government's support, such as zero-interest loans and subsidies, has worked in keeping businesses afloat (Takeo and Huang 2022).

Figure 2.11. Selected ASEAN+3: Nonfinancial Corporate Debt
(Percent of GDP)



Source: Bank for International Settlements via Haver Analytics.
Note: Data refer to Q4 for each year except for 2021 where the latest data refer to Q3. 2020 and 2021 columns are in red to differentiate the pre-pandemic and pandemic periods.

Figure 2.12. Selected ASEAN+3: Corporate Bankruptcies
(Thousands of companies)



Sources: National authorities; and Tokyo Shoko Research.
Note: Data refer to end-December of each year. For Malaysia, 2021 refers to cumulative cases up to September 2021. 2020 and 2021 columns are in red to differentiate the pre-pandemic and pandemic periods.

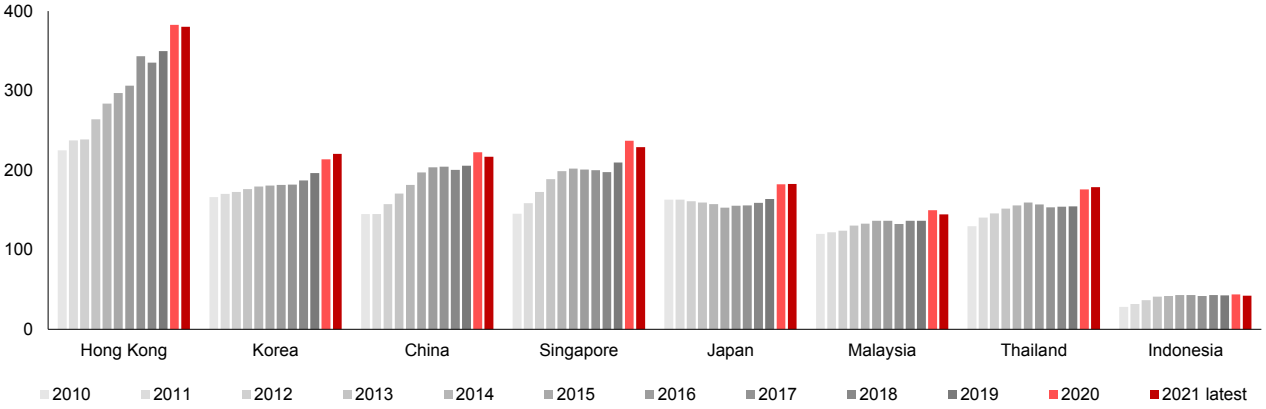
Banking crisis

In the worst-case scenario, the aforementioned wave of business failures could spill over into a banking crisis, which would further depress investment by cutting off the supply of credit to firms. Both household and nonfinancial corporate borrowing increased during the pandemic and the private sector's debt to banks has risen in some economies (Figure 2.13) (see Chapter 1). If firms and households are unable to fulfil their loan payments and other debt obligations, this could lead to mass defaults and a shock to banks' asset quality. Large losses by banks could cause a domino effect through the region's increasingly interconnected financial system as contagion caused by investor herd behavior could then push other financial institutions into distress. As the supply of credit becomes more limited, firms would face tougher financing conditions in the form of stricter lending standards and higher costs of borrowing, and investment would be likely to suffer (AMRO 2021a).

AMRO staff consider this scenario to be a tail risk. Going into the COVID-19 pandemic, ASEAN+3 banking systems were well-capitalized—the outcome of many years of effort to strengthen the financial system in the wake of the Asian financial crisis (AMRO 2021a). Bank capitalization ratios are well above minimum requirements and top-down stress tests of individual bank balance sheets in ASEAN+3 economies suggest that most banking systems remain generally well-buffered against large shocks (see Chapter 1). Nonperforming loans have not spiked relative to pre-COVID-19 levels.[17]

[17] The Bank of Thailand, while noting that commercial banks remained strong with high levels of capital, reserves, and liquidity has proactively encouraged banks to form joint ventures with asset management companies to handle nonperforming loans that may increase in the future (Banchongduang 2022).

Figure 2.13. Selected ASEAN+3: Nonfinancial Private Sector Bank Debt
(Percent of GDP)



Source: Bank for International Settlements via Haver Analytics.
Note: Data refer to Q4 for each year except for 2021 where the latest data refer to Q3. 2020 and 2021 columns are in red to differentiate the pre-pandemic and pandemic periods.

Loss of confidence by foreign direct investors

If the pandemic causes foreign investors to lose confidence in the future prospects of the economy, capital inflows could slow down, stall or even be reversed. This could happen, for example, if the government response to the pandemic is perceived to be ineffective, raising concerns among foreign investors about the institutional quality or political stability of the economy. Since investor confidence, once lost, generally takes some time to be regained, this could impair capital accumulation in the medium to long term, through less foreign direct investment (FDI) and less available funding for investment in general.

Realized FDI flows into ASEAN+3 economies in 2020–21 do not suggest any loss of confidence in the region as a direct result of the pandemic. The number and capital expenditure of announced FDI projects in the region plunged in the middle of 2020 but quickly recovered by early 2021 (see Chapter 1). Notwithstanding occasional media reports of foreign investors' dissatisfaction with the COVID-19 policies of some governments in the region, FDI decisions are ultimately driven by fundamental factors such as local market size, labor costs, human capital quality, transportation infrastructure, and trade openness—areas where the ASEAN+3 region continues to perform relatively well compared to other alternative locations (AMRO 2021b).[18] Recent supply chain disruptions (an indirect effect of the pandemic) and geopolitical tensions between the United States and China (which predate the pandemic) have motivated, and could still motivate, a certain degree of reconfiguration of global manufacturing supply chains, but are unlikely to lead to a permanent reduction in FDI in the region's economies (see Section IV).

Meanwhile, many ASEAN+3 economies have stepped up efforts to increase their attractiveness to foreign investors to help bolster their economic recovery from the pandemic. For example:

- Cambodia approved two draft bills amending the Law on Commercial Enterprises and the Law on Commercial Regulations and the Commercial Register to improve the ease of doing business in Cambodia and prepare for post-pandemic economic recovery.

- China further liberalized inward FDI by shortening its negative investment lists, removing foreign ownership caps on passenger car manufacturing companies, and opening all manufacturing sectors to foreign investors in the pilot free trade zones, among other changes.

- Indonesia passed the Omnibus Law on Job Creation, a massive deregulation effort to improve the investment environment, covering areas such as business licensing, investment requirements, employment, ease of doing business, research and innovation support, and special economic zones. The Omnibus Law lays the groundwork for shortening the negative investment list and opening investment opportunities in more sectors in the economy (AMRO 2021b, 2020c).

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[18] In September 2021, four leading foreign business chambers in Vietnam warned the government that its strict lockdown to control COVID-19 in the country's industrial south had led at least 20 percent of their manufacturing members to shift some production to another country, and that the Vietnam was "missing out on investment opportunities that may not return" if it was unable to demonstrate that it was a reliable alternative location to China (Reed 2021). Shortly thereafter, Vietnam's government abandoned its zero-COVID strategy and allowed factories in the south to reopen. Although the resumption of production has not been smooth, no reports of foreign manufacturers decamping from Vietnam have emerged. A subsequent survey by the American Chamber of Commerce in Vietnam reported that 78 percent of American companies in the country considered it a "positive" or "very positive" long-term investment destination (Nguyen 2021).

- As part of its economic recovery plan, Malaysia's government created a special unit within the Malaysian Investment Development Authority to facilitate the speedy implementation of investment projects. It also announced special tax rates for the next 10–15 years for manufacturing and selected services companies that bring in new investments to Malaysia before the end of 2022 (AMRO 2020d).

- Under the Republic Act No. 11595, the Philippines approved amendments to the Retail Trade Liberalization Act of 2000 to encourage more foreign retailers to directly own and operate retail stores in the Philippines by reducing their minimum capitalization. The Philippines also lowered corporate income tax rates from 30 percent to 25 percent, effective the second half of 2021, to attract more FDI.

- Thailand extended an investment incentive scheme and approved a one-year extension of incentives to accelerate investment in large-scale projects and for investments in the Eastern Economic Corridor, a special economic zone.

- Vietnam passed a new Law on Investment that aims to attract FDI by replacing its positive list approach to foreign investment with a more liberal negative list, expanding the number of sectors open for investment without formal approval, and introducing new investment incentives for investment projects in specified fields.

Loss of fiscal space for public investment

The fiscal stimulus packages rolled out by ASEAN+3 economies during the COVID-19 pandemic could set back public investment in much-needed infrastructure in the future. The stimulus packages have narrowed many governments' policy space and fiscal buffers (see Chapter 1). With increasing concerns about debt sustainability, some economies would need to balance the need for infrastructure investment with the need to restore their fiscal buffers in the medium term. This may prevent them from resuming and increasing infrastructure spending after the pandemic is over.

Public investment in the region has not declined overall during the pandemic, although public-private partnership (PPP) investment commitments have fallen sharply. Some governments (e.g., Hong Kong and Indonesia) increased public capital expenditure relative to GDP in 2020 and 2021.[19] Some governments (e.g., Brunei and the Philippines) cut capital outlays in 2020 to reallocate resources to more urgent spending on healthcare and support for businesses affected by the pandemic, and restored public capital expenditure in 2021. Some governments (e.g., Cambodia, Japan, and Vietnam) included capital investment projects in their fiscal stimulus packages in 2020 and returned public capital expenditure spending to normal levels in 2021 or, in the case of Lao PDR, had to cut back due to budget constraints (Figure 2.14). By contrast, new commitments of PPP projects dropped during the pandemic to about one-fifth of the 2019 number, and annual PPP investment, while relatively stable during the pandemic, is expected to fall in the coming years (Figures 2.15, 2.16)

The fall in PPP commitments recorded during the pandemic could delay capital formation in those ASEAN economies with the largest infrastructure gaps. Emerging and developing ASEAN economies face sizeable investment needs in both traditional and new infrastructure. Going into the pandemic, these economies had a considerably smaller stock of public and PPP capital per capita compared with advanced or wealthier ASEAN economies (Figure 2.17). In terms of physical infrastructure, gaps were especially evident in transportation (e.g., roads, railways, airports, and shipping ports) and ICT infrastructure (e.g., telecommunications and internet access) and relatively small in utility infrastructure (e.g., electricity and water supply) (Figure 2.18). The investment needed through 2030 to reach the United Nations Sustainable Development Goals for roads, electricity, water, and sanitation is estimated at 2.7 percent of GDP and 9.8 percent of GDP per year in emerging market and low-income economies, respectively (IMF 2020). In addition, spending on digital infrastructure will also be necessary to close the sizeable digital gaps in these economies (AMRO 2021b). And public (and private) investment needs for mitigation of and adaptation to climate change are also sizable and crucial for all economies in the region and around the world.

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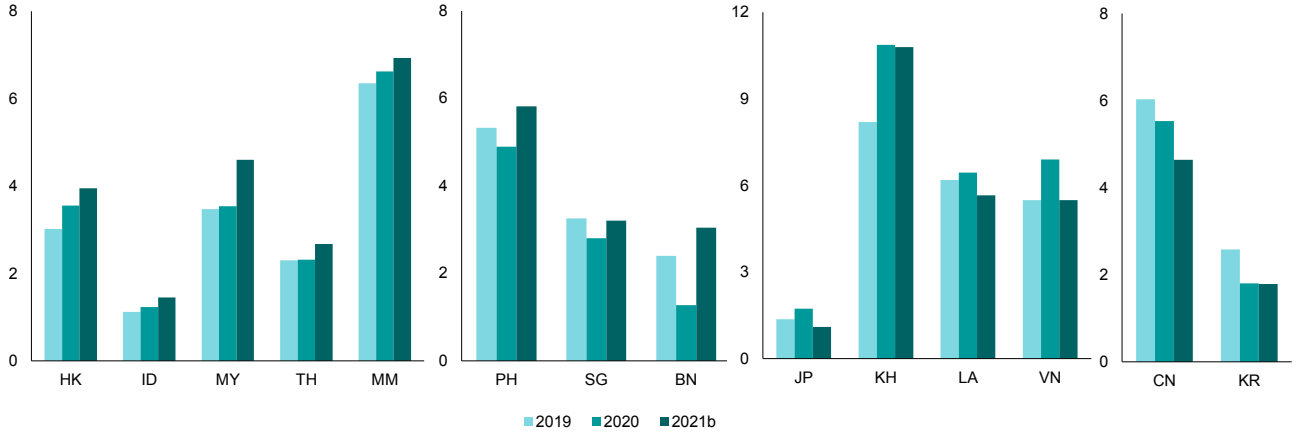
[19] There is a case to be made for increasing public investment to stimulate the economy during a recession. Public investment typically has a larger multiplier than public consumption, taxes, or transfers, and the multiplier tends to be larger in recessions when resources are idle and when central bank rates hit their effective lower bound (IMF 2020). Public investment may also have a higher multiplier in periods of high uncertainty, possibly because it signals the government's commitment to growth and stability and thus helps to raise confidence and encourage private investment (Gbohoui 2021). The case for increasing public investment to stimulate the economy is strongest in economies that have been able to borrow cheaply at historically low interest rates to finance an investment scale-up.

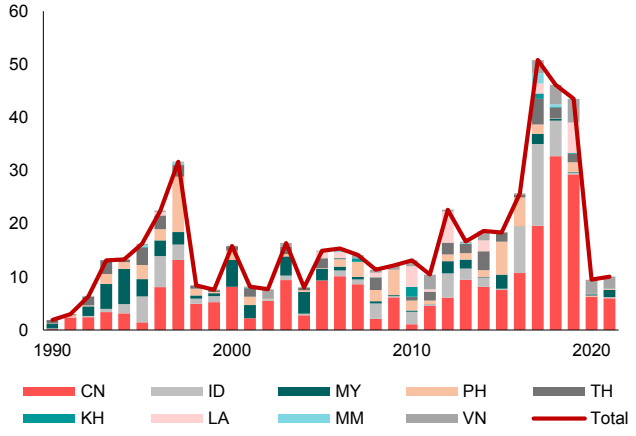
Deteriorating debt dynamics and tight financing conditions could also constrain public investment in a few ASEAN economies in the medium term. Public debt-to-GDP ratios have increased substantially in all ASEAN+3 member economies during the pandemic, due to revenue shortfalls and massive spending on support/stimulus measures and healthcare. Although the risk of debt distress is low and the degree of fiscal policy space is moderate to ample for most economies in the short term, the need to rebuild fiscal policy buffers—together with a higher debt service burden from the elevated level of public debt—could squeeze capital expenditure in the medium term in economies such as Indonesia and the Philippines, where infrastructure gaps are large (AMRO 2020c, 2020e).[20] The challenge is even greater for economies with large infrastructure gaps and limited market access—as indicated by sovereign debt ratings (see Chapter 1)—such as Cambodia and Lao PDR (AMRO 2020b, 2021c).

Figure 2.14. ASEAN+3: Government Capital Expenditure
(Percent of GDP)



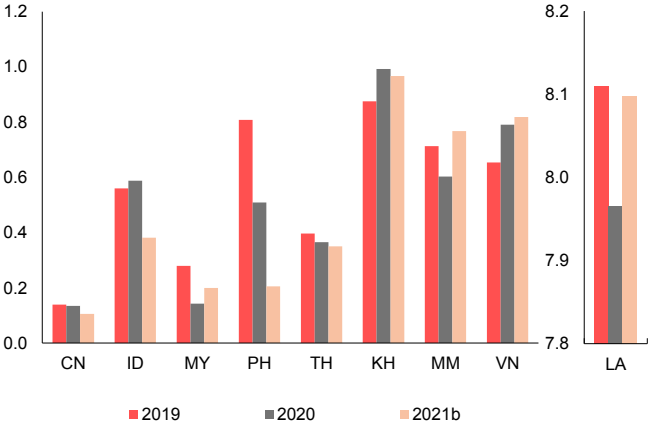
Sources: IMF, Investment and Capital Stock Dataset (ICSD); national authorities; and AMRO staff estimates.
Note: BN = Brunei; CN = China; HK = Hong Kong; ID = Indonesia; JP = Japan; KH = Cambodia; KR = Korea; LA = Lao PDR; MM = Myanmar; MY = Malaysia; PH = the Philippines; SG = Singapore; TH = Thailand; and VN = Vietnam. ICSD data available until 2019. Capital expenditure of the central government (plus local governments in the case of Cambodia, China, and Vietnam) is used as an estimate for public capital expenditure in 2020 and 2021. For China, capital expenditure is proxied by expenditures under the following functional classifications: urban and rural community affairs; agriculture, forestry, water conservancy; and transportation. For Japan, capital expenditure is proxied by expenditures under the functional classification of public works. 2021b denotes budgeted capital expenditure for 2021. ASEAN+3 members are categorized into 4 groups according to the evolution of public capital expenditure during the pandemic.
The first chart in the figure shows economies where the public capital expenditure-to-GDP ratio increased in 2020 and 2021. In Malaysia, and Thailand, public capital expenditure decreased in absolute terms in 2020, but by less than the decline in GDP; in 2021, these economies increased public capital expenditure substantially both in absolute terms and as a share of GDP. Indonesia and Hong Kong maintained positive public capital expenditure growth in 2020 and 2021.
The second chart in the figure shows economies where the public capital expenditure-to-GDP ratio declined in 2020 but rebounded in 2021.
The third chart in the figure shows economies where the public capital expenditure-to-GDP ratio rose in 2020 but declined in 2021.
The fourth chart shows economies where the public capital expenditure-to-GDP ratio fell in 2020 and 2021. In Korea, the decline in the public capital expenditure-to-GDP ratio in 2020 was due to a one-off increase in the ratio in 2019; the public capital expenditure-to-GDP ratio in 2020 was 18.5 percent higher than in 2018.

Figure 2.15. Selected ASEAN+3: Public-Private Partnership Investment Commitments
(Billions of US dollars)



Source: World Bank, Private Participation in Infrastructure.
Note: CN = China; ID = Indonesia; KH = Cambodia; LA = Lao PDR; MM = Myanmar; MY = Malaysia; PH = the Philippines; TH = Thailand; and VN = Vietnam.

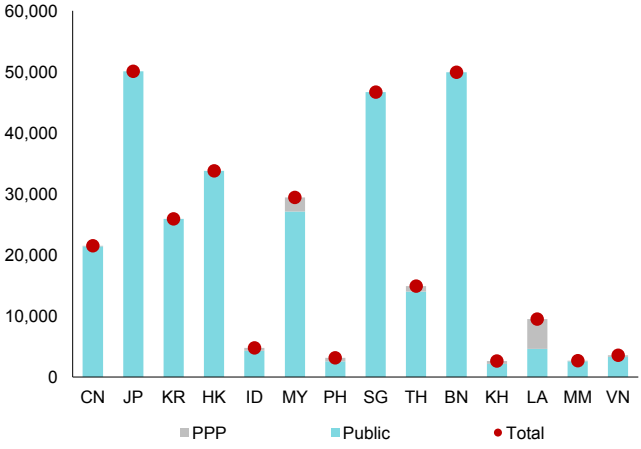
Figure 2.16. Selected ASEAN+3: Public-Private Partnership Investments
(Percent of GDP)



Sources: World Bank, Private Participation in Infrastructure; and AMRO staff estimates.
Note: 2021b refers to the budgeted PPP investment for 2021. CN = China; ID = Indonesia; KH = Cambodia; LA = Lao PDR; MM = Myanmar; MY = Malaysia; PH = the Philippines; TH = Thailand; and VN = Vietnam.

20/ In addition, abrupt changes in global market sentiment could result in sudden increases in financing costs, especially for those economies with large contingent liabilities from state-owned enterprises and PPPs.

Figure 2.17. ASEAN+3: Public and PPP Capital Stock per Capita, 2019
(US dollars, PPP)



Sources: IMF, Investment and Capital Stock Dataset; and AMRO staff estimates.
Note: 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; PPP = public-private partnership; SG = Singapore; TH = Thailand; and VN = Vietnam.

Figure 2.18. ASEAN+3: Infrastructure Competitiveness, 2019
(0 = lowest; 100 = highest)

Sources: World Economic Forum, Global Competitiveness Report 2019; and AMRO staff calculations.
Notes: 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.
ICT = information and communications technology. The Global Competitiveness Index (GCI) score for transportation infrastructure is based on indicators including road connectivity/quality of road infrastructure, railway density, airport connectivity, and liner shipping connectivity. The GCI score for utility infrastructure is based on indicators including electricity access/electricity supply quality and safe drinking water/reliability of water supply. The GCI score for ICT infrastructure is based on indicators including mobile-cellular telephone subscriptions; fixed-broadband subscription; and internet users. Scores for Myanmar are for 2015–16.

Will Productivity Fall?

Besides slowing factor accumulation, crises and recessions can cause persistent losses in potential output from reduced productivity. Typically, this results from adverse effects on human capital accumulation, innovation, and resource reallocation.

Human capital accumulation

In addition to the outright destruction of human capital reflected in COVID-19-related mortality and morbidity rates, the pandemic could lead to slower human capital accumulation because of learning losses due to extended school closures and skill deterioration during extended periods of unemployment. Evidence from past crises indicates that school closures often do long-term damage, with affected cohorts of students ending up with lower educational attainment, lower earnings, and higher unemployment in adulthood (World Bank, UNESCO, and UNICEF 2021).[21] Similarly, long-term unemployment erodes human capital. Unemployed workers who stay out of their jobs for long periods may find that their skills have deteriorated or become outdated. On the other hand, the crisis could have a positive effect on human capital accumulation by ushering in and accelerating a permanent shift toward digital technology.

The unprecedented disruption to education caused by COVID-19 will harm future learning trajectories for this generation of students, especially in economies most in need of human capital. From February 2020 through December 2021, education systems in the region were on average fully closed for 169 instructional days and partially closed for 184 days, about 31 percent more than the global average.[22] While some economies (e.g., Japan and Singapore) quickly reopened schools, others kept all schools closed for exceptionally long periods (e.g., Cambodia, Malaysia, Myanmar, and the Philippines) or reopened but only partially (e.g., Indonesia and Korea) (Figure 2.19).

21/ Learning losses due to prolonged school closures include not only forgone learning from canceled in-person classes but also loss (forgetting) of previously acquired learning and—because learning is a cumulative process—slower accumulation of skills after students return to school.

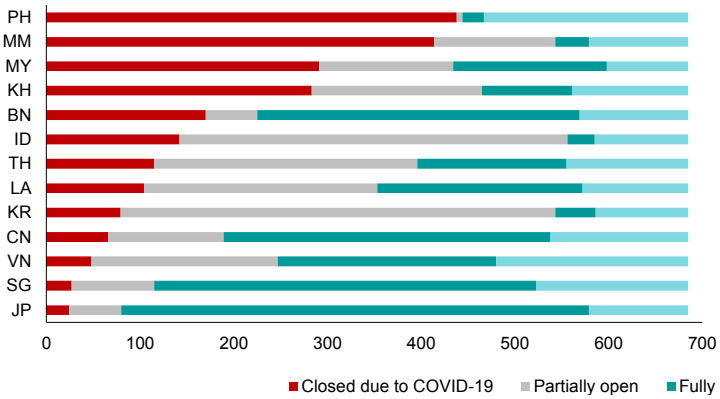
22/ According to the United Nations Educational, Scientific and Cultural Organization (UNESCO) map of school closures in 210 countries and territories, from mid-February 2020 to end-December 2021, schools were fully closed for an average of 135 days and partially closed for 134 days, where "fully closed" refers to government-mandated closures of educational institutions affecting most or all of the student population and "partially closed" refers to the situation where schools are open in certain regions and closed in others, and/or open for some grades/levels/age groups and closed for others, and/or open with reduced in-person class time, combined with remote learning (hybrid approach).

Education systems have attempted to mitigate the effects of school closures by implementing remote learning modalities, including online platforms, but the deployment, uptake, and effectiveness of such programs has varied. As a whole, the region's economies rank highly compared to the rest of the world in the share of school-age children with internet access at home, especially in urban areas (World Bank, UNESCO, and UNICEF 2021). Still, the economies best able to respond to COVID-19 educational disruptions have been those that could build on long-established investments in the development of digital learning systems and resources, notably China, Korea, and Singapore.[23] Estimates by ADB (2021b) of learning losses in the ASEAN+3 due to COVID-19 vary according to the length of school closures, effectiveness of remote learning, and increase in the dropout rate—all of which point to the fact that the damage to human capital will be greatest in economies that can least afford it (Figure 2.20).[24]

Some ASEAN+3 economies have reported increases in the rate of long-term unemployment during the pandemic; some have also introduced skills training for the unemployed in their pandemic support/stimulus packages. Long-term unemployment rates rose in 2021 in Hong Kong, Japan, Korea, and Singapore, for example.[25] In Japan, the monthly average number of long-term unemployed (who had been out of a job for more than 12 months) was about 660,000 in the third quarter of 2021, higher by about 180,000 compared to the same period in 2020. In Korea, the number of long-term unemployed (who had been out of a job for more than six months) was about 128,000 in 2021, up 8.1 percent from 2020; about half of the long-term unemployed Koreans in 2021 were in their twenties and thirties. According to the Bank of Korea, the pandemic has crimped hiring while automation continues to eliminate jobs, for example, in fast-food restaurants where digital kiosks are increasingly being used to accept orders (Kim 2021). The Korean New Deal economic revitalization package launched in 2021 includes projects to strengthen assistance for the unemployed, including through a reorganized vocational training program (AMRO 2021d). Singapore's SGUnited Jobs and Skills Packages in 2020 provided skills training, career-matching and conversion services, and subsidized training and attachments for displaced workers (AMRO 2021e).

Survey evidence suggests that ASEAN populations have increased their acquisition of digital skills during the pandemic. No operational metrics are available for assessing the level of digital skills in the region, but annual surveys by the World Economic Forum (WEF) reported that digital skills increased during the pandemic among young people aged 16 to 35 in six ASEAN economies. Its 2020 survey found that more than 42 percent of respondents had picked up at least one new digital tool during the pandemic, and that the use of

Figure 2.19. ASEAN+3: School Closures and Remote Learning Modalities, 2020–21
(Number of days)



	Enrolment	Remote learning modalities
PH	26,950,258	TV + Online + Radio
MM	9,640,610	TV + Radio
MY	6,690,717	Online + TV
KH	3,353,432	Online + TV
BN	95,323	Online + TV
ID	60,228,568	TV + Online + Radio
TH	12,705,131	Online + TV
LA	1,661,990	TV + Online + Radio
KR	6,873,663	Online + TV
CN	236,991,152	Online + TV
VN	21,079,770	Online + TV
SG	479,722	Online
JP	16,323,977	TV + Online + Radio

Source: United Nations Educational, Scientific and Cultural Organization.
Note: Data cover the period from February 6, 2020 to December 31, 2021. BN = Brunei; CN = China; 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.

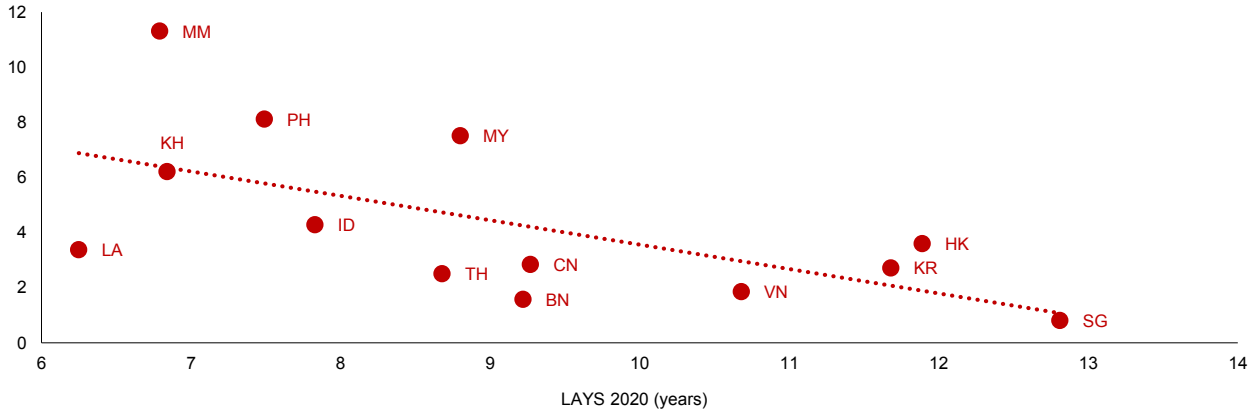
23/ According to the World Bank, UNESCO, and UNICEF (2021), China, Korea, and Singapore have been implementing national education masterplans incorporating ICT for more than 2 decades.

24/ Learning losses are measured in terms of learning-adjusted years of schooling (LAYS), which is the number of years of schooling a child can expect to obtain by age 18, adjusted by a country's average student achievement based on standardized test scores harmonized across countries. The framework assumes that school closures affect LAYS by reducing the expected years of schooling (quantity effect) and harmonized test scores (quality effect). Both effects are mitigated by the effectiveness of remote learning. The indirect effect of income shocks also reduces the expected years of schooling.

25/ The definition of long-term unemployed varies in different economies, with the duration of unemployment ranging from 3 to 12 months. According to the Organisation for Economic Co-operation and Development (OECD), the long-term unemployment rate (defined as the share of the labor force that has been unemployed for 12 months or more) in Japan and Korea declined slightly in 2020 from the previous year and in any case remained well below the OECD average.

online education had increased significantly among full-time students and active workers (WEF 2020).[26] Its 2021 survey revealed that digital skills transfers took place during the pandemic—some 40 percent of respondents reported having learned how to use digital tools from others, while 36 percent reported having taught others how to use digital tools (WEF 2021). The Go Digital ASEAN initiative, launched in June 2020, has trained more than 3,000 local volunteer trainers across the region to provide customized training to equip a target of 200,000 micro- and small-sized enterprises and underemployed youth, particularly those in rural and isolated areas, with crucial digital skills and tools and minimize the negative impact from the COVID-19 crisis.[27]

Figure 2.20. ASEAN+3: Learning Losses, 2020–21
(Percent decline in learning-adjusted years of schooling versus 2020 baseline)



Sources: World Bank, Human Capital Index; and Asian Development Bank.
Note: 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. Learning-adjusted years of schooling (LAYS) are based on the "intermediate" scenario of the effectiveness of remote learning (relative to in-person classes) for the relevant country group, i.e., 66 percent for high-income economies, 50 percent for upper middle-income economies, 29 percent for lower middle-income economies, and 13 percent for low-income economies.

Innovation

The potential impact of the pandemic on innovation in the region is mixed, ex ante. On the one hand, the pandemic and associated recession could diminish business dynamism, and lower entry rates of new firms (including foreign multinationals) could lead to missed opportunities for innovation and the creative destruction process. On the other hand, the pandemic-related containment measures have inspired innovations in business models (for example, in production and delivery processes and the digitalization of services) that will survive into the future (see Section III).

Available (albeit limited) evidence indicates that the rate of new business formation has varied across the region during the pandemic. In Singapore, the numbers of new businesses formed in 2020 and in 2021 were actually higher than in pre-pandemic years (2015–19) (Figure 2.21); new businesses have been mostly in professional services, wholesale and retail trade, and finance and insurance. In Malaysia, on the other hand, there were about 45,000 new registrations in 2021 and 44,000 in 2020—compared to 47,000 in 2019. Similarly, in Hong Kong, the number of local companies incorporated was lower in 2020 and 2021 compared to the pre-pandemic level, and in Vietnam, official statistics show that the number of newly established enterprises declined slightly in 2020 compared to 2019, and more sharply in 2021. In Japan: "New firm entry has been weak, and the pandemic is likely to have depressed entry" (OECD 2021a).[28]

The rate of foreign-firm entry is also different across the region. Greenfield FDI announcements have recovered from their lows in 2020, with the rebound especially strong in China where the number of new FDI project announcements soared in 2021 well above pre-pandemic levels (Figure 2.22). The distribution of new projects by sector and subregion anticipate the future drivers of investment and employment in the ASEAN+3 region in the next few years—for example, most retail FDI projects are headed toward China, most likely to take advantage of the massive consumption potential; ASEAN takes the bulk of announced manufacturing projects; while the rest of the Plus-3 economies are set to receive research and development (R&D) and data center FDI and electricity and utility projects (Figure 2.23).

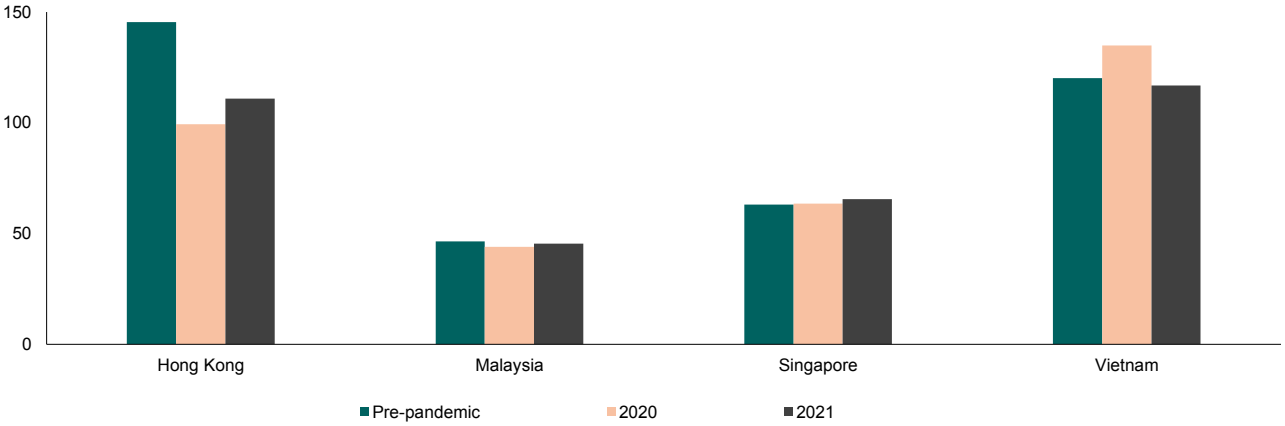
26/ Some 64 percent of full-time students and 38 percent of active workers surveyed in 2020 reported using online education tools more actively during the pandemic. By comparison, in the 2019 survey, 48 percent of student respondents reported using online education, and only 8 percent of surveyed employees reported learning essential workplace skills through online training (WEF 2020).

27/ The initiative was approved by the ASEAN Coordinating Committee on Micro, Small and Medium Enterprises in November 2019.

28/ Korea stopped reporting statistics on new company creation in January 2020.

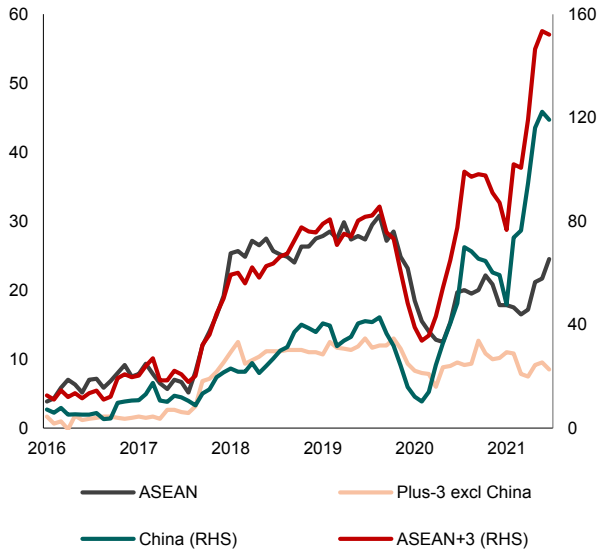
The pandemic has not stifled innovation activity in ASEAN+3's technology leaders. R&D spending by the Plus-3 economies has remained strong despite the large amounts of fiscal resources that have had to be rerouted to pandemic management and economic support. China's R&D expenditure rose by about 10 percent to reach a record high of about USD 380 billion in 2020, equivalent to 2.4 percent of GDP (Figure 2.24). Japan's R&D expenditure decreased slightly in value terms but remained stable as a share of GDP in (fiscal year) 2020. In Korea, state-led R&D spending grew by 15.8 percent year-on-year in 2020, the fastest pace in 15 years, mostly going toward machinery, ICT, and electrical and electronic technology (Korea Ministry of Science and ICT 2021); robust R&D spending is expected to continue in the next few years, focusing on next-generation technologies (Chae 2021). All three of the Plus-3 were among the top ten global economies with the highest intellectual property filings in 2020 (Figure 2.25).[29]

Figure 2.21. Selected ASEAN+3: New Business Formation, 2020–21
(Thousands of companies)



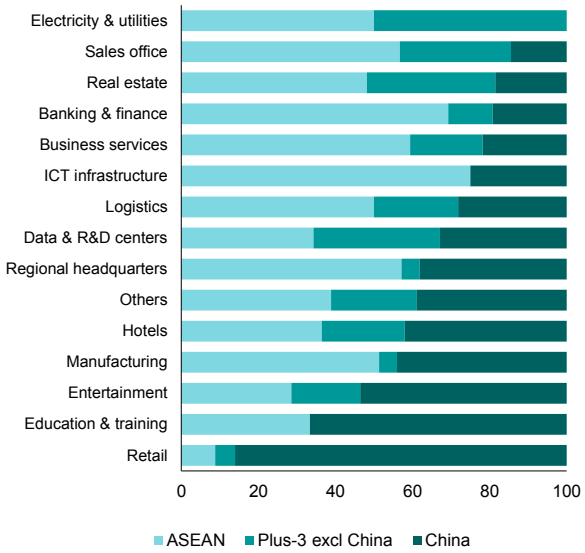
Source: National authorities via Haver Analytics.
Note: Pre-pandemic refers to the average from 2015 to 2019 except for Hong Kong (2016 to 2019). Data for Hong Kong refer to the total number of local companies incorporated. For other economies, data refer to the number of new business registrations or newly formed businesses.

Figure 2.22. ASEAN+3: Inward Greenfield FDI Announcements, by Recipient
(Number of projects)



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

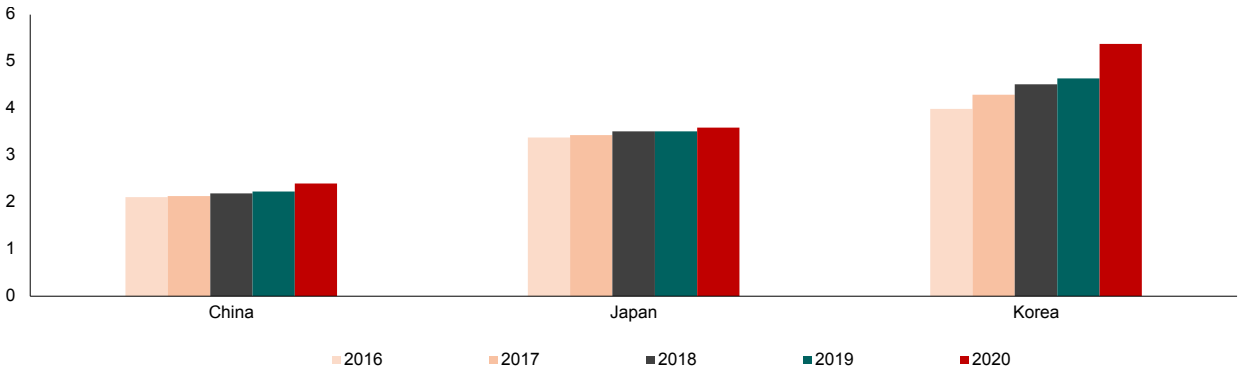
Figure 2.23. ASEAN+3: Inward Greenfield FDI Announcements, by Sector and Subregion, 2020–21
(Percent share to sector total)



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

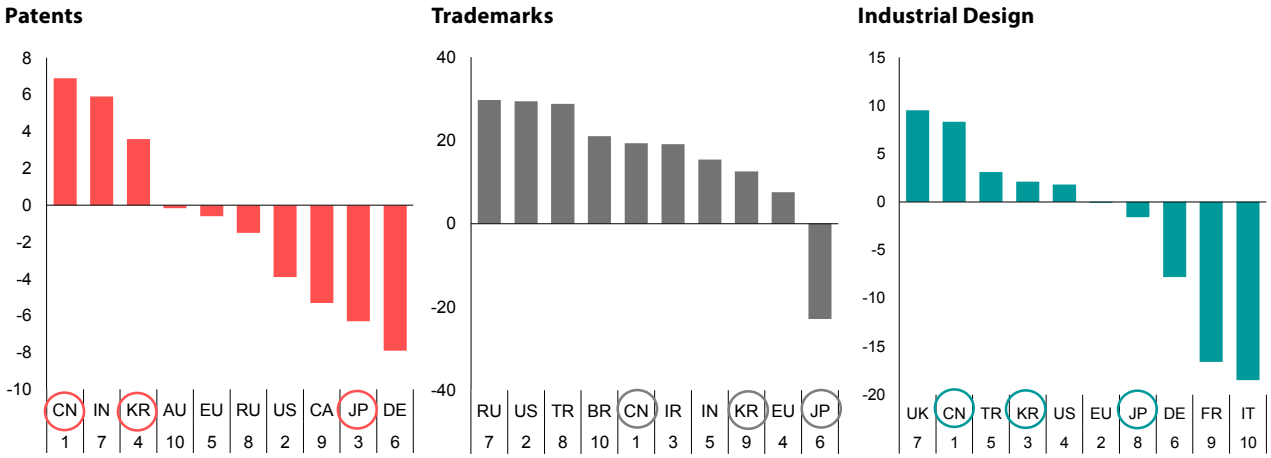
29/ China granted more than 3.5 million patents in 2020, 40 percent more than in the previous year.

Figure 2.24. Plus-3: Gross R&D Spending
(Percent of GDP)



Source: National authorities.
Note: Data for Japan refer to fiscal year starting April to March of the following year. R&D = research and development.

Figure 2.25. Top 10 Economies in Intellectual Property Filings, 2020
(Percent, year-on-year)



Source: World Intellectual Property Organization.
Note: Number labels refer to the economy's rank within the top 10 group for each intellectual property filing category in 2020. AU = Australia; BR = Brazil; CA = Canada; CN = China; DE = Germany; EU = European Union; FR = France; IN = India; IR = Iran; IT = Italy; JP = Japan; KR = Korea; RU = Russia; TR = Turkey; UK = United Kingdom; and US = United States.

Resource (re)allocation

Although the pandemic may have spurred increased digitalization, the resource reallocation needed for ASEAN+3 economies to adapt to the new normal and embrace the new economy may be larger than in past crises and recessions. To the extent that the new normal implies the need for a substantial reallocation of labor across sectors, some economies could see an increase in medium-term frictional unemployment and an increase in the underlying ("structural") unemployment rate. Moreover, if the COVID-19 crisis hurts the ability of economies to allocate resources to their most productive use—for example, by discouraging intersectoral or intraregional labor mobility; or by prolonging government support that keeps nonviable firms alive; or worse, by morphing into a banking crisis that damages the financial system's ability to allocate loanable funds productively—total factor productivity would be badly scarred.

Pandemic policies in the region have restricted intraregional labor mobility and helped preserve domestic employment matches in the short term. Many host countries in the region still have restrictions on the return or entry of foreign (migrant) workers. In some instances, restrictions have originated from the source country—for example, the Philippines imposed a temporary ban and ceiling on the overseas deployment of healthcare workers in 2020 and 2021, citing its own domestic need to fight the pandemic. At the same time, many economies in the region have provided wage subsidies to help protect domestic residents' jobs in sectors hard hit by the pandemic.[30] Cambodia, Hong Kong,

[30/] Temporary wage subsidies have been a common policy tool among advanced economies to contain the employment and social fallout of the COVID-19 crisis. Examples include the *kurzarbeit* (short time work allowance) in Germany, the *activité partielle* (partial unemployment) in France, the Emergency Bridging Measure in the Netherlands, and the JobKeeper Payment in Australia. These schemes provide the necessary liquidity to firms to hold on to their workers and allows them to ramp up operations quickly once economic activity recovers. A crucial aspect of these schemes is that workers retain their jobs even if their work is suspended, while the government picks up all or part of the wage bill.

Japan, Korea, Malaysia, and Singapore, among others, have implemented schemes to provide temporary wage support to employers (typically small businesses) whose operations have been affected by COVID-19 to retain employees instead of laying them off or dismissing them. While wage subsidies can help preserve employment matches during the pandemic, they could also hinder the reallocation of labor necessary for structural shifts after the pandemic if they lock workers in declining sectors for too long.

These policies per se are not expected to engender "labor match scarring" in the medium term. According to the Asian Development Bank (ADB), many migrant workers who have returned to face limited employment opportunities in their home countries still hope to work abroad when possible, and lessons from past crises suggest that intraregional labor mobility will pick up as economies recover and borders reopen (Kikkawa and others 2021).[31] Pandemic-related wage subsidy schemes in the region, by and large, have struck the right balance between supporting jobs that are temporarily redundant and limiting the extent of support for jobs that are unviable in the long term. All the schemes were time-bound—typically 1–3 months in duration, although extensions were sometimes necessitated by the health and economic situation—and some schemes have already expired. The subsidies were mostly partial and did not fully cover the wages of laid-off employees (although the employer contribution was as low as 10 percent in Japan and Korea). In most cases, the temporary wage subsidies were targeted at sectors whose activities were legally curtailed by mobility restrictions (e.g., in Malaysia and Singapore) and/or sectors that were likely to become viable again in the short to medium term (e.g., the garment and footwear sector in Cambodia).

However, prolonged regulatory forbearance and financial support could affect productivity in the long run if too many "zombie" firms are allowed to survive. As noted earlier in this chapter and in Chapter 1, many economies in the region have supported, and continue to support, firms that have been suffering due to the pandemic, through policy measures such as government loan guarantees, subsidized lending, loan forbearance, and repayment moratoria. While such support might help more firms to survive the pandemic, it could also create the problem of zombie firms—generally defined as firms that are unable to cover debt servicing costs from current profits over an extended period. An excessive number of zombie firms could cause a persistent drag on growth by depressing the creation of new businesses: as banks roll over existing loans to protect zombie firms from going bust, resources get trapped in those unproductive firms instead of being reallocated to more productive firms, leading to lower productivity for the overall economy.[32]

III. Will the Pandemic Brighten or Dim Services' Potential as an Engine of Growth?

Past AREO thematic chapters have emphasized the need for ASEAN+3 economies to build resilience through multiple engines of growth, notably by developing the services sector in parallel with manufacturing. AMRO (2018) noted that the services sector is no longer necessarily the low-productivity, low-wage sector of the past because technology has made many services more sophisticated ("commoditized") and tradable across borders. AMRO (2019) predicted that: "Traditional services such as tourism will grow exponentially, driven by the rising middle class. However, they will be transformed by the new technology and become more diverse and customized. New services such as BPO [business process outsourcing], e-commerce, Uber, and online gaming will emerge and develop into major industries."

The services sector has borne the brunt of the COVID-19 lockdowns and other pandemic containment measures. However, the impact has been differentiated across services depending on the extent of close-contact transactions and vulnerability to disruption (for example, the ease with which they could switch to online delivery). COVID-19 has pushed economies to rapidly adopt new behaviors for close-contact transactions and working environments, such as telework, virtual meetings, remote learning, e-commerce, digital payments, and greater use of automation and artificial intelligence (AI). To the extent that these new behaviors become permanent, the COVID-19 crisis would transform the landscape of services in the region in the post-pandemic new normal.

31/ As noted in AMRO (2020a), pre-COVID-19, up to 87 percent of intra-ASEAN migrants were low-skilled workers looking for better opportunities. Malaysia, Singapore, and Thailand were regional migration hubs for ASEAN migrant workers. The main senders of migrant workers across the region were Cambodia, Indonesia, Lao PDR, Malaysia, and Myanmar.

32/ For example, evidence from Japan in the 1990s—where the term "zombie firms" originated—shows that zombie-dominated sectors exhibited more depressed job creation and destruction and lower productivity than sectors with fewer zombies (Caballero, Hoshi, and Kashyap 2008). Lam and others (2017) find strong linkages between zombie firms and state-owned enterprises in contributing to corporate debt vulnerabilities and low productivity in China. In the current context, the global policy response to the COVID-19 pandemic has featured a combination of ultra-loose monetary policy and regulatory forbearance, raising the specter of a worldwide "zombie apocalypse" with "a growing number of 'invisible' walking dead among smaller firms" (G30 2020). See Acharya, Lenzu, and Wang (2021) for a theoretical framework explicating zombie lending and associated policy traps.

Will services still hold their promise as the new engine of growth for the region after the pandemic? This section takes a closer look at the longer-term impact of the COVID-19 crisis on key service industries highlighted in past thematic chapters as promising growth drivers for the region.

Travel and Tourism

Before COVID-19, there was reason to expect that the travel and tourism sector would account for a rapidly growing share of services exports in many ASEAN+3 economies for years to come. The rapid growth of ASEAN economies had improved the region's attractiveness as a tourism destination, including to its own expanding middle class (AMRO 2020a). Outbound tourism by Chinese nationals in the region was growing rapidly.[33] Existing tourism infrastructures and ecosystems were continuing to expand in scale and sophistication, and there were strategic plans to upgrade marketing, quality standards, connectivity, safety and security, natural and cultural heritage conservation, theme parks, hotels and restaurants, and other areas. The number of inbound tourists in the ASEAN+3 region reached 280.8 million in 2019, of which more than 60 percent were from within the region. The tourism sector's average contribution to economic activity and employment reached 11.5 percent of GDP and 12.9 percent of total employment, respectively, in 2019.

The region's travel and tourism industry has faced—and rebounded from—shocks in the recent past. In the last two decades, regional tourism has been hit by major crisis and catastrophic events, including the Bali bombings and the SARS outbreak (2002); the Indian Ocean tsunami (2004); the global financial crisis (2007); and the Tohoku earthquake and tsunami (2011), to name a few. The shocks had differential effects on tourist arrivals and tourism-related revenues across the region, reflecting their diverse nature, duration, and geographical point of impact. Extra-regional shocks like the global financial crisis affected inbound tourist arrivals in the region while region-specific shocks like natural disasters literally destroyed local physical tourism infrastructure as well as affecting tourist arrivals. Where tourist arrivals plunged, the effects became magnified across the economy through reduced demand for auxiliary services such as hotels, restaurants, travel agencies, and transportation, which dampened local employment and led to a broader contraction of demand that rippled out to the rest of the economy.

But the COVID-19 pandemic has disrupted the industry on an unprecedented scale for an extended period of time. With the worldwide collapse in international travel, the World Tourism Organization labeled 2020 as the "worst year in tourism history." This was certainly true for the ASEAN+3, whose prior experience with the SARS outbreak paled in comparison in terms of impact (Figures 2.26, 2.27). In 2020, the region's inbound tourist arrivals and tourism receipts plunged by roughly 85.0 percent and 77.6 percent, respectively, as ASEAN+3 economies implemented border closures, travel restrictions, mandatory quarantines, and other stringent containment measures to prevent the import and spread of the COVID-19 virus (Figures 2.28, 2.29). The travel and mobility restrictions also crimped domestic tourism in and outbound tourism from ASEAN+3 economies (including to the rest of the region) (Figures 2.30, 2.31).

The pandemic has taken the greatest economic toll on the region's tourism-dependent smaller economies. Cambodia and Thailand, in particular, had reaped large benefits from tourism prior to the pandemic—the sector's contribution to their respective GDPs amounted to more than 20 percent in 2019.[34] However, this contribution shrank sharply to just below 10 percent in 2020 (Figure 2.32). The collapse in tourism led to considerable job losses of about 24 million in the whole region in 2020—especially in Cambodia and Vietnam, where tourism employment declined by 27.9 percent and 24.7 percent, respectively, compared to 2019 (Figure 2.33).[35] The decline in tourism earnings also eroded the external position of several economies in the region—travel services exports as percent of GDP fell by more than 7 percentage points in 2020 compared to 2019 in Cambodia, Hong Kong, and Thailand due to the collapse in inbound tourism (Figure 2.34).[36]

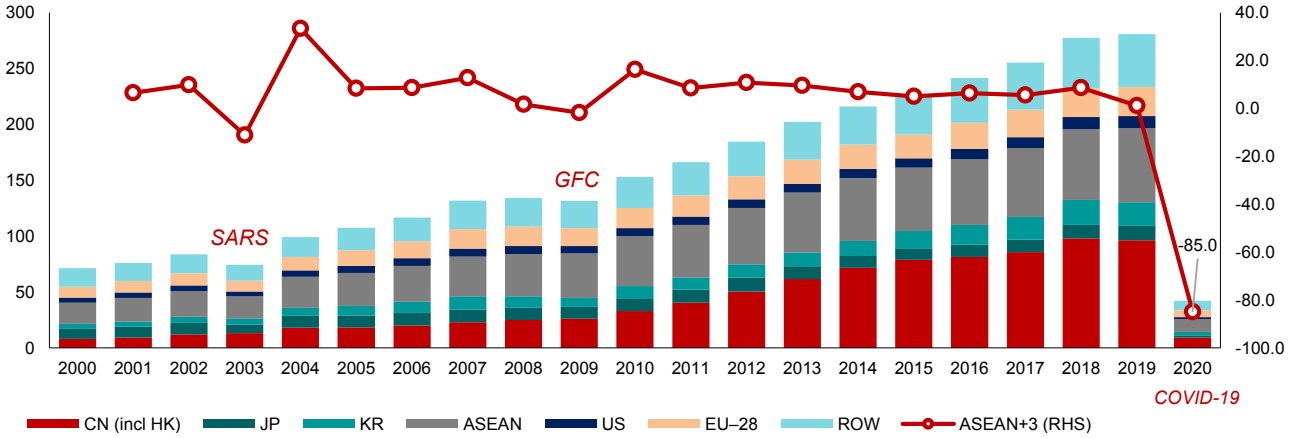
33/ Inbound tourism refers to the activities of a nonresident visitor within the country of reference. Outbound tourism refers to the activities of a resident visitor outside the country of reference. Domestic tourism refers to the activities of a resident visitor within the country of reference. Internal tourism refers to domestic and inbound tourism. National tourism refers to domestic and outbound tourism.

34/ The contribution of tourism to GDP, or "tourism GDP" is the change in national income resulting from the direct, indirect, and induced responses of domestic producers to the additional demand associated with domestic and international visitors. The direct effect includes the value-added of tourism-characteristic sectors such as hotels, airlines, airports, travel agents, and leisure and recreation services that deal directly with tourists. The indirect effect includes the value-added of other industries that supply tourism with intermediate inputs and capital goods such as the construction of new hotels, tourism marketing and promotion, food and cleaning services for hotels, fuel and catering services for airlines, and so on. The induced effect captures the additional demand for goods and services by those who are directly and indirectly employed by the tourism sector. See Oxford Economics (2021).

35/ Similar to tourism GDP, the contribution of tourism to employment, or "tourism employment" is the change in employment resulting from the direct, indirect, and induced responses of domestic producers to the additional demand associated with domestic and international visitors. See Oxford Economics (2021).

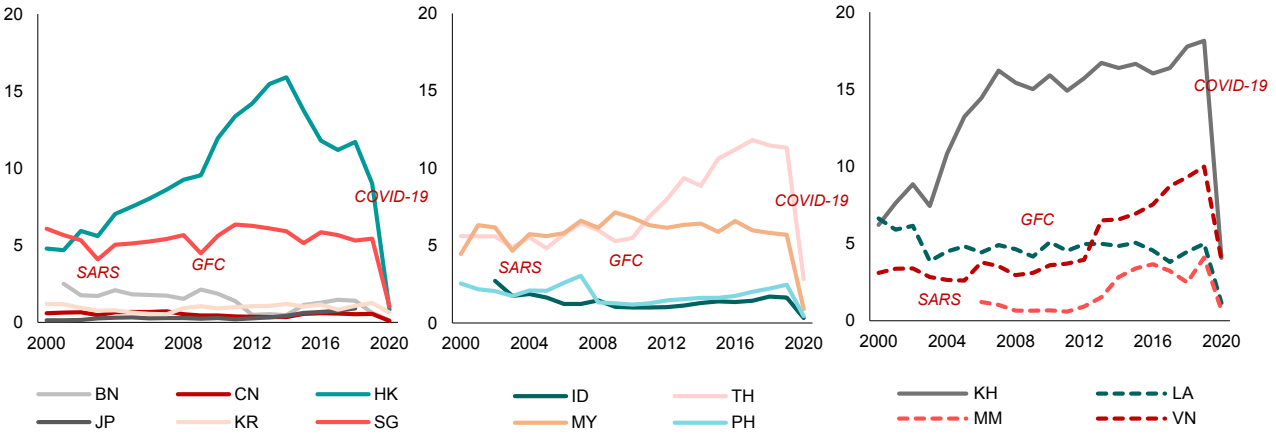
36/ According to Choo and others (2020), robust tourism receipts over the past decade have served as an essential source of foreign exchange for many economies in the region and have contributed to trade surpluses or helped cushion trade deficits in Cambodia, Indonesia, and Myanmar.

Figure 2.26. ASEAN+3: Inbound Tourist Arrivals, by Source Country
(Millions of tourist arrivals; percent, year-on-year)



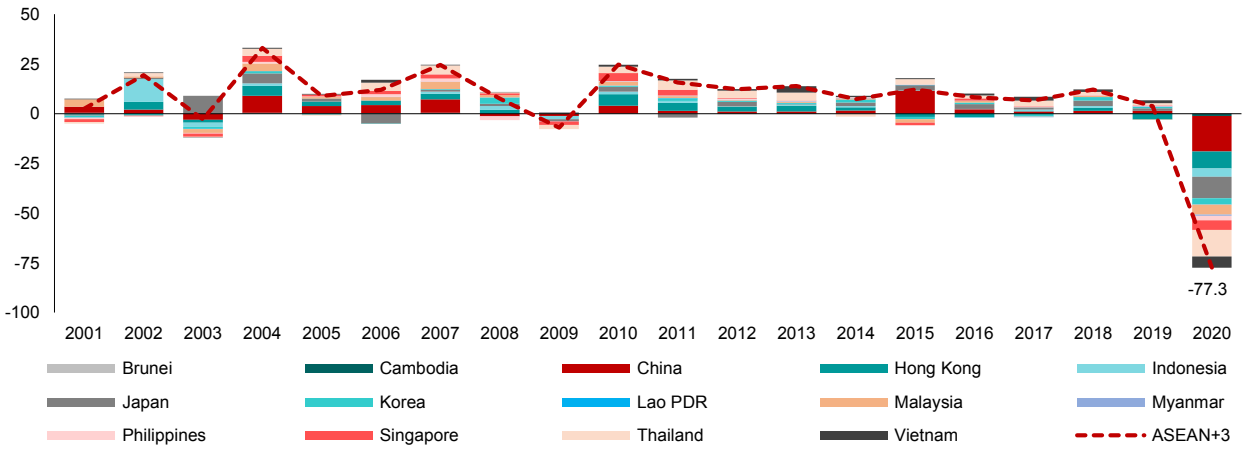
Sources: ASEANstats; national authorities; United Nations, World Tourism Organization; and AMRO staff calculations.
Note: China's tourist arrivals are AMRO staff estimates in 2020 and exclude arrivals from Hong Kong and Macau. CN = China; EU = European Union; HK = Hong Kong, China; JP = Japan; KR = Korea; ROW = rest of world; and US = United States.

Figure 2.27. ASEAN+3: Tourism Receipts, by Economy
(Percent of GDP)



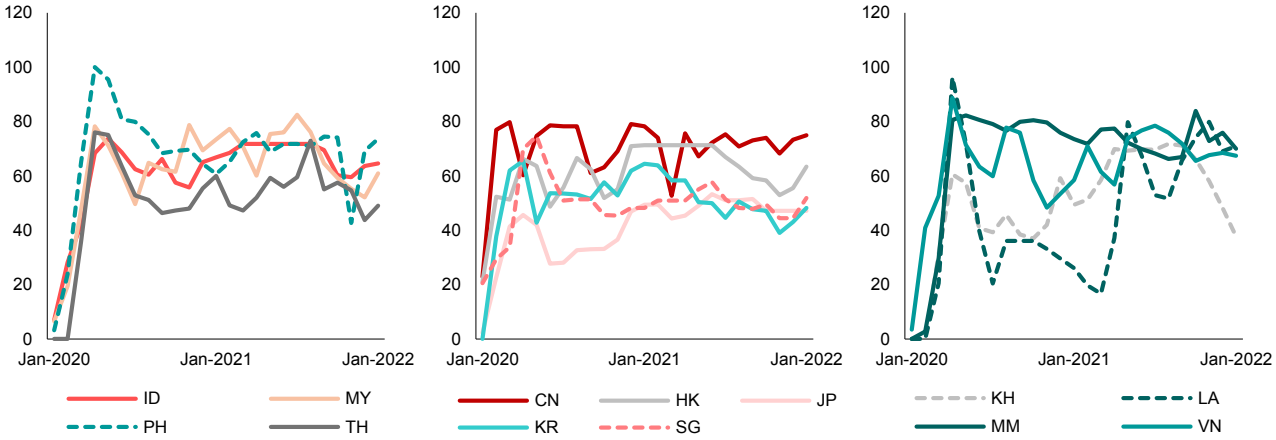
Sources: ASEANstats; national authorities; United Nations, World Tourism Organization (UNWTO); and AMRO staff calculations.
Note: Tourism receipts for China, Hong Kong, Indonesia, Japan, and Thailand in 2020 are sourced from the UNWTO. BN = Brunei; CN = China; GFC = global financial crisis; HK = Hong Kong; ID = Indonesia; JP = Japan; KH = Cambodia; KR = Korea; LA = Lao PDR; MM = Myanmar; MY = Malaysia; PH = the Philippines; SARS = severe acute respiratory syndrome; SG = Singapore; TH = Thailand; and VN = Vietnam.

Figure 2.28. ASEAN+3: Contribution to Growth of Tourism Receipts
(Percentage point contribution)



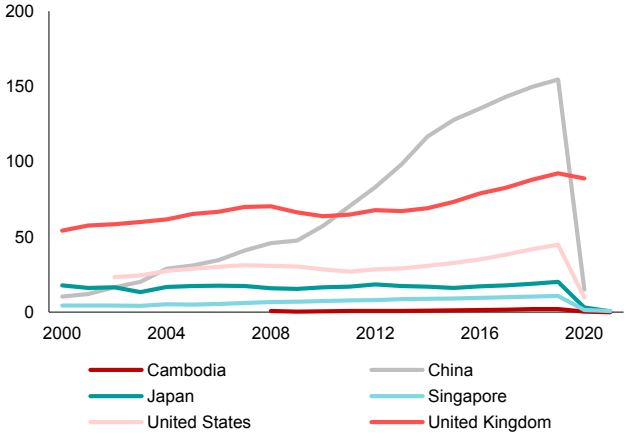
Sources: ASEANstats; national authorities; United Nations, World Tourism Organization (UNWTO); and AMRO staff calculations.
Note: Tourism receipts for China, Hong Kong, Indonesia, Japan, and Thailand in 2020 are sourced from UNWTO.

Figure 2.29. ASEAN+3: Government Response Stringency Index, by Economy
(100 = most stringent)



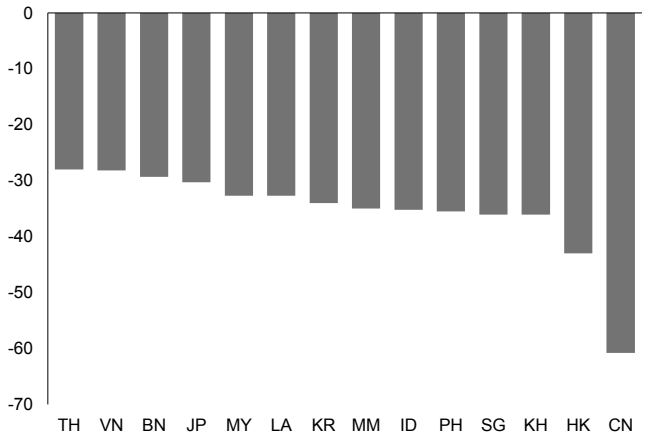
Source: Hale and others (2020).
Note: The index records the strictness of governments' lockdown policies, which primarily restrict people's activities. CN = China; HK = Hong Kong; ID = Indonesia; JP = Japan; KH = Cambodia; KR = Korea; LA = Lao PDR; MY = Malaysia; MM = Myanmar; PH = the Philippines; SG = Singapore; TH = Thailand; and VN = Vietnam.

Figure 2.30. Selected Economies: Outbound Tourism, by Country of Origin
(Millions of outbound visitors)



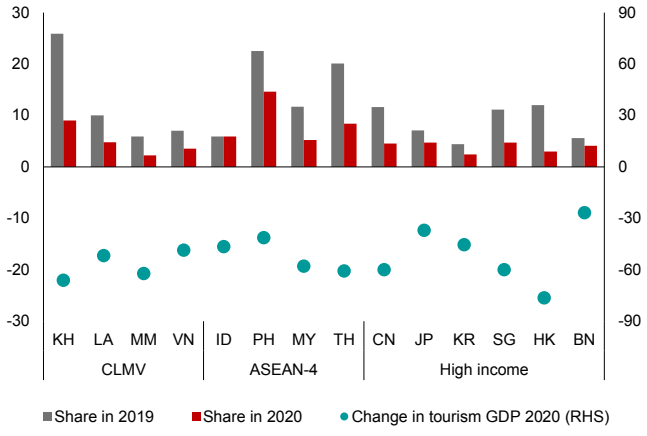
Sources: IBIS World; national authorities; Statista; and AMRO staff calculations.
Note: Data for the whole of China are not available for 2020 but estimated by applying the 2020 growth rate of outbound tourists from Beijing.

Figure 2.31. ASEAN+3: Growth in Domestic Visitor Spending, 2020
(Percent, year-on-year)



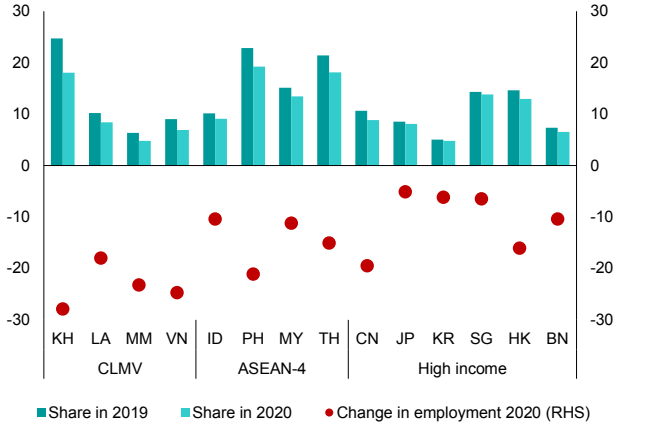
Source: World Travel and Tourism Council.
BN = Brunei; CN = China; HK = Hong Kong; ID = Indonesia; JP = Japan; KH = Cambodia; KR = Korea; LA = Lao PDR; MM = Myanmar; MY = Malaysia; PH = the Philippines; SG = Singapore; TH = Thailand; and VN = Vietnam.

Figure 2.32. ASEAN+3: Tourism GDP, 2019–20
(Percent of GDP; percent, year-on-year)



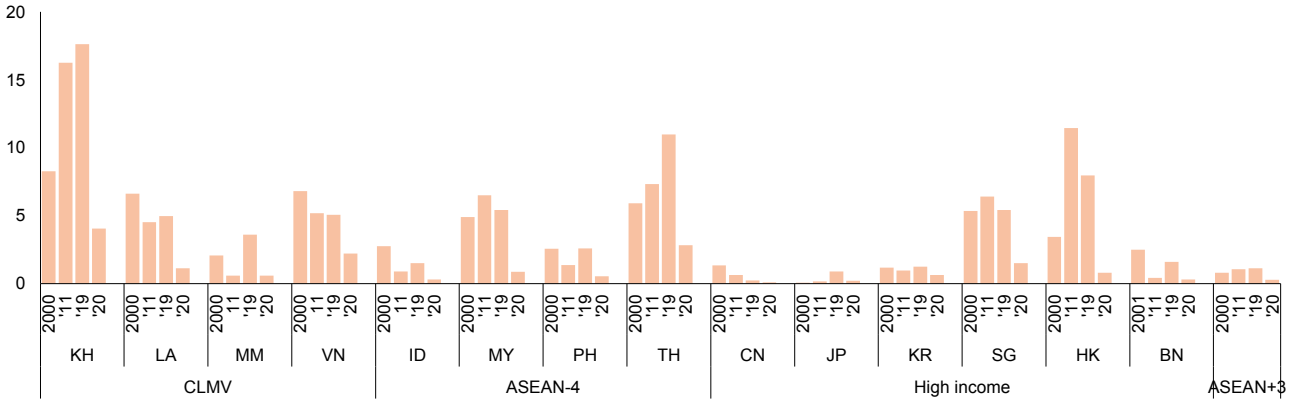
Source: World Travel and Tourism Council.
Note: BN = Brunei; CLMV = Cambodia (KH), Lao PDR (LA), Myanmar (MM), and Vietnam (VN); CN = China; HK = Hong Kong; ID = Indonesia; JP = Japan; KR = Korea; MY = Malaysia; PH = the Philippines; SG = Singapore; and TH = Thailand.

Figure 2.33. ASEAN+3: Tourism Employment, 2019–20
(Percent of total employment; percent, year-on-year)



Source: World Travel and Tourism Council.
Note: BN = Brunei; CLMV = Cambodia (KH), Lao PDR (LA), Myanmar (MM), and Vietnam (VN); CN = China; HK = Hong Kong; ID = Indonesia; JP = Japan; KR = Korea; MY = Malaysia; PH = the Philippines; SG = Singapore; and TH = Thailand.

Figure 2.34. ASEAN+3: Travel Services Exports
(Percent of GDP)



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

Tourism can only fully recover when COVID-19 is brought under control globally. More than two years into the pandemic, recurring outbreaks and the emergence of new virus variants continue to cloud the outlook for the tourism. The World Health Organization's (WHO's) caution—"if [COVID-19] is anywhere, it's everywhere, and people traveling have to understand that"—highlights the challenges to the sector's full recovery, which most experts do not envisage to be feasible before 2023 (Reuters 2020; UNWTO 2021). For recovery to be fully underway requires that not only COVID-19 infections be contained globally, but traveler confidence be fully restored. The latter may take a considerable amount of time, especially if the perceived risks to travelers vary across world regions (Box 2.3).

Tourism policy strategies focusing on rebuilding confidence, especially at the domestic level, will boost the sector in the initial phase of recovery. Several ASEAN+3 economies have taken measures to boost domestic tourism—a natural response when international borders remain largely closed—by offering discounted travel, lifestyle programs ("wellness tourism") and marketing support to entice (vaccinated) local residents to visit (Table 2.2).[37] Some of these ideas, such as wellness and adventure tourism, are likely to thrive in the post-pandemic period as well, as they would also appeal to foreign tourists. Refocusing on domestic tourism would also help larger ASEAN economies offset the loss of inbound tourists from China to some extent in the short term (Box 2.4).

In the longer term, policy action to drive the sector's growth must take into account the more long-lasting changes triggered by the pandemic. The pandemic has introduced significant changes to consumer and market behavior, and tourism in the post-pandemic world will no longer be business-as-usual. For the ASEAN+3 region's tourism sector, this offers opportunities to innovate, diversify service offerings, find new markets, and pursue a more sustainable and inclusive growth paradigm. In the aftermath of COVID-19, safety and sustainability will most likely be factored in consumer choices, while the travel industry will need to contend with the changes in the labor landscape and some constraints in capacity due to pandemic scars. These changes would have implications for future tourism policy in the region—one that puts more emphasis on resilience and crisis management (OECD 2020).

On the demand side, the pandemic has influenced travel preferences and behavior, and thus the nature of future tourism consumption. Industry analysts predict that post-pandemic travelers will place a higher premium on personal safety including hygiene standards and privacy; and will prefer activities with less social contact and smaller or open-air gatherings, such as ecotourism. Social distancing restrictions and health protocols are likely to be de rigueur in the short term, especially as governments around the world continue to work on the harmonization and mutual recognition of COVID-19 travel risk reduction measures. Survey evidence also suggests that the volume of inbound tourists to the region from China might not yet return to pre-pandemic levels, as overseas travel restrictions remain and domestic destinations become increasingly attractive to local travelers (Penhirin and Wouters 2021, Huang and others 2021) (Figures 2.35, 2.36; see Box 2.4).[38]

Tourism businesses and service providers must be able to quickly adapt to new emerging trends and demand drivers to survive post-pandemic. Some businesses in the

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37/ Domestic tourism had been growing in the region prior to the pandemic—see Choo and others (2020).

38/ China's development plan for the tourism sector during the 14th Five-Year Plan period (2021–25) maps out the promotion of inbound and outbound travel "in an orderly, steady manner, on the premise that the global COVID-19 pandemic is brought under control" (State Council, People's Republic of China 2022). Until such time, domestic tourists will likely be the main focus of the tourism development plan.

tourism sector and auxiliary industries, such as hotels and airlines, have already been forced to cut operations or shut down, limiting the capacity for recovery in the near term. ASEAN+3 flag carriers have grounded a large number of aircraft since the onset of the pandemic, eliminated regional airlines, streamlined their operations, and laid off staff including pilots and cabin crew.[39] In Thailand, at least a third of all tourism-related businesses have already closed shop (Clarke 2021), while in Cambodia, more than 3,000 have done so. This has resulted in job losses in many Asian economies, as a large number of workers became redundant for several months (ILO 2020). With many of these workers having moved to other sectors or been reskilled for other occupations, or simply having lost their skills due to the long period of unemployment, the industry is now experiencing a skills shortage—albeit transitory—which may derail the potential for a faster turnaround.[40] Furthermore, with digital transformation imminent in the tourism sector post-pandemic, traditional business operators must adapt quickly to technology-enabled solutions, collaborate closely with technology service providers, and rethink ways of delivering tourism offerings and services.

The pandemic has thus given ASEAN economies an opportunity to revisit their tourism strategies and set new priorities for the sector to evolve as a growth driver going forward. The ASEAN Tourism Strategic Plan (2016–25) could be updated to reflect post-pandemic realities, for example, by shifting the focus of tourism development from volume to value and putting greater emphasis on sustainable tourism—defined by the World Tourism Organization as "tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities." One silver lining of the pandemic-induced tourism slowdown has been the opportunity to restore the region's natural environments and cultural sites after being exploited and damaged from years of mass-tourism and pollution, and to reboot the tourism model to respond to shifting demand trends. Indonesia and Thailand, for example, are shifting their focus from "quantity" (the number of tourists who visit) to "quality" (the amount of time and money they spend in the country and their impact on the environment). Malaysia and Thailand are also further developing their medical tourism industry.

Table 2.2. Selected ASEAN+3: Domestic Tourism Marketing Campaigns

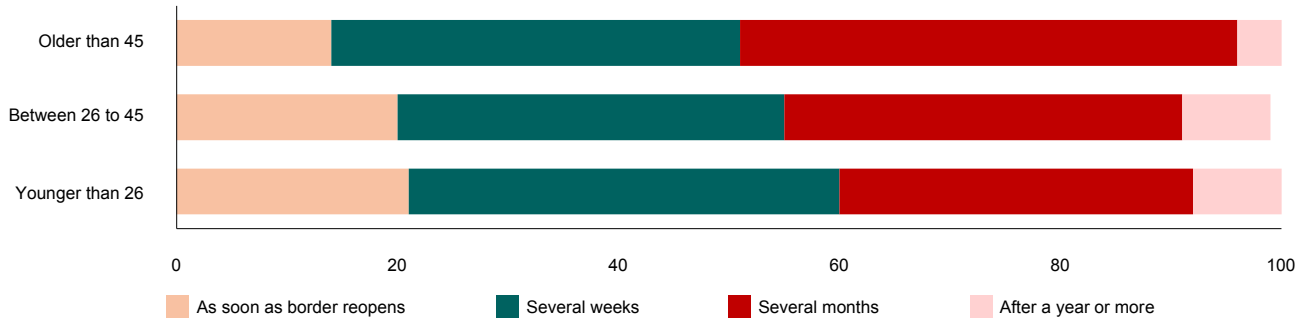
Economy	Campaign
Brunei	*Selera Bruneiku* (A Taste of Brunei), November 2020: Domestic tourism campaign offering staycation packages and tours, promotional menus, and cultural and recreational activities to encourage residents to visit local attractions and spend on Brunei-made products.
Cambodia	#AngkorLikeNeverBefore, February 2021: Social media campaign to attract local (and foreign) tourists to visit Angkor without the crowds. "Rediscover the Wonders of Cambodia," January 2022: Digital marketing campaign highlighting activities and ecotourism destinations to promote domestic tourism.
Indonesia	#DiIndonesiaAja (#JustStayInIndonesia), July 2020: Social media campaign to encourage Indonesians to travel domestically and highlighting messages of cleanliness, health, and safety and social distancing.
Japan	Go To Travel, temporarily suspended: Domestic tourism campaign offering discounts on travel inside Japan for residents of Japan.
Lao PDR	*Lao Thiao Lao* (Lao Visit Laos), September 2020: Online national tourism marketing campaign primarily targeted to younger locals, showcasing travel destinations and activities in every province.
Malaysia	*Jom Jalan Jalan*, October 2021: 5-month campaign with prizes including holiday packages and cash rewards for Petron Malaysia customers to explore local tourist spots.
The Philippines	*Have A Safe Trip, Pinas*, November 2020: Videos promoting the observance of health and safety protocols among local tourists and the general public when traveling amid the pandemic.
Thailand	*Rao Tiew Duay Kan* (We Travel Together), February 2022: Discounts on hotel room rates and airfares to encourage Thais to travel and spend domestically. *Tour Teaw Thai* (Travel Around Thailand), October 2021: Subsidized local tour packages for domestic tourists.
Vietnam	Vietnamese People Travel in Vietnam, May 2020: Promotional campaign with discounted tour packages and other incentives to encourage domestic tourism, together with guidelines on reopening tourism activities in localities with safety measures against the pandemic.

Sources: AMRO staff; and various media reports.

39/ Singapore Airlines and Cathay Pacific laid off 20–25 percent of their staff in 2020 and have switched to focusing mainly on international air cargo flights. Singapore Airlines absorbed its regional carrier, SilkAir, while Cathay Pacific dissolved its regional carrier, DragonAir. Malaysia Airlines, Philippine Airlines, Garuda, Thai Airways, and All Nippon Airways, among others, have undergone, or are undergoing major restructuring as a result of large losses inflicted by the pandemic.

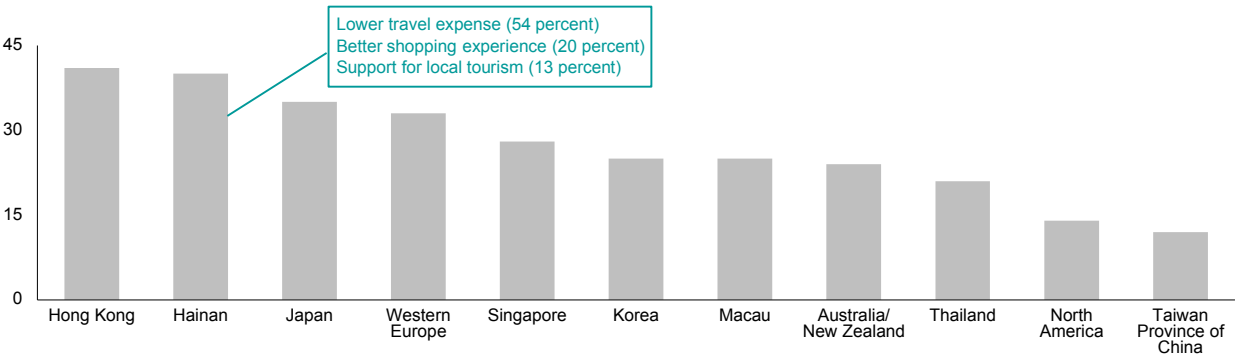
40/ A recent survey found that slightly more than half of employed airline pilots in the Asia-Pacific region—the worst hit globally by the drop in international travel due to tough border restrictions—were flying and about a quarter were still unemployed (Freed 2022). As borders reopen and commercial air travel resumes, an added need will emerge to address the problem of skill deterioration in pilots who may have been out of a cockpit for up to 18 months.

Figure 2.35. China: Chinese Tourists' Intent to Travel Post-Pandemic
(Percent of respondents by age group)



Source: Penhirin and Wouters (2021).
Note: Survey (n = 2,000) conducted March 2021.

Figure 2.36. China: Chinese Tourists' Top Three Locations to Visit Post-Pandemic
(Percent of respondents)



Source: Penhirin and Wouters (2021).
Note: Survey (n = 2000) conducted March 2021, with the question, "Assuming the pandemic is fully under control and China has resumed travel with the entire world, what would be your top three destinations to visit?"

Box 2.3:

Tourism Recovery after SARS

Like COVID-19, severe acute respiratory syndrome (SARS) and travel were intricately interlinked. At that time "[t]ravelers belonged to those primarily affected in the early stages of the outbreak, travelers became vectors of the disease, and finally, travel and tourism themselves became the victim," (Wilder-Smith 2006). By March 15, 2003, the World Health Organization (WHO) had begun to issue advisories to postpone nonessential travel to SARS-affected areas, in an effort to limit the spread of infection by international travel. International tourist arrivals in SARS-affected economies such as China, Hong Kong, and Singapore declined sharply in the second quarter of 2003; other regional economies that were SARS-free, such as Malaysia and Thailand, also saw declines in tourist arrivals.

The SARS experience highlighted how the perception of risk can magnify the direct consequences of a health crisis for tourism recovery. The slowdown in tourist arrivals in SARS-affected economies persisted for 6–9 months, before starting to return to pre-SARS levels after the WHO declared the outbreak contained in July 2003 (Figure 2.3.1). As noted by Wilder-Smith (2006), the outbreak of SARS created international anxiety because of its novelty, its ease of transmission in certain settings, and the speed of its spread through air travel, combined with extensive media coverage. This suggests that perception of elimination (or at least containment) of the disease is as crucial as the disease itself, as fear and perceived risk of infection would cause travelers to be cautious—until the official SARS alert was lifted from their country or territory, the authorities had "no ground[s] to promote and attract inbound tourists from other countries" (Mao, Ding, and Lee 2010). This factor tends to be more important following health crises than other types of tourism shocks such as natural disasters or financial crises, as evidenced by the shallower drop and/or a faster turnaround in arrivals after those crises compared to SARS (Figure 2.3.1).

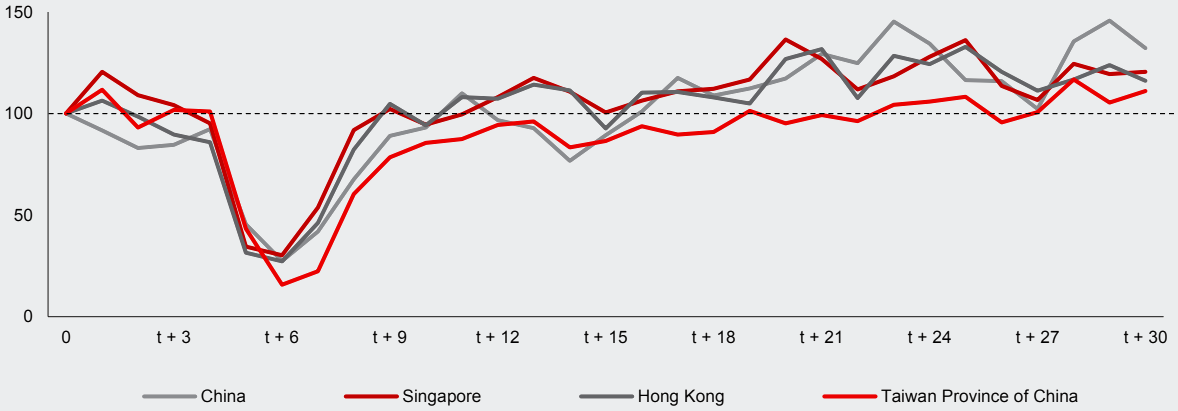
In the aftermath of SARS, massive marketing campaigns and attractive travel incentives were rolled out to restore international traveler confidence and entice tourists back to the region. These included Hong Kong's "Live It, Love It" campaign (2003), Singapore's "Singapore Roars!" campaign (2003) and the regionally coordinated "Project Phoenix" by the Pacific Asia Travel Association. The aim of these campaigns was to rebuild the affected economies' reputations as safe tourism destinations.

But not all tourists returned immediately. In the case of Taiwan Province of China, a study by Mao, Ding, and Lee (2010) shows that tourists from Hong Kong and the United States were the first to return after the territory was officially removed from the list of SARS-affected areas in July 2003, whereas tourist arrivals from Japan resumed very slowly, taking almost a year to recover to pre-outbreak levels. Thus, different tourist-origin economies can have their own different recovery patterns and underlying driving forces. According to Mao, Ding, and Lee (2010), while neither Japan nor the United States were affected by SARS, Japanese tourists took longer to feel fully safe about traveling to Taiwan Province of China, whereas US tourists might have had greater confidence in the messaging of the WHO.

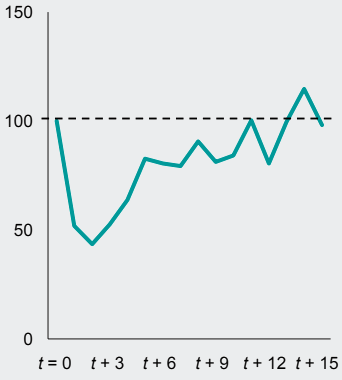
The author of this box is Marthe Hinojales.

Figure 2.3.1. Selected Asian Economies: Visitor Arrivals after Major Shocks
(100 = month corresponding to the initial shock)

SARS (2002)

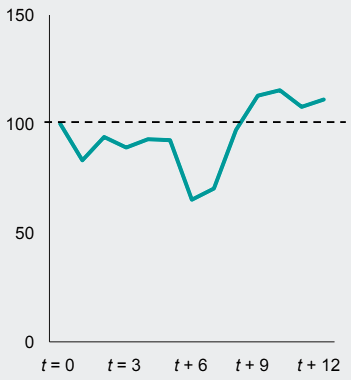


Japan: Tohoku Earthquake and Tsunami (2011)



Indonesia, Thailand: Indian Ocean Tsunami (2004)

Indonesia: Bali Bombings (2002)



Sources: National authorities via CEIC; and AMRO staff calculations.
Note: For the SARS crisis, t0 = November 2002 (first case reported). For the Tohoku earthquake and tsunami, t0 = March 2011; for the Indian Ocean tsunami, t0= December 2004; for the Bali bombings, t0 = October 2002.

Box 2.4:

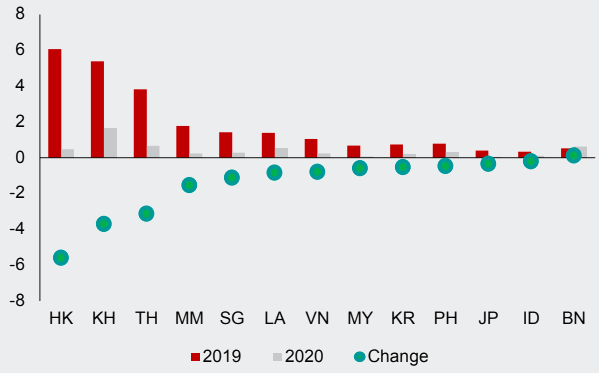
ASEAN+3 Inbound Tourism: The Importance of China

Two years into the pandemic, the need to reopen to international visitors has been particularly urgent for several ASEAN economies that are heavily reliant on the tourism sector. In 2019, the contribution of tourism to GDP—or "tourism GDP"—was more than 20 percent in Cambodia, the Philippines, and Thailand, and more than 10 percent in Hong Kong, Lao PDR, Malaysia, and Singapore.[1] In 2020, tourism GDP in all ASEAN+3 economies fell dramatically due to border closures in response to the pandemic: the declines ranged from 27 percent in Brunei to 76 percent in Hong Kong (see Figure 2.34 in the main text). As vaccines become more widely available in the ASEAN+3, some economies in the region have slowly begun reopening their borders in an effort to revive their tourism industry and start the economic recovery process (Table 2.4.1).

Yet a rapid revival in inbound tourism is unlikely without the return of Chinese tourists—a key source of tourism earnings for the region. China ranks among the top three tourism source countries for the ASEAN+3, according to estimates by the United Nations World Tourism Organization and the World Travel and Tourism Council (Table 2.4.2). Pre-pandemic, its share of inbound arrivals ranged from 12 percent in Malaysia to 68 percent in Hong Kong. China's borders have been closed since the onset of the pandemic, with authorities tightening restrictions on overseas travel of its citizens and limiting passport issuance and renewals to essential purposes only. In the first half of 2021, China's immigration authority issued only 335,000 passports, or only 2 percent of the number issued in the same period in 2019. In the short term, outbound Chinese travel for leisure is unlikely to recover fully to pre-pandemic levels.

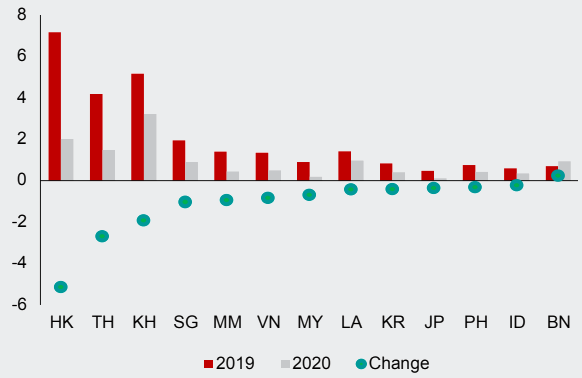
A slower (faster) return of Chinese tourists will be felt across the ASEAN+3 region differently. In 2020, China's contribution to tourism GDP in Hong Kong dropped to 0.5 percent of GDP from 6.1 percent in 2019; in Cambodia and Thailand, the contribution by Chinese visitors dropped by more than 3 percent of GDP (Figure 2.4.1). The same economies also saw the sharpest fall in the share of tourism employment to total employment due to the loss of Chinese tourists in 2020 (Figure 2.4.2). In 2021–22, the potential economic benefit for economies that have reopened or will reopen to Chinese tourists is estimated to range from 0.05 percent of GDP for Indonesia to 5.6 percent of GDP for Hong Kong, with Cambodia and Thailand also likely to receive a bigger boost compared to the rest of ASEAN+3 (Figure 2.4.3).[2]

Figure 2.4.1. ASEAN+3: China's Contribution to Tourism GDP, 2019–20
(100 = month corresponding to the initial shock)



Sources: World Tourism and Travel Council; and AMRO staff calculations.
Note: China's contribution is estimated by adjusting the destination economy's tourism GDP by the share of international visitor expenditure in total visitor expenditure and the share of Chinese visitors in total international visitors.
BN = Brunei; 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 2.4.2. ASEAN+3: China's Contribution to Tourism Employment, 2019–20
(Percent of total employment)



Sources: World Tourism and Travel Council; and AMRO staff calculations.
Note: BN = Brunei; 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.

The author of this box is Hongyan Zhao.

1/ For details on the definitions of "tourism GDP" and "tourism employment" see footnotes 34 and 35 in the main text and Oxford Economics (2021).

2/ The potential receipts from Chinese tourists in 2021–22 are estimated as the 2020 loss of travel and tourism spending by Chinese visitors prorated by the amount of time the economy has been or will be open to Chinese tourists. The estimation assumes that these economies could achieve 2019 levels of tourism GDP in 2021–22 if Chinese arrivals return to pre-pandemic levels; this, however, is an admittedly optimistic assumption as high travel costs, strict travel protocols, changes in preferences, and other factors could still reduce arrivals.

Table 2.4.1. ASEAN+3: Restrictions on Inbound Tourism and Border Reopening Plans, December 31, 2021

Economy	Status at the end of 2021	Plans for Reopening to International Tourists in 2022 (as of the end of 2021)
Brunei	Not open to foreign visitors	
Cambodia	Fully open to foreign visitors as of November 15, 2021—fully vaccinated visitors can skip quarantine if they test negative for COVID-19.	
China	Not open to foreign visitors	
Hong Kong	Not open to foreign visitors. Visitors from mainland China, Macao, and Taiwan Province of China can enter but must undergo quarantine.	
Indonesia	Partially open to foreign visitors as of October 14, 2021—visitors from certain countries (including China) can enter Bali and the Riau Islands on direct flights only, with a quarantine period of 5 days.	Vaccinated travel lanes (VTLs) from Kuala Lumpur to Jakarta and Bali to start in early 2022.
Japan	Not open to foreign visitors	
Korea	Partially open to foreign visitors (not including China) as of November 15, 2021—VTL with Singapore.	
Lao PDR	Not open to foreign visitors	Fully vaccinated tourists to be allowed to visit provinces and cities designated as "green zones" (where vaccination rates exceed 70 percent) beginning January 1, 2022.
Malaysia	Partially open to foreign visitors as of November 15, 2021—fully vaccinated visitors can enter the Langkawi islands without having to quarantine but must stay there for a minimum of 3 days (7 days if they wish to travel to other parts of Malaysia). VTL with Singapore.	VTLs from Kuala Lumpur to Indonesia Jakarta and Bali to start in early 2022.
Myanmar	Not open to foreign visitors	Land border crossings with Thailand and China to reopen by January 2022; international commercial air travel to restart by Q1 2022.
The Philippines	Not open to foreign visitors	Fully vaccinated tourists arriving from 44 "green list" countries (including China) to be allowed to enter in 2022 (delayed from December 1, 2021).
Singapore	Partially open to foreign visitors as of September 8, 2021—VTLs with Brunei and Germany, subsequently extended to 22 more countries (not including China). – New ticket sales for all VTL flights temporarily suspended from 23 December 2021.	Temporary suspension of VTL flight ticket sales to be lifted on January 20, 2022.

Economy	Status at the end of 2021	Plans for Reopening to International Tourists in 2022 (as of the end of 2021)
Thailand	Partially open to foreign visitors as of July 1, 2021—fully vaccinated visitors can enter without having to quarantine under the Phuket Sandbox program but must stay in Phuket for a minimum of 7 days if they wish to travel to other parts of Thailand. Sandbox program subsequently expanded to include more "blue zones" (where vaccination rates exceed 70 percent) and all tourist-origin countries. Fully vaccinated visitors from certain countries (including China) can enter without having to quarantine under the "Test & Go" scheme. – "Test & Go" scheme and all Blue Zone Sandbox programs (except Phuket) temporarily suspended effective December 22, 2021.	Temporary suspension of "Test & Go" scheme and Blue Zone Sandbox programs to be lifted in 2022.
Vietnam	Partially open to foreign visitors as of November 20, 2021—fully vaccinated visitors from certain countries (including China) can enter without quarantine on a package tour to certain locations under the Vaccine Passport Program.	Second phase of reopening to start in January 2022 with more locations added to the Vaccine Passport Program; full reopening expected sometime in June or July 2022.

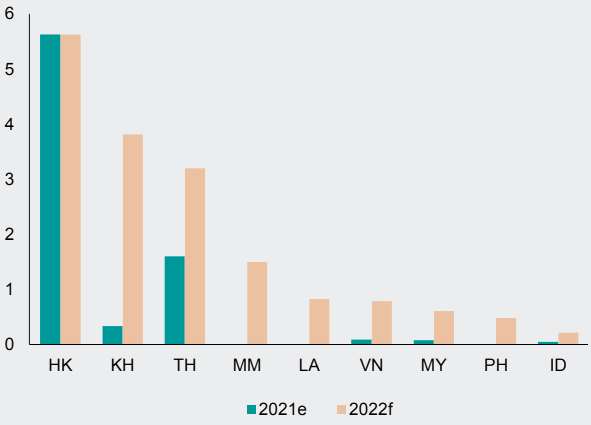
Sources: AMRO (2021f); and media reports.

Table 2.4.2. ASEAN+3 excluding China: Top Five Source Economies of Inbound Tourists, 2019

Rank	1	2	3	4	5
Cambodia	CN (27)	VN (13)	TH (7)	LA (7)	KR (5)
Hong Kong	CN (68)	KR (3)	US (3)	PH (3)	JP (3)
Japan	CN (30)	KR (18)	TW (15)	HK (7)	US (5)
Korea	CN (34)	JP (19)	TW (7)	US (6)	HK (4)
Singapore	CN (19)	ID (14)	IN (8)	AU (6)	MY (5)
Thailand	CN (28)	MY (11)	IN (5)	LA (5)	KR (5)
Vietnam	CN (29)	KR (25)	JP (6)	TW (5)	US (4)
Brunei	MY (25)	CN (21)	ID (10)	PH (7)	KR (5)
Indonesia	MY (19)	CN (13)	SG (13)	AU (9)	IN (4)
Lao PDR	TH (44)	CN (21)	VN (19)	KR (5)	US (1)
Myanmar	TH (44)	CN (34)	JP (3)	IN (3)	KR (3)
Philipines	KR (24)	CN (21)	US (13)	JP (8)	TW (4)
Malaysia	SG (39)	ID (14)	CN (12)	TH (7)	BN (5)

Source: World Travel and Tourism Council.
Note: AU = Australia; BN = Brunei; CN = China; HK = Hong Kong; ID = Indonesia; IN = India; JP = Japan; KR = Korea; LA = Lao PDR; MY = Malaysia; PH = the Philippines; SG = Singapore; TH = Thailand; TW = Taiwan Province of China; US = United States; and VN = Vietnam. Numbers in parentheses refer to source economy's percent share of total inbound tourists.

Figure 2.4.3. Selected ASEAN+3: China's Potential Contribution to Tourism GDP, 2021–22
(Percent of 2019 GDP)



Sources: World Tourism and Travel Council; and AMRO staff calculations.
Note: Travel and tourism spending by Chinese visitors is not calculated for 2021 for Lao PDR, Myanmar, and the Philippines (as they have not reopened to Chinese tourists). Other regional economies are not included in calculations for both years as they did not/have not announced plans to reopen to Chinese tourists. e = estimate; f = forecast; HK = Hong Kong; ID = Indonesia; KH = Cambodia; LA = Lao PDR; MM = Myanmar; MY = Malaysia; PH = the Philippines; TH = Thailand; and VN = Vietnam.

E-Commerce and Other Digital Services

The rise of the services sector in the ASEAN+3 region has been facilitated by the technological revolution, which has made services more tradable and commoditized. As envisaged in AMRO (2019, 2020a), services in the new economy would include not just traditional services such as tourism, but also new services that have been made viable and thrived under the digital economy, such as e-commerce and ride-sharing.

The COVID-19 pandemic has accelerated the "flight to digital" and induced quicker adoption of digital services, driven by the implementation of social distancing measures and government support measures to curb the spread of the virus. Many ASEAN+3 governments have also included special measures in their COVID-19 support and stimulus packages to encourage digital services (Table 2.3). This has resulted in a boom in digital service consumption, including e-commerce, videoconferencing, digital financial services, video-streaming, and digital health (or "healthtech")—a trend that is expected to continue post-pandemic. In the large ASEAN economies, the number of new internet users increased by some 40 million in 2021, raising internet penetration to 75 percent of the population—compared to 68.4 percent in 2020 and 62.2 percent in 2019, and to the current world average of about 60 percent (Google, Temasek, Bain & Company 2021). The ASEAN Digital Masterplan 2025, which was shaped by and launched amid the COVID-19 pandemic in January 2021, envisions ASEAN as a leading digital community with high-quality and ubiquitous connectivity running safe digital services relevant to the needs of end-users (ASEAN 2021a).

Table 2.3. Selected ASEAN+3: Measures to Promote Digital Services in Pandemic Support/Stimulus Packages

Economy	Measures
Brunei	• Co-matching grant for e-commerce and logistic services. • E-commerce platform *e-Kadai* for businesses to market their products online. "Community for Brunei" digital platform for consumers to purchase from and support micro- and smallsized businesses through online payments.
China	• Stepped-up financing support for major technological innovation projects.
Indonesia	• Acceleration of digitalization via raising the Quick Response Indonesian Standard transaction limit and lowering the merchant discount rate for public service providers.
Malaysia	• Acceleration of the National Digital Network (JENDELA) Plan to improve broadband quality and coverage and provide internet access across the country. • Loans for SMEs looking to digitalize or automate their businesses.
The Philippines	• Waiver of fees for central bank-supervised financial institutions to offer digital financial services.
Singapore	• Grants for businesses in the food services and retail sectors to digitalize with business process, e-commerce, or advanced solutions.
Thailand	• Corporate income tax exemptions for foreign investment projects that support digital technology adoption.
Vietnam	• Reduction in e-banking fees to encourage cashless transactions.

Sources: AMRO (2021f); and media reports.

E-commerce

E-commerce—the buying and selling of goods and services over the internet—has been a bright spot in the region's economies during the pandemic. In the large ASEAN economies, about one in three digital merchants surveyed in 2021 believed they would not have survived the lockdowns if not for digital platforms (Google, Temasek, and Bain & Company 2021). E-commerce retail sales in these economies are estimated to have reached USD 174 billion in gross merchandise value in 2021, a 49 percent increase from 2019 (Figure 2.37). Among the Plus-3 economies, China is estimated to have generated the world's highest amount of retail e-commerce sales in 2021—almost USD 2.8 trillion or 56.8 percent of global retail e-commerce sales—with Japan and Korea in fourth and fifth place, respectively (Figure 2.38).

The outlook for e-commerce in the region's economies is positive even after the COVID-19 crisis, as consumers and businesses have become accustomed to using digital services. Digital consumption has now turned out to be a way of life in the region. Survey data from the large ASEAN economies show that new digital consumers in 2020 continued with their online consumption in 2021 with no signs of reversal, chiefly because of the

convenience and integration of digital services into their daily life (Google, Temasek, Bain & Company 2021) (Figure 2.39). In these economies, 8 in 10 internet users, on average, have made online purchases at least once (Figure 2.40). In the medium to long term, the gross merchandise value of ASEAN's digital economy is projected to soar from USD 117 billion in 2020 to USD 363 billion in 2025 and USD 1 trillion in 2030 (Google, Temasek, Bain & Company 2021). The outlook for the e-commerce sector in the Plus-3 economies is similarly rosy, with online retail sales in China, Japan, and Korea projected to surpass USD 3.3 trillion, USD 273.4 billion, and USD 242.2 billion, respectively, in 2025, according to GlobalData. This is largely supported by the economies' strong technological infrastructure, high internet and smartphone penetration, rising e-commerce platforms and consumer confidence, as well as the availability of various payment solutions.

China's trailblazing in e-commerce may hold useful lessons for the region on creating a supportive policy environment for the sector to develop. From accounting for less than 1 percent a decade ago, China today makes up more than half of global e-commerce retail sales (Belcher 2006).[41] In 2021, China is expected to have digitally transacted 52.1 percent of its total retail sales, becoming the first economy where e-commerce sales outstripped brick-and-mortar retail sales (Cramer-Flood 2021). China's government has attached great importance to the development of e-commerce, which it regards as an important instrument for economic transition and opening-up. Over the last decade and a half, the government has played a supporting role in the development of e-commerce by promoting the development of basic e-commerce infrastructure; popularizing e-commerce through training and other activities to raise e-commerce awareness and skills among businesses; and encouraging innovation and cultivating modern online businesses by assisting with developing production and processing supply chains and marketing links (Jiang, Zhang, and Jin 2021) (Box 2.5). After a decade or so of expansion in the retail e-commerce sector, however, the authorities are now shifting their focus to next-generation issues such as securing private data, stamping out monopolistic practices, and encouraging greater competition. In August 2021, China passed the Personal Information Protection Law, which lays out for the first time a comprehensive set of rules around data collection, processing, and protection. In October 2021, China amended its Anti-Monopoly Law for the first time since it came into force in 2008, toughening antitrust penalties and spelling out anti-competitive behavior in the digital sector.

Within ASEAN, the Agreement on Electronic Commerce aims to bolster the e-commerce sector and help realize its full potential in driving economic growth in the region. To serve as a growth driver, e-commerce would have to do more than supplant domestic retail sales in individual economies. The E-Commerce Agreement, which came into effect in December 2021, will facilitate cross-border e-commerce transactions in the ASEAN region and deepen cooperation among member states to further develop the use of e-commerce. Preparatory work has focused on areas such as ICT infrastructure, legal and regulatory frameworks, electronic payment and settlement, online consumer protection, cybersecurity, and logistics to facilitate e-commerce, among others (Figure 2.41). However, ASEAN economies would need to address the barriers to implementation posed by the different stages of digital development within ASEAN to bring all the members along (Tham 2021).[42]

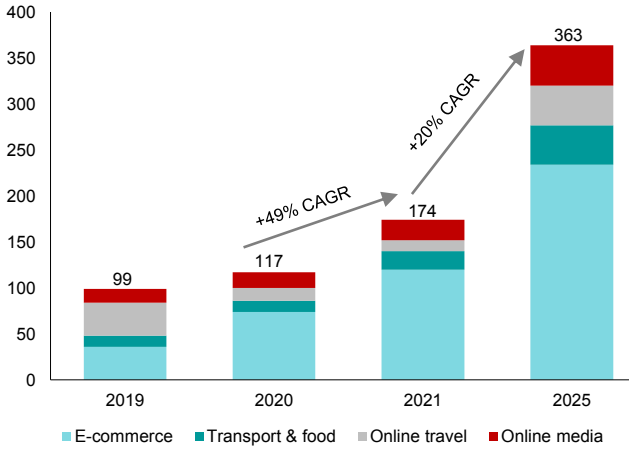
Real-time and efficient cross-border payment methods would facilitate the growth of e-commerce in the region. The region has made significant strides in payment modernization, with many economies having a domestic real-time payment infrastructure in place, such as FAST/PayNow in Singapore, PromptPay in Thailand, DuitNow in Malaysia, BI-FAST in Indonesia, and InstaPay in the Philippines. Some ASEAN economies have launched direct infrastructure linkages and cross-border QR code links. For example, over the past two years, Thailand has launched cross-border inter-operable quick-response (QR) code payment links with Cambodia, Indonesia, Malaysia, and Vietnam; Malaysia and Indonesia launched a cross-border QR payment linkage in January 2022. Singapore's PayNow and Thailand's PromptPay launched the world's first linkage of real-time payments systems in April 2021; Singapore and the Philippines signed a similar agreement in November 2021; and a phased linkage of Singapore's PayNow and Malaysia's DuitNow will be launched in the fourth quarter of 2022.[43]

41/ China's share of global *total* e-commerce sales—including business-to-business as well as business-to-consumer e-commerce—is smaller. The latest available estimates put China's share of global total e-commerce sales at 9.8 percent in 2019, behind the United States (35.9 percent) and Japan (12.8 percent) (UNCTAD 2021).

42/ The ASEAN Digital Integration Index points to a large disparity among the ASEAN economies across 6 pillars: digital trade and logistics; data protection and cyber security; digital payments and identities; digital skills and talent; innovation and entrepreneurship; and institutional and infrastructural readiness (ASEAN 2021b).

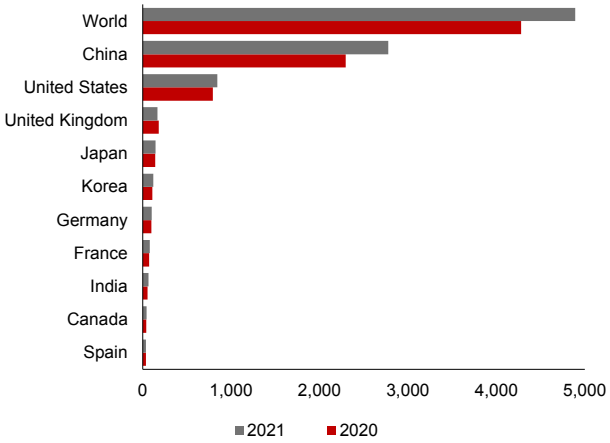
43/ Separately, some of the region's central banks are exploring the use of central bank digital currencies (CBDCs) in cross-border settlements. For example, the People's Bank of China, Hong Kong Monetary Authority, and Bank of Thailand, together with the Central Bank of the United Arab Emirates and the Bank for International Settlements Innovation Hub Hong Kong Centre are building a multiple-CBDC platform—the mBridge project—that would significantly reduce the time and costs of international trade settlement transactions. Testing of sample transactions across the four jurisdictions and 11 industries (including semiconductors, medical equipment, and apparel) has already started and the project is expected to enter the pilot stage in 2022. See Pande and Long (2022) for an overview of CBDC developments in the ASEAN+3 region.

Figure 2.37. ASEAN-6: Gross Merchandise Value of Digital Economy Sectors
(Billions of US dollars)



Source: Google, Temasek, and Bain & Company (2021).
Note: ASEAN-6 = Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam. E-commerce includes transactions on online marketplaces, online malls and resellers, and online direct-to-consumer sales. CAGR = compound annual growth rate.

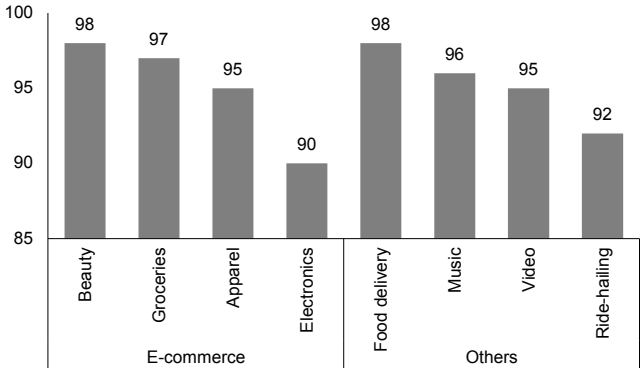
Figure 2.38. Selected Economies: Retail E-Commerce Sales, 2020–21
(Billions of US dollars)



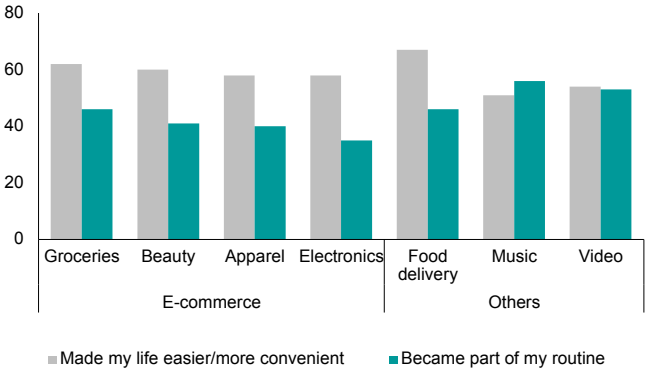
Source: eMarketer.
Note: Retail e-commerce sales include products or services ordered using the internet and exclude travel and event tickets; payments for bills, taxes, or money transfers; food services and drinking place sales; and gambling and other vice goods sales.

Figure 2.39. ASEAN-6: Use of Digital Services, 2021

New Consumers in 2020 Who Continued Using Digital Services in 2021
(Percent of consumers surveyed)

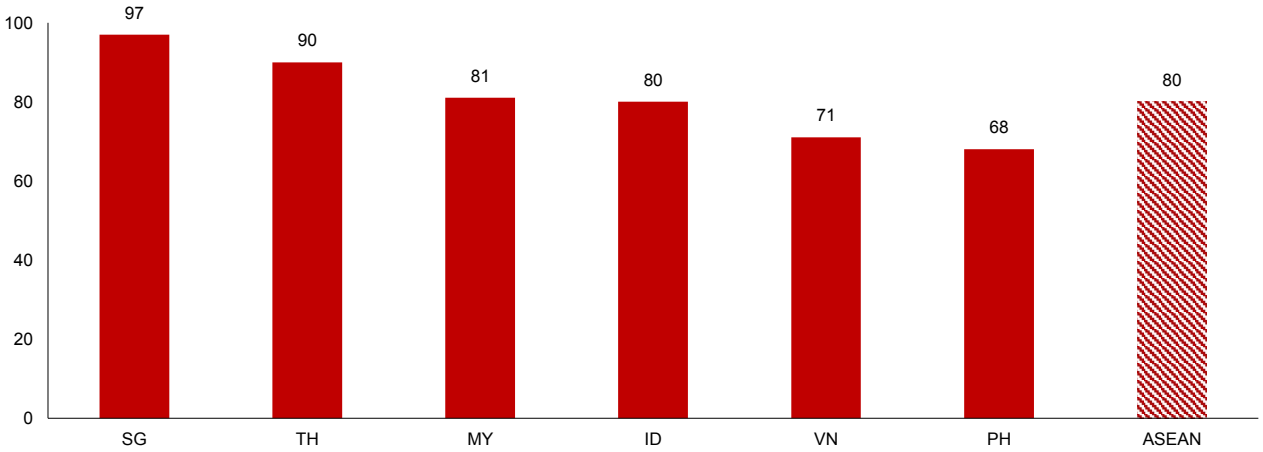


Reasons Consumers Continued Using Digital Services
(Percent of consumers surveyed)



Source: Google, Temasek, and Bain & Company (2021).
Note: ASEAN-6 = Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam.

Figure 2.40. ASEAN-6: Internet Users Who Have Made at Least One Purchase Online, 2021
(Percent of internet users)



Source: Google, Temasek, and Bain & Company (2021).
Note: ASEAN-6 = Indonesia (ID), Malaysia (MY), the Philippines (PH), Singapore (SG), Thailand (TH), and Vietnam (VN).

Figure 2.41. ASEAN Agreement on Electronic Commerce: Key Measures Related to Cross-Border E-Commerce

Online Consumer Protection and Data Privacy

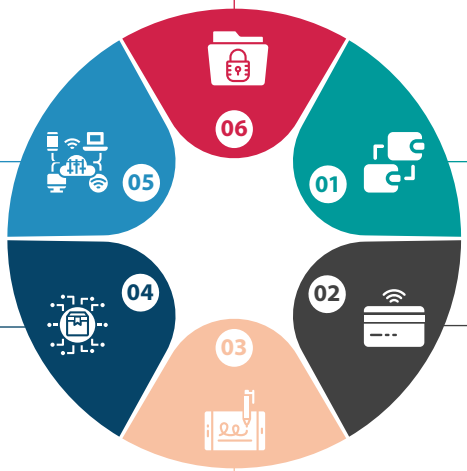
- Establish enabling legal and regulatory frameworks and adopt a harmonized approach to standards to provide e-commerce users with the security and confidence to engage on e-commerce platforms
- Adopt/maintain an appropriate legal framework and measures to protect personal information and privacy in conformity with ASEAN and other international best practices

Cross-Border Transfer of Information by Electronic Means

- Facilitate the cross-border flow of data for business purposes, subject to the appropriate safeguards
- Harmonize practices and interoperate with other cross-border data transfer mechanisms

Electronic Transactions and Paperless Trading

- Establish e-transactions laws and regulations aligned with international standards
- Expand the use of digital trade documents
- Increase technical interoperability with ASEAN partners



Trade Facilitation and E-commerce Logistics

- Collaborate with public and private e-commerce facilitators (customs, postal, logistics, express couriers) to resolve trade facilitation bottlenecks and challenges across the e-commerce fulfilment chain

Electronic Payments

- Develop secure, efficient, and interoperable e-payment systems

Electronic Signatures and Authentication

- Establish laws and regulations governing electronic signatures aligned with international standards
- Develop a user-friendly interoperable electronic authentication approach

Source: ASEAN (2021a).

Box 2.5:

China's E-Commerce Development Plans

China's government has been formulating five-year plans for the development of the e-commerce sector since the 11th Five-Year Plan period (2006–10). The plans define e-commerce services broadly to include web-based transaction services as well as business outsourcing services (e.g., web-based product design) and information technology system outsourcing services (e.g., web-based equipment rental) (Figure 2.5.1).

The first three plans guided the evolution of the e-commerce sector by facilitating the construction and upgrade of e-commerce platforms, encouraging businesses to develop standardized product information and delivery processes, creating an open business environment based on fair market competition and internet technology regulations and law, and deepening the integration of traditional industries and e-commerce to create a cohesive ecosystem of production and distribution (Jiang, Zhang, and Jin 2021). Between 2011 and 2020—during the second and third plan periods—the value of China's e-commerce transactions grew from less than USD 1 trillion to more than USD 5 trillion (Figure 2.5.2).

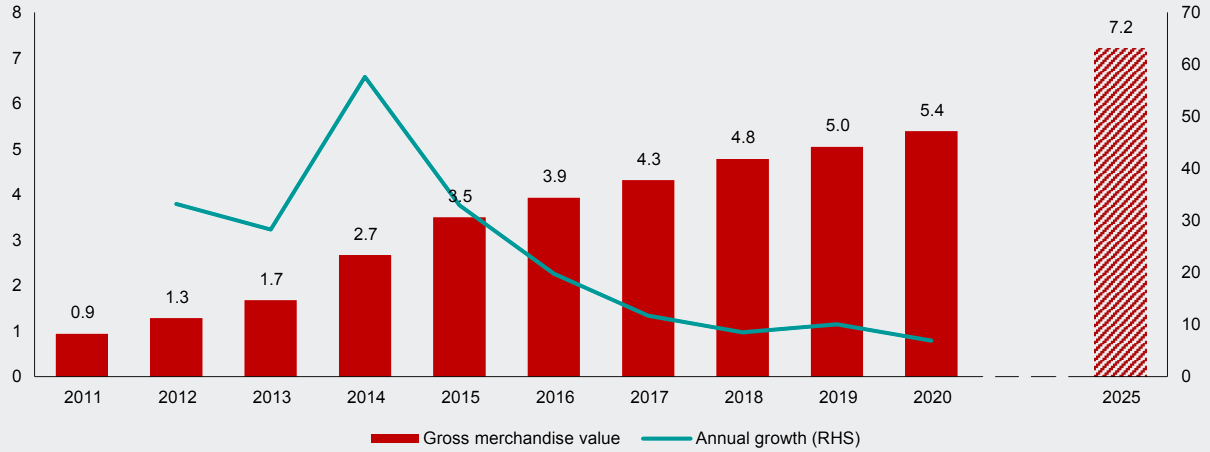
The fourth e-commerce development plan signals a shift in focus from quantity to quality in this now-mature sector. This is in line with China's overall shift to focus more intently on sustaining high-quality economic growth in the long term. The plan, covering the 14th Five-Year Plan period (2021–25), was jointly released by China's Ministry of Commerce, Office of the Central Cyberspace Affairs Commission, and National Development and Reform Commission in October 2021. It envisages a moderation in retail e-commerce growth in the coming years as the market matures, and specifies three new subindices for tracking e-commerce development: (1) the industrial e-commerce penetration rate (as an indicator of the extent of integration of e-commerce with traditional industries); (2) the transaction volume for rural e-commerce (as an indicator of rural revitalization and modernization of the rural economy); and (3) the transaction volume for cross-border e-commerce (as an indicator of "high-quality trade growth") (Zhang 2021). The plan also sets out the goal of improving e-commerce-related laws, regulations, and standard settings, including by speeding up the revision of the Anti-Monopoly Law and E-commerce Law to prevent monopolistic behavior and unfair competition in the platform economy (Fan 2021). The total transaction volume of China's e-commerce segment is expected to reach USD 7.2 trillion by 2025, and e-commerce is envisioned to be an important driver of China's economic and technological growth by 2035 (Zhang 2021).

Figure 2.5.1. China: E-Commerce Development Plans

Sources: Jiang, Zhang, and Jin (2021); and Zhang (2021).
Note: SMEs = small- and medium-sized enterprises.

The author of this box is Vanne Khut and Ling Hui Tan.

Figure 2.5.2. China: E-Commerce Transaction Value
(Trillions of US dollars; percent, year-on-year)



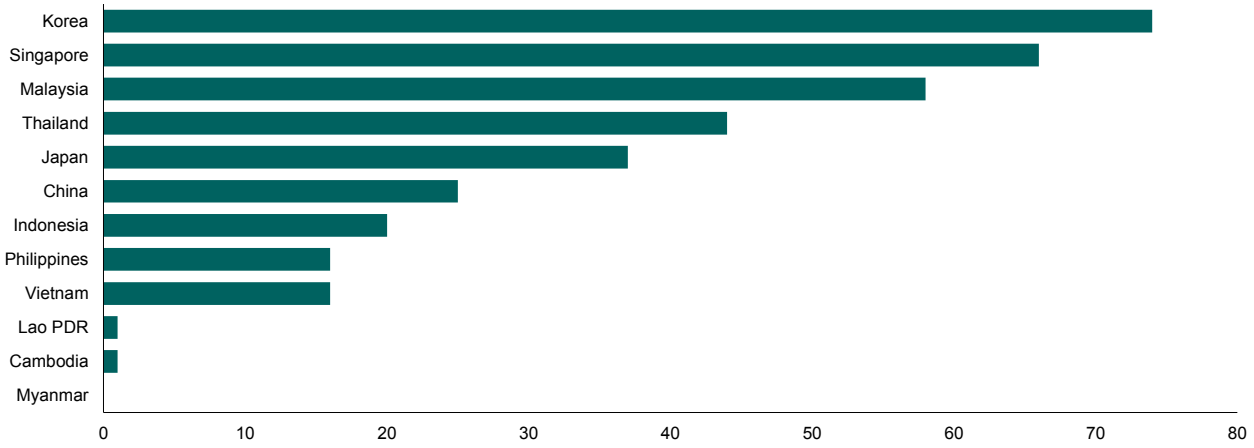
Sources: China Business Industry Research Institute; Statista; and AMRO staff calculations.
Note: E-commerce transactions include business-to-business and business-to-consumer transactions.

Digital financial services

In tandem with e-commerce, digital financial services have also flourished during the pandemic and will continue to see bright prospects in the years to come. Digital financial services include a broad range of financial services accessed and delivered through digital channels, including payments, lending, savings, remittances, and insurance. The pandemic has helped to shift consumers' preferences from traditional payment methods to cashless transactions and digital banking via mobile apps ("mobile banking"). In the ASEAN+3 region, high internet penetration and widespread digital adoption, as well as mobility restrictions during the pandemic, are contributing to a growing trend of digital banking, with Korea, Malaysia, and Singapore having the highest online banking penetration rate (Figure 2.42). Digital financial services are critical enablers of e-commerce as e-wallets and buy-now-pay-later options have allowed a new generation of underbanked consumers to shop online. Digital merchants, on their part, are very likely to continue or increase their usage of digital payments—which tend to be more convenient and safer to process than cash payments, and less costly to process than credit card payments—as well as digital lending and supply chain financing (Figure 2.43).

ASEAN+3 central banks and financial regulators are leaning into this trend by setting standards for digital banking and determining license allocations. Digital-only banks—which do not have a brick-and-mortar branch—are already in operation in China, Hong Kong, Japan, Korea, and the Philippines. Singapore granted four digital bank licenses at the end of 2020 and the new banks are expected to start operations in 2022; Malaysia issued its digital banking framework in December 2020 and expects to issue up to five licenses in the first quarter of 2022; Indonesia, Thailand, and Vietnam have issued or are working on enabling digital banking regulations.

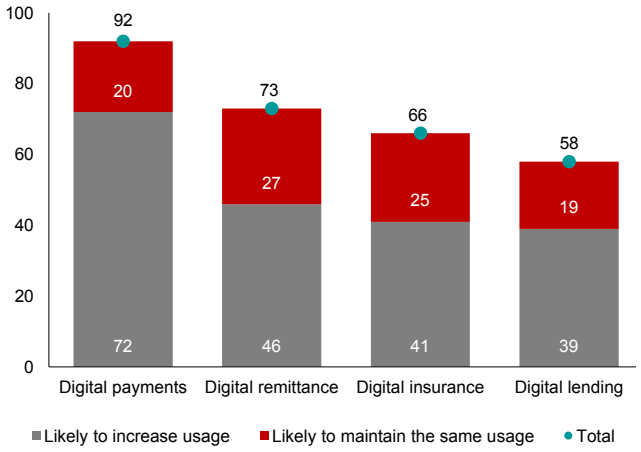
Figure 2.42. Selected ASEAN+3: Online Banking Penetration Rate, 2020
(Percent)



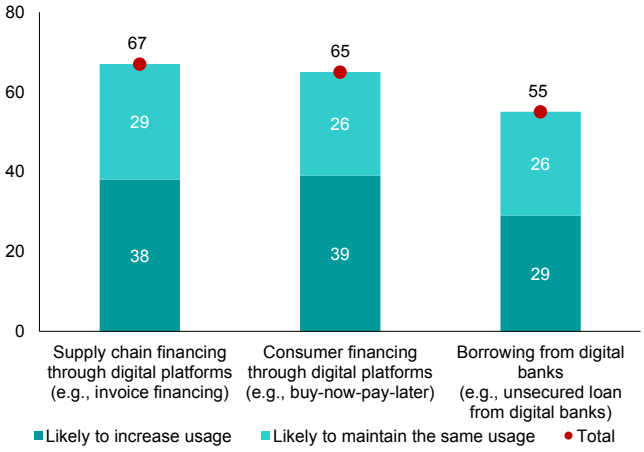
Source: Statista.
Note: Data for Brunei and Hong Kong are not available. Data refer to the share of individuals who use the internet (through mobile or computer) for online banking, as opposed to a mobile app.

Figure 2.43. ASEAN-6: Likely Usage of Digital Financial and Lending Services in the Next 1–2 Years

Digital Financial Services
(Percent of digital merchants surveyed)



Digital Lending Services
(Percent of digital merchants surveyed)



Source: Google, Temasek, and Bain & Company (2021).
Note: ASEAN-6 = Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam.

Digital health

The region's economies have harnessed technology to strengthen the public health response to the pandemic. This has resulted in strong growth in telemedicine, digital therapeutics and diagnostics, and remote patient monitoring and analytics. Digital health—using technology to help improve individuals' health and wellness—is a broad sector that can cover everything from wearable gadgets and electronic records to mobile health apps and robotic caregivers. Digital health apps have been deployed to flatten the curve of COVID-19 infections and alleviate burdens on the healthcare system. Telemedicine—the use of ICT to provide clinical healthcare remotely—has been playing a vital role in providing necessary care to patients while reducing the risk of virus transmission amid the pandemic (Table 2.4).[44]

Limited access to traditional face-to-face appointments during the pandemic has spurred quick adoption of digital healthcare tools. China's largest healthcare platform, Ping An Good Doctor, recorded a 900 percent increase in the number of new users in January 2020 compared with the previous month; at MyDoc, a telemedicine platform in Singapore, the number of daily active users rose by 60 percent in February 2020 and more than doubled again the following month (Kapur and Boulton 2020). More than a billion users were registered in key digital health platforms in the region in 2020, with prominent examples in China and key ASEAN economies (Baur, Yew, and Xin 2021).

Digital health is still at a nascent stage although there is strong potential for growth. Strong adoption, together with fast-growing funding, bodes well for innovation and growth in this sector. In China, the digital healthcare market grew to USD 28.4 billion in 2020 (a 48 percent increase from 2019), while its online pharmacies market surged to USD 35.0 billion in 2021 (a 24 percent increase from 2020) (Figure 2.44). Market analysts predict that the market for telehealth in China will overtake that in the United States in 2023 and be worth more than USD 50 billion in 2025 (Handley 2020). In the six largest ASEAN economies, venture capital investment into healthtech reached USD 1.1 billion in the first half of 2021, higher than the investment for the whole year of 2020 (Figure 2.45). In Hong Kong, Japan, and Korea where telemedicine has advanced less rapidly compared to the rest of the region, there is evidence of underlying demand and increasing calls for the governments to do more to plan and support its development in light of their aging populations and healthcare supply constraints.[45] Digital health is one of the four pillars of the Korean government's plan for the Fourth Industrial Revolution, with particular emphasis on areas such as healthcare-related big data, health information technology (IT), and AI, and the government has pledged to increase investment and drive deregulation where appropriate to spur innovation.[46]

Further initiatives are needed to unlock digital health's potential for growth after the pandemic ends. Key areas that policymakers in the region need to address include:

- Ensuring legal certainty for all stakeholders (patients, medical practitioners, medical institutions and facilities, as well as supporting institutions such as insurance companies and payment gateways) and the quality of service to users. Telemedicine frameworks are currently at different levels of development in the region and a few ASEAN economies have implemented amendments in response to the pandemic. ASEAN regulators could work toward harmonization of terminology and definitions in their legal frameworks to enable cross-border provision of telemedicine services.

- Establishing a clear legal framework for data protection governing the collection, storage, processing and sharing of patient data.

- Clarifying reimbursement rules, for example, whether virtual/remote consultations are covered by insurance or not.

- Upskilling health professionals in digital technologies.

- Enhancing the IT infrastructure and its capacity to process intensive information flows (OECD 2021b).

44/ The terms "telemedicine" and "telehealth" are often used interchangeably to refer to the provision of healthcare remotely via ICT, but according to some definitions, telemedicine refers specifically to remote clinical services, while telehealth can include non-clinical services such as education, reminders, appointments, and monitoring.

45/ In Hong Kong, a survey by Lingnan University found that more than 60 percent of the 638 respondents aged 55 years or older were willing to try teleconsultations when the relevant technology was fully developed (He 2021). In Korea, a survey by the Federation of Korean Industries found that more than 60 percent of the 1,000 respondents were favorable to introducing telemedicine (which is still prohibited under the Korean Medical Service Act) (Shim 2021). In Japan, the government decided in June 2021 that the temporary measures introduced in April 2020 to ease restrictions on telemedicine would be maintained permanently.

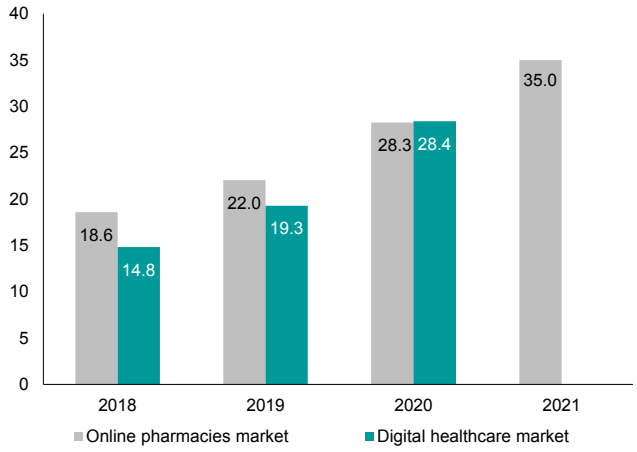
46/ According to Statista.com, Korea's AI healthcare market increased from USD 47.57 million in 2019 to USD 65.48 million in 2020 and is projected to reach USD 216.5 million in 2023.

Table 2.4. Selected ASEAN+3: Key Digital Health Platforms and Government Telemedicine Initiatives in Response to the Pandemic

	Key Digital Health Platforms	Government Initiatives on Telemedicine during the Pandemic
China	AliHealth, Ping An Good Doctor, WeDoctor, JD Health	China's National Health Commission promoted the use of internet-based medical services during the COVID-19 pandemic to minimize population movements and reduce the risk of infection.
Hong Kong	DoctorNow, DrGo	
Indonesia	Alodokter, Good Doctor Technology, Halodoc, Homecare24, KlikDokter, KlinikGo, Lekasehat, LinkSehat, mdoc, MILVIK BIMA, ProSehat, SehatQ, Trustmedis, Vascular Indonesia, YesDok	Indonesia's Ministry of Health partnered with ride-hailing firm Gojek and several telemedicine providers such as Halodoc to provide teleconsultation services and free medicine for COVID-19 patients under self-isolation, mostly in urban areas.
Japan	LINE Doctor	Japan's Ministry of Economy, Trade and Industry launched a free remote health consultation service run by Mediplat and LINE Healthcare, in response to growing public health concerns caused by the spread of COVID-19.
Korea	My HealthWay	Telemedicine is prohibited by law in Korea, but the government allowed Seoul National University Hospital to provide a telemedicine service to COVID-19 patients near the epicenter of country's virus outbreak.
Malaysia	DoctorOnCall, Speedoc, Doctor Anywhere	Malaysia's Ministry of Health and telemedicine platform DoctorOnCall established a Virtual Health Advisory portal to provide free public access to consultations with Ministry of Health family medicine specialists or medical officers and address uncertainties regarding COVID-19.
Myanmar	HOPE Telecare	
The Philippines	KonsultaMD, Medgate Philippines, HealthNow, SeeYouDoc	The Philippines' Department of Health vetted 11 third-party telemedicine service providers and launched 24/7 telemedicine hotlines to minimize face-to-face consultations during the pandemic.
Singapore	MaNaDr, MyDoc, Raffles Connect, Doctor Anywhere, Speedoc, WhiteCoat	Singapore's Ministry of Health allowed the use of government subsidies and the national medical savings scheme (MediSave) to pay for follow-ups of chronic conditions through video consultations during the COVID-19 pandemic.
Thailand	Doctor Raksa, Doctor Anywhere	Thailand's Ministry of Public Health partnered with the Thailand Tech Startup Association and private telemedicine providers such as Doctor Raksa to make telehealth services available to the general public and healthcare professionals during the COVID-19 pandemic.
Vietnam	Viettel, Doctor Anywhere, VieVie Healthcare	The government collaborated with telecommunications service company Viettel Group to develop the Viettel Telehealth platform which enables remote medical consultations, including for severe COVID-19 cases.

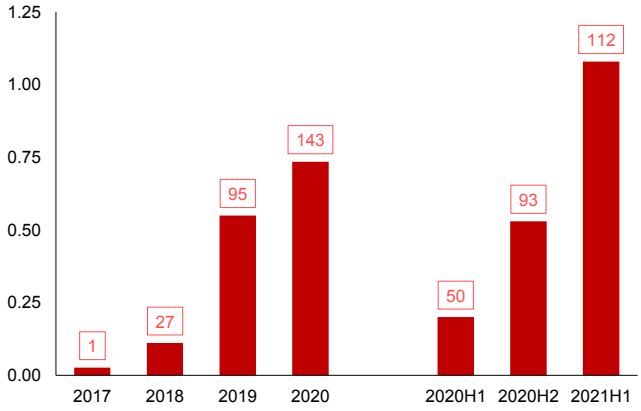
Sources: Media reports; and OECD (2021b).

Figure 2.44. China: Digital Healthcare and Online Pharmacies Markets
(Billions of US dollars)



Sources: China Business Intelligence Network; national authorities; Qianzhan Industry Research Institute; and AMRO staff calculations.
Note: Data for the digital healthcare market in 2021 are not available.

Figure 2.45. ASEAN-6: Value and Number of Total Healthtech Deals
(Billions of US dollars)



Source: Google, Temasek, and Bain & Company (2021).
Note: Numbers in boxes refer to the number of deals for the year shown.
ASEAN-6 = Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam.

Modern Services

The pandemic has also highlighted the resilience of "modern services" exports. Modern services—defined by Loungani and others (2017) as internationally tradable services that can be provided "without proximity between buyer and supplier"—include ICT, finance and insurance, and professional services.[47] Two economies in the region that have benefitted from modern services exports during the pandemic are the Philippines and Singapore (Figure 2.46).

- In the Philippines, growth in the business process outsourcing (BPO) sector during the pandemic was underpinned by technology's crucial role in business continuity during lockdowns and remote-working conditions. BPO sector revenues are projected to have grown 9 percent in 2021, from less than 2 percent the previous year (Royandoyan 2021). With BPO employees tagged as "essential" by the authorities (thus allowing for more mobility), the industry managed to take advantage of pandemic-driven client demand in segments like healthcare, banking and financial services, and other high value-added areas like software and game development (Crismundo 2021).[48]

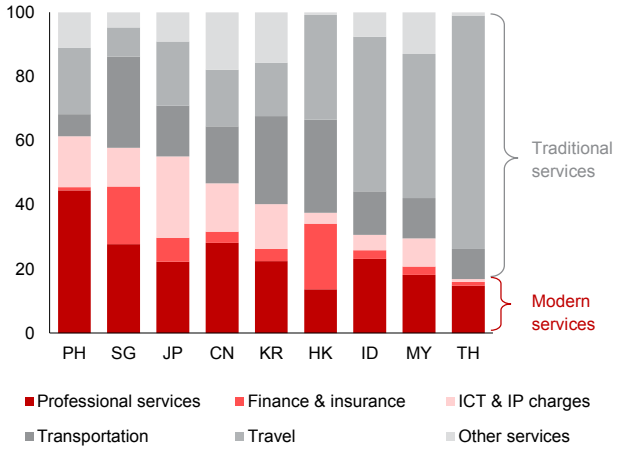
- In Singapore, an international business hub and leading financial center, exports of modern services quickly rebounded to pre-pandemic levels after a slight dip in second quarter of 2020 due to the "circuit breaker" lockdown, whereas exports of traditional services recovered much more gradually and are still far below their pre-pandemic level (Figure 2.47). This has highlighted the importance of modern services in diversifying the economy's services exports in the face of continued headwinds against traditional services, particularly travel and tourism (AMRO 2021e).

To further develop modern services as a growth driver, the region's economies would need to constantly upgrade and innovate to stay at the forefront of this increasingly competitive field. In the Philippines' case, this would entail continued investments in education and training to upgrade the skills of the BPO workforce to offer new services after existing soft-skill modern services jobs (e.g., in call centers) are lost to automation (AMRO 2018). Most of the future growth in BPO services is expected to come from the healthcare and animation and game development sectors, which require technical and creative skills (Figure 2.48); however, only about 60 percent of Filipino BPO employees currently have the capacity to deliver the complex and high-value services required by clients (Magellan 2020). In Singapore's case, this would entail capitalizing on its strengths in financial sector innovation, its skilled workforce, and dynamic technological ecosystem to strengthen its foothold in new growth areas such as green financing, consulting services on climate change management, and telemedicine (AMRO 2021e).

47/ By contrast, "traditional" services such as transport, travel, and manufacturing services still require physical presence and proximity of buyer and supplier, although Loungani and others (2017) acknowledge that the line between traditional and modern services activities is becoming more blurred.

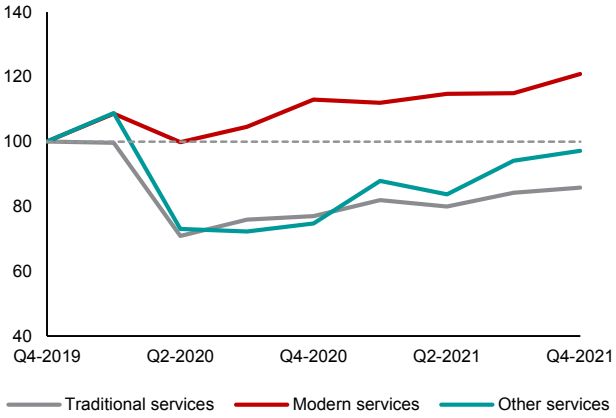
48/ The BPO sector has long been a key growth driver in the Philippines, where it accounts for about 85 percent of total services exports (similar to India) and employs more than 1 million workers. Over the past decade, the BPO sector has expanded from call centers to a broader set of ICT-enabled functions and more complex services (AMRO 2018). In particular, the country has already established itself as a leading off- or nearshore location for healthcare service delivery (Oxford Business Group 2021).

Figure 2.46. Selected ASEAN+3: Exports of Modern and Traditional Services
(Percent share of total services exports, 2016–20 average)



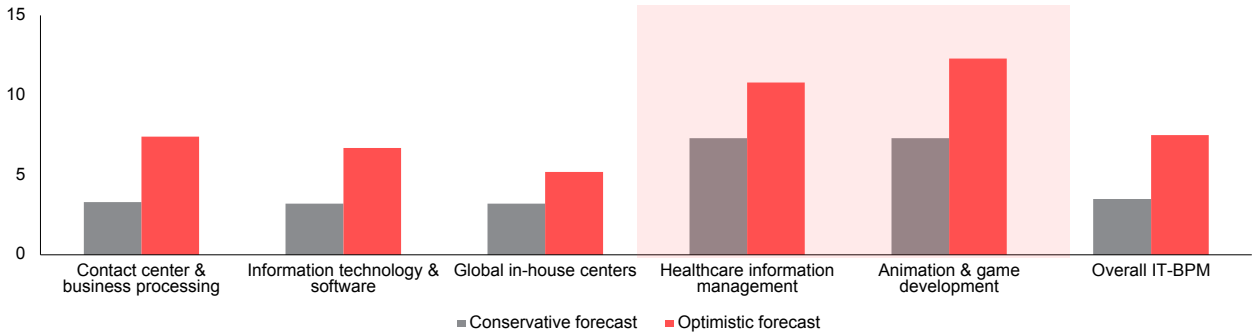
Sources: National authorities via Haver Analytics; and AMRO staff calculations.
Note: Data for the Philippines and Thailand refer to the average for 2016–19, and data for Hong Kong refer to the average for 2016–18. ICT = information and communications technology; IP = intellectual property.

Figure 2.47. Singapore: Exports of Modern and Traditional Services
(Index, Q4 2019 = 100)



Sources: Singapore Department of Statistics.
Note: Other services refer to construction services, manufacturing services on physical inputs owned by others, maintenance and repair services, government goods and services, and personal, cultural and recreational services.

Figure 2.48. The Philippines: Information Technology and Business Process Management Revenue Forecast, 2022
(Percent compound annual growth rate, 2019–22)



Source: Information Technology and Business Process Association of the Philippines.
Note: BPM = business process management; IT = information technology.

Logistics

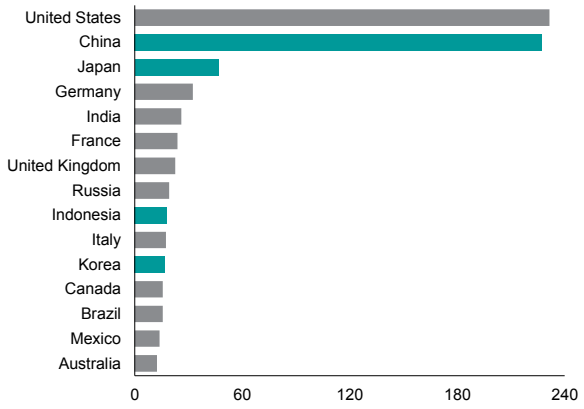
The new growth paradigm of "Factory Asia serving Shopper Asia" involves a key role for the logistics sector for just-in-time production and delivery of goods (AMRO 2020a). The Plus-3 economies are already among the key players in the global logistics industry, which includes service categories such as freight (road, rail, air, and sea); freight forwarding; warehousing; small-package delivery services; and value-added services.[49] China, Japan, and Korea are among the world's top 15 largest markets for third-party logistics, i.e., outsourced businesses that take care of companies' supply chain and logistics operations (Figure 2.49). Within ASEAN, Indonesia is the largest logistics market, owing to its huge consumer population, while Singapore is the most sophisticated, being a top international shipping center. The logistics sector accounted for about 5 percent of ASEAN GDP and employed about 17 million people in 2019 (OECD 2021c) (Figure 2.50). In terms of overall performance of the sector—along such dimensions as customs, infrastructure, international shipments, logistic competence, tracking and tracing, and timeliness—Japan ranked the highest among the ASEAN+3 on the World Bank's 2018 Logistics Performance Index (LPI) in fifth place, followed by Singapore in seventh place out of 160 economies (Figure 2.51).[50]

49/ Among the world's largest freight companies are China's COSCO Shipping, Japan's Yamato Holdings, Korea's Hyundai Merchant Marine, and Hong Kong's Cathay Pacific Airways, to name a few; among the world's largest freight forwarders are Japan's Nippon Express, China's Sinotrans, and Hong Kong's Kerry Logistics, to name a few.

50/ The World Bank's LPI assessed economies along six key dimensions of logistics performance: (1) efficiency of the clearance process (i.e., speed, simplicity, and predictability of formalities) by border control agencies, including customs; (2) quality of trade and transport related infrastructure (e.g., ports, railroads, roads, IT); (3) ease of arranging competitively priced shipments; (4) competence and quality of logistics services (e.g., transport operators, customs brokers); (5) ability to track and trace consignments; and (6) timeliness of shipments in reaching their destination within the scheduled or expected delivery time. The assessments were based on a worldwide survey of operators on the ground (global freight forwarders and express carriers), providing feedback on the logistics "friendliness" of the countries in which they operated and those with which they traded.

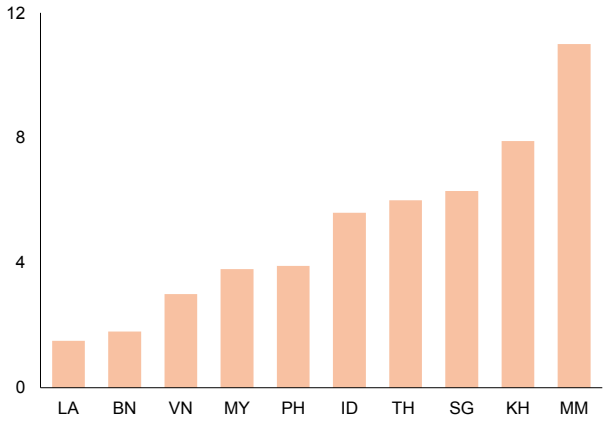
The COVID-19 pandemic has directly affected the logistics sector in both positive and negative ways. On the one hand, the pandemic has created a boom in e-commerce; on the other hand, lockdowns and supply chain disruptions have imposed crippling operational constraints. Up-to-date data from the ASEAN+3 region are not available for an assessment of the pandemic's net impact on this sector, although estimates from the OECD suggest that the overall impact on ASEAN's logistics sector has been negative—ASEAN's total freight and logistics market revenues were estimated to have dropped by 12 percent in 2020 from approximately USD 358 billion in 2019, as a consequence of mobility restrictions and other COVID-19 containment measures across the region (OECD 2021c). Different segments have been affected differently, however. The freight transport and warehousing segments were estimated to have had the largest revenue drop in 2020 compared to the previous year, reflecting significant declines in air and maritime freight revenues despite record profits for container shipping in 2020 (Figure 2.52) (OECD 2021c). On the other hand, courier, express, and parcel-delivery services in ASEAN were seen to have grown by about 20 percent year-on-year in 2020, due to strong online demand for grocery items, home furnishings and medical supplies when lockdowns were in place (OECD 2021c).

Figure 2.49. World: Top 15 Economies in Third-Party Logistics Market Size, 2020
(Billions of US dollars)



Source: Armstrong & Associates, Inc.

Figure 2.50. ASEAN: Logistics Sector Contribution to GDP, 2019
(Percent of GDP)



Sources: National authorities; and OECD (2021).
Note: BN = Brunei; ID = Indonesia; KH = Cambodia; LA = Lao PDR; MM = Myanmar; MY = Malaysia; PH = the Philippines; SG = Singapore; TH = Thailand; and VN = Vietnam. Data for Cambodia and Lao PDR refer to 2018.

Figure 2.51. ASEAN+3: Logistics Performance Index Scores, 2018
(1 = lowest; 5 = highest)

Economy	LPI rank	Overall LPI score	Customs	Infrastructure	International shipments	Logistics competence	Tracking & tracing	Timeliness
Japan	5	4.03	3.99	4.25	3.59	4.09	4.05	4.25
Singapore	7	4.00	3.89	4.06	3.58	4.10	4.08	4.32
Hong Kong	12	3.92	3.81	3.97	3.77	3.93	3.92	4.14
Korea	25	3.61	3.40	3.73	3.33	3.59	3.75	3.92
China	26	3.61	3.29	3.75	3.54	3.59	3.65	3.84
Thailand	32	3.41	3.14	3.14	3.46	3.41	3.47	3.81
Vietnam	39	3.27	2.95	3.01	3.16	3.40	3.45	3.67
Malaysia	41	3.22	2.90	3.15	3.35	3.30	3.15	3.46
Indonesia	46	3.15	2.67	2.89	3.23	3.10	3.30	3.67
Philippines	60	2.90	2.53	2.73	3.29	2.78	3.06	2.98
Brunei	80	2.71	2.62	2.46	2.51	2.71	2.75	3.17
Lao PDR	82	2.70	2.61	2.44	2.72	2.65	2.91	2.84
Cambodia	98	2.58	2.37	2.14	2.79	2.41	2.52	3.16
Myanmar	137	2.30	2.17	1.99	2.20	2.28	2.20	2.91

Source: World Bank.
Note: The 2018 Logistics Performance Index (LPI) was assessed for 160 economies. The deeper the shade of green, the higher the index score (i.e., closer to 5); the deeper the shade of red, the lower the score (i.e., closer to 1).

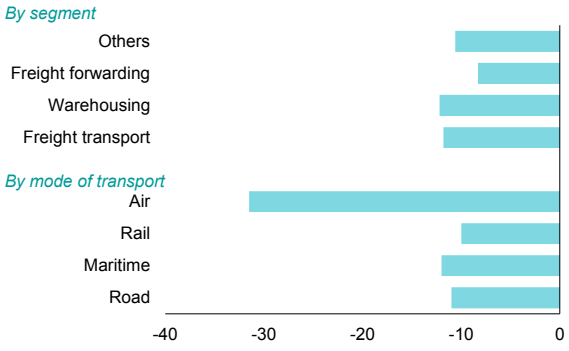
The outlook for the ASEAN+3 logistics sector is bright, as evidenced by its increasingly dynamic market. Start-ups are expanding product offerings and increasing industry competition, especially on last-mile delivery and freight platforms. While the number of new start-ups in the transport and logistics sector fell in 2020 and 2021, the funding behind these tech start-ups increased to a four-year high, on the back of keen interest from investors in tech industries (Figure 2.53). At the same time, larger players have been actively expanding their network in the region to position themselves for the region's anticipated pick-up in trade and economic activity (Chu and others 2021).

E-commerce activity will underpin the medium-term growth of the ASEAN+3 logistics market. Retail e-commerce sales in the Asia-Pacific region are forecast to grow more than 10 percent in compound annual terms in the next three years, led primarily by China (Forrester 2020).[51] This will put increasing demands on last-mile services (i.e., the stage of distribution closest to buyers) as consumers are increasingly willing to pay extra charges for faster delivery (Colliers 2021, Forrester 2020) (Figure 2.54).[52] Additionally, the region's huge consumer base for temperature-sensitive healthcare and food products—as evidenced during the pandemic—bodes well for the cold-chain segment and well-located warehouse assets (IMarc 2021).[53]

Swift adoption of technology will help the ASEAN+3's logistics sector take advantage of rapidly increasing demand and address existing challenges. Logistics operators with strong digital capabilities tailored to e-commerce demands will have a strong advantage in the post-pandemic world. This would entail investments in technology, such as the Internet of Things, blockchain, cloud computing, and data analytics (Figure 2.55). In the longer term, more widespread utilization of robots and autonomous vehicles would reduce risks from labor shortages—a vulnerability highlighted during the pandemic. In the ASEAN region, where geography and poor connectivity has hampered the development of efficient delivery systems, technology-based solutions offer an opportunity to bridge the distance to the consumer and refine legacy processes to adapt to post-pandemic consumer preferences. For example, the use of AI, blockchain, and sensors to provide route optimization and smart shipping could help address some of the challenges faced by logistics operators such as high fuel costs, delayed deliveries, and order-fulfillment issues.

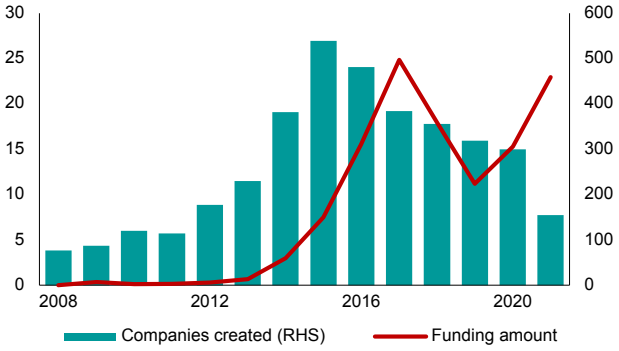
Enhancing infrastructure quality is more crucial than ever, post-pandemic. Efficient logistics performance is crucial to improving efficiency, and ultimately, profit margins. In general, the bulk of logistics costs comes from transportation (58 percent), followed by inventory carrying (23 percent) and warehousing (11 percent) (Rodrigue 2020). Infrastructure quality is uneven in the ASEAN+3, with only the Plus-3 and Singapore scoring highly in the World Bank's LPI (Figure 2.51). The quality of roads and port infrastructure across ASEAN has improved over the last decade but rail has received less attention—until the launch of the newly completed China–Laos railway in January 2022, together with ongoing projects like Indonesia's Jakarta–Bandung High-Speed Railway and Malaysia's East Coast Rail Link.[54] Improving roads and ports, as well as warehouse supply and capabilities would lower freight costs and attract more manufacturers (and logistics operators) to the ASEAN region to serve its growing e-commerce market, especially as China's production costs have increased over the years (AMRO 2020a).

Figure 2.52. ASEAN: Logistics Revenues, by Segment and Mode of Transport, 2020
(Percent, year-over-year)



Source: OECD (2021c).
Note: Data refer to forecast growth in 2020.

Figure 2.53. Selected ASEAN+3: New Start-ups in Transportation and Logistics
(Billions of US dollars; number of companies)



Source: Tracxn.
Note: Data include Cambodia, China, Indonesia, Japan, the Philippines, Singapore, and Thailand.

51/ Refers to Australia, China, India, Indonesia, Japan, Korea, Malaysia, the Philippines, Singapore, Thailand, and Vietnam (Forrester 2020).

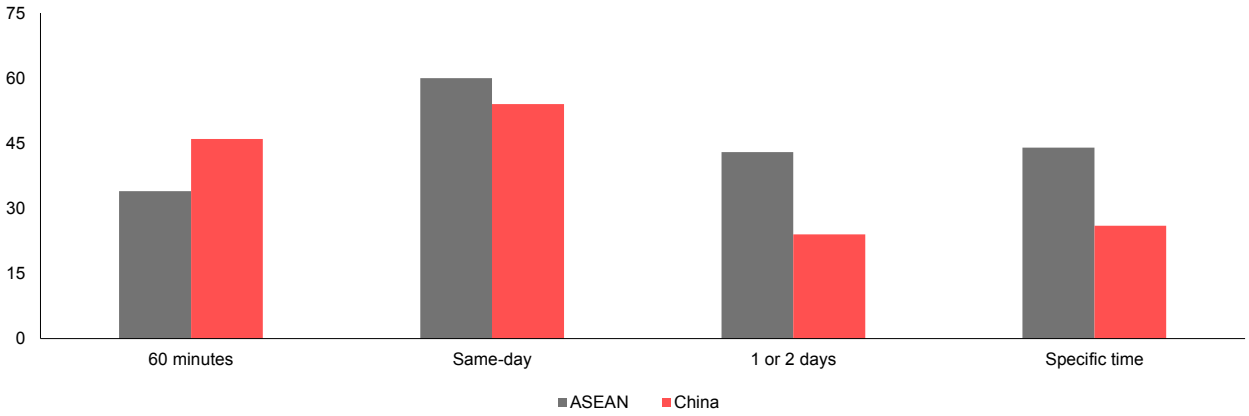
52/ For example, the Indonesian Courier Association estimates that the market share for same-day delivery will grow from 8 percent (300,000 parcels per day) in 2018 to 30 percent (4.5 million parcels per day) by 2023 (Pitoyo 2020).

53/ This is particularly true in the Plus-3 economies, where commercial real estate demand is increasingly shifting toward "new economy" occupiers, based largely around e-commerce growth and technology-enabled supply chains (JLL 2021).

54/ In January 2022, DHL Global Forwarding became the first international forwarder to launch a two-way China–Laos rail service, facilitating trade between China and ASEAN amid heavy road congestion on the China–Vietnam border due to local COVID-19-related situations.

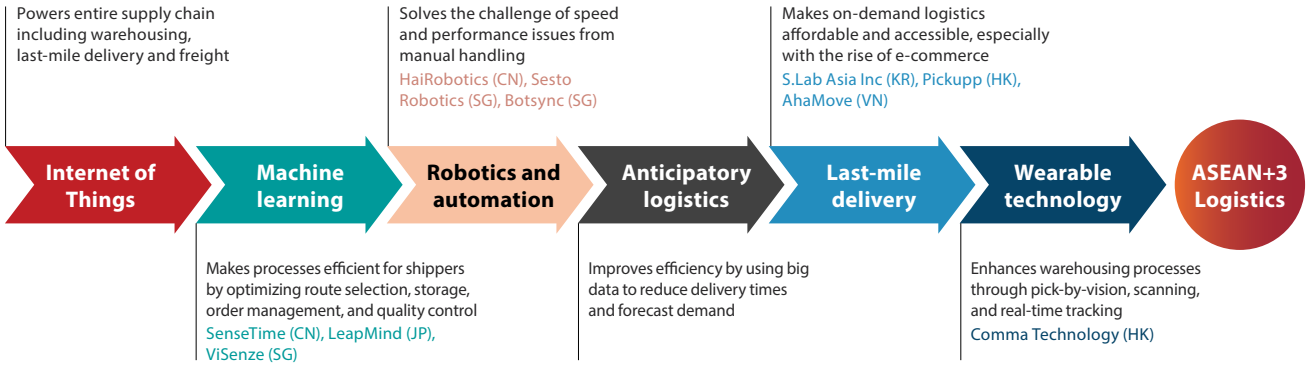
Reconfiguration of supply chains—some of which began even before the pandemic—will also impact the role of the logistics sector as a future driver of growth in the ASEAN+3. The pandemic has exposed the vulnerability of long and complex value chains to production disruptions, especially in the ASEAN+3 (AMRO 2021b).[55] To improve supply chain resilience, some of these production nodes may be diversified or linkages shortened through strategies such as reshoring or nearshoring of strategic products to reduce dependence on a single source of production (AMRO 2021b). For example, the trend of locating additional warehousing capacity or dry ports near demand centers to shrink the distance to market could be an upside for the ASEAN+3 region, given its potential for future consumption. On the downside, the shortening of supply chains by US and European multinationals may benefit manufacturers in other low-cost regions, such as in Africa or Latin America, rather than those in the ASEAN+3.

Figure 2.54. ASEAN and China: Willingness to Pay for Faster Delivery Speeds
(Percent of respondents)



Source: PwC (2016).

Figure 2.55. Logistics and Technology



Source: AMRO staff, adapted from StartUs Insights.
Note: CN = China; HK = Hong Kong; JP = Japan; KR = Korea; SG = Singapore; and VN = Vietnam.

IV. What Will the Pandemic Do to the Manufacturing-for-Export Growth Strategy?

Global value chains (GVCs) have played a critical role in driving the ASEAN+3's industrialization and economic development. Since the 1960–70s, wave after wave of the region's economies have pursued a manufacturing-for-export strategy of development by entering the production network and moving up the value chain. GVCs are now an integral part of ASEAN+3 economies; in 2019, the region's GVC participation rate was about 40–50 percent of total exports. However, regional value chain participation is much lower—about 12–13 percent of total exports in 2019—suggesting

[55] For example, during 2020–21, tech firms in Malaysia and garment manufacturers in Cambodia and Vietnam experienced disruptions in the supply of components and raw materials, respectively, from China. Japan's Toyota Motor Corporation had to suspend operations at 2 domestic plants due to lingering constraints in supply of auto parts from Southeast Asia. And McDonald's in Japan had to limit the sale of french fries for about a month due to delays in shipments from North America.

that the ASEAN+3 economies are more tightly embedded in global than in regional trade (AMRO 2021b).

Even before the COVID-19 pandemic, it was recognized that the strategy of manufacturing for exports would be facing increasing challenges as a growth driver, particularly for developing economies in the region. Technological advances—automation, AI, and 3D printing, to name a few—and compressed production processes for more customized goods have been increasing the capital intensity of most manufacturing subsectors and shortening supply chains, making it more difficult for emerging market and developing ASEAN economies to join, and become more competitive within, GVCs. Added to that, political and popular pressure has been rising in economies such as the United States to reshore jobs and bring GVCs back home. The combined impact of these factors would appear to favor a (re-)agglomeration of production in advanced economies.

The pandemic has provided new impetus to the debate. By accelerating the adoption of automation and AI—including in manufacturing plants, to reduce workplace density and cope with surges in demand—COVID-19 has further narrowed the window for developing ASEAN economies to shift from labor-intensive and low-technology production to more capital-intensive and high-technology production. Of greater concern, widespread and severe supply chain disruptions brought about by the pandemic—including of critical products such as semiconductors—have highlighted the drawbacks of long and complex value chains and renewed interest in, and calls for, reshoring, nearshoring, and regionalizing supply and production networks.

Will the pandemic reshape GVCs and undermine the manufacturing-for-export growth strategy for the region? Last year's thematic chapter looked at this very issue, albeit more from the perspective of technological changes and trade tensions between the United States and China. The main conclusion was that the evidence, so far, did not point to wholesale reshoring, nearshoring, or transfer of manufacturing capacity out of China or the rest of the ASEAN+3, although more geographical movements could be expected in the future as multinational enterprises (MNEs) sought to strengthen the resilience of their global supply chains (AMRO 2021b). This section revisits some of the same questions against the backdrop of supply chain developments over the past year.

The numerous supply chain disruptions that have dogged global trade during the pandemic have encouraged advanced-economy manufacturers to reconsider their geographical footprint—and existing GVC paradigms—to improve resilience. Post-pandemic, four alternative trajectories of international production are likely: diversification, replication, reshoring (also called "onshoring" or "backshoring"), and regionalization (or "nearshoring") (UNCTAD 2021). The latter two options entail relocation of production sites, leading to shorter GVCs and a considerable transformation of future supply chains. The ultimate trajectory chosen by key GVC players will depend on factors such as cost efficiencies arising from technology and automation; conduciveness of the policy environment (e.g., subsidies for reshoring or closer regional economic integration); and supply chain resilience in the face of major shocks, such as the COVID-19 pandemic.

Available data in 2021 suggest that reshoring and nearshoring intentions, if not activities, have gained some traction globally (Figure 2.56). Still, fully shifting production capacity from one location to another is neither easy nor straightforward. Each industry faces different challenges to their supply chain, and there is further differentiation by sub-sector and product. Firms in sectors that need to be nimble and quick to respond to changing demands—such as healthcare and garments and textiles—may find ways to nearshore or reshore more quickly, especially if they have existing factories or suppliers in different parts of the world. But for asset-intensive industries that require large, expensive production sites, such as chemicals and metals, investment in new capacity would take years to complete. In addition, some companies have struggled to find suitable suppliers to support their localization or nearshoring plans (Alicke, Barriball, and Trautwein 2021).

The pandemic's impact on supply chains has triggered new initiatives by governments in major advanced economies to reshore production of critical items. Government policies and incentives to bring GVCs back home are not new.[56] However, a recent United Nations Conference on Trade and Development (UNCTAD) study noted that reshoring initiatives announced during the pandemic differed from pre-pandemic initiatives in their speed of development (months rather than years) and their industry-specificity (health and technology rather than manufacturing in general) (Elia and others 2021). For instance, in September 2020, the French government presented an economic program to boost the manufacturing sector and encourage reshoring, with incentives targeted at specific value chains such as pharmaceuticals, aerospace, food, automotive, electronics, critical raw materials, and industrial applications of 5G technology) (Elia and others 2021). In June 2021, the US Biden administration announced a series of actions to address vulnerabilities in critical product supply chains (medicines, advanced batteries, critical minerals, and semiconductors) and build industrial bases (The White House 2021).

56/ In the United States, the Obama administration's (2012) "Blueprint for an America Built to Last" included reshoring incentives such as lower taxes and energy costs and the creation of supporting "manufacturing universities" and "manufacturing hubs," while the Trump administration (2018) utilized trade protection in the form of higher tariffs on imports from China to bring manufacturing jobs back to the United States. In Europe, France (2013) provided financial aid and the United Kingdom (2014) provided support for upstream activities for manufactures (Elia and others 2021).

Figure 2.56. Reshoring and Nearshoring Trends in Manufacturing, 2020-21

Global

- A global survey of 71 senior supply chain executives by McKinsey and Company in May 2020 found that more than 75 percent intended to make physical changes to their supply-chain footprints.
- A follow-up survey in the second quarter of 2021 with a similarly diverse group of supply-chain leaders revealed that actual implementation of supply-chain changes focused more on inventory management and dual sourcing of raw materials than on implementing nearshoring or regionalization strategies. But almost 90 percent of respondents to the second survey intended to pursue some degree of regionalization during the next 3 years, and 100 percent of respondents from both the healthcare and the engineering, construction, and infrastructure sectors said the approach was relevant to their sector (Alicke, Barriball, and Trautwein 2021).

United States

- A survey of 120 US manufacturing executives by Kearney in March 2021 found that 52 percent of respondents had increased domestic manufacturing or sourcing of products when COVID-19 disrupted global supply chains. About 47 percent intended to diversify their supply chain over the next 3 years to reduce dependence on a single country source or manufacturing location, particularly China (Van den Bossche and others 2021).
- The Reshoring Initiative, an organization dedicated to the promotion of reshoring by US companies, projected that 1,334 companies would reshore operations in 2021, bringing back 138,110 jobs—a 25 percent increase from the number of jobs reshored in 2020—driven by proximity to market and government incentives. Most of the jobs being reshored were high-tech and medium-high tech positions in the transportation equipment, chemicals, computer and electronics, and medical equipment and supplies industries (The Reshoring Initiative 2021).

Europe

- Some Europe-based fashion brands, such as Germany's Hugo Boss and Italy's Benetton, have announced that they would shift part of their production operations out of Southeast Asia and closer to their base to shorten lead times and gain better control of their supply chains (Storbeck 2021; Anzolin and Aloisi 2021). Benetton said it would halve Asian-based manufacturing by the end of 2022 (Anzolin and Aloisi 2021).

Plus-3

- Some of Japan's top apparel makers have announced that they would shift more production capacity onshore over the next 3–5 years, in part because of rising labor costs in overseas hubs like China and Vietnam and shipment troubles caused by the pandemic (Hanada 2021).
- In a survey of more than 500 Japanese manufacturing companies conducted by the Japan Bank for International Cooperation in the second half of 2021, the majority of respondents in the general machinery, and electrical and electronics industries—but less than half of respondents in the automotive sector—indicated that "diversification of production sites and suppliers" was the most important way to improve the resilience of supply chains against external shocks. This reflects the complexity of the value chain of the automotive industry, which considered "preparing risk scenarios and business continuity plans" more important for improving supply chain resilience (JBIC 2021).
- The 2021 business confidence survey by the EU Chamber of Commerce in China found that a quarter of respondents from the manufacturing sector intended to further onshore at least some of their supply chains into China, with 4 percent attempting to fully onshore. One in 10 were diversifying future investment into other markets, but would leave their operations in China untouched. Of respondents engaged in production, only 4 percent were planning to shift some current investment out of China, and only 1 percent intended to fully divest. In other words, five times as many companies were onshoring as there were offshoring (European Union Chamber of Commerce in China 2021).
- According to Korea's Ministry of Trade, Industry, and Energy, the number of Korean companies that reshored hit an all-time high in 2021. A total of 26 firms in industries including automobiles, electric and electronics, and steel, relocated their factories from China (18), Vietnam (4), and the United States (2). The companies cited unfavorable business circumstances in foreign economies and the growth in domestic demand (Yonhap 2022).

Source: AMRO staff compilation.

In the region, Japan and Korea have launched similar initiatives to secure critical supply chains. After Japan experienced an acute shortage of medical equipment when the COVID-19 pandemic broke out, in April 2020, the government announced incentives for Japanese companies (particularly in health-related industries) to reshore or relocate to other Asian economies manufacturing activities earlier offshored to China (Sim 2020). In June 2020, as part of its economic recovery plan, Korea's government offered incentives for high-tech companies to reshore, and for reshoring companies investing in production process automation (Song 2020). Such moves received an added impetus after the global semiconductor shortage in 2021 forced production cuts across such industries as automobiles, medical devices, and home appliances. Korea has established a center in its foreign ministry dedicated to responding to "global shifts in supply chains" (Hosokawa 2021).[57] With semiconductors increasingly critical for a functioning society, the Japanese government is looking to play a more active role in securing the country's chip supply. In December 2021, it passed legislation to provide subsidies for advanced chipmakers building new production hubs in the country, starting with a multibillion-dollar package for Taiwan Semiconductor Manufacturing Company (TSMC).[58] Japan's next economic stimulus package will feature a subsidy program to assist companies developing chips, large-capacity batteries, and other key materials.

Notwithstanding the increasing interest in reshoring to protect critical supply chains, the likelihood that a significant share of GVCs will be reconfigured away from the ASEAN+3 is low. While some US- and Europe-based firms have shifted some production back from the ASEAN+3 region to, or near their home base, others are moving in the opposite direction. Indeed, many of the key factors behind global offshoring activity remain in place in the region—for example, low labor costs, attractive FDI incentives, and business-friendly regulations.[59] The deep and well-established GVCs in the ASEAN+3 region, especially in China, that were built and fortified over decades would be very costly, complex, and time-consuming to fully reconfigure (AMRO 2021b). China and the rest of the ASEAN+3 have built strong capabilities in high-tech manufacturing, for example, that are yet to be matched by competitors in other parts of the world. Furthermore, reshoring does not completely foreclose supply chain risks; resilience is still likely to come from more, rather than less, diversification involving more suppliers in more economies to mitigate disruptions when individual economies stop production for any reason (Strange 2020).[60] Last but not least, the importance of proximity to large consumer markets would also militate against relocating production away from the region's large and rapidly growing middle class.

The Regional Comprehensive Economic Partnership (RCEP) holds promise for promoting—and keeping—supply chains in the region. Nearshoring within the ASEAN region is an attractive option for MNEs located in the Plus-3 as a way to build supply chain resilience. China, Indonesia, Malaysia, the Philippines, Thailand, and Vietnam are all among the top 10 most "promising" destinations for Japanese manufacturing business development in the medium term (JBIC 2021). Rising wages and high-tech skills in China suggest that multinationals would benefit from leveraging its high-end manufacturing base while moving lower-end products elsewhere in the region. This is where the RCEP comes in (Box 2.6). By harmonizing rules-of-origin provisions and establishing a single set of regional content rules, the RCEP effectively creates a single market for intermediate goods that will promote the creation of supply chains across the region: low-cost manufacturers in ASEAN will be able to use high value added inputs such as semiconductor items and chemicals originating from Japan or Korea, and their outputs can be further processed by more comprehensive manufacturing in China, all while taking advantage of low preferential tariff rates. Thus, MNEs will be able to use the comparative advantages of different production bases in the ASEAN+3 to meet demand in the region and beyond.

By adapting to the demand for greater resilience and changing cost structure across the region, manufacturing-for-export will remain an important component of the region's development strategy. Given the diverse levels of development and factor endowments in the ASEAN+3 region, many manufacturing industries will continue to provide feasible entry points to GVCs. However, reaping the benefits of higher productivity and job creation will require economies to capitalize on post-pandemic trends, for example, by taking into account the increasing role of services to climb up the value chain ("servicification"), technological leapfrogging opportunities from increased digitalization, as well as the growing emphasis on green growth and sustainability. Plus-3 economies, on their part, have a crucial role to play in strengthening the regional value chain through technology transfer, technical assistance, and promoting multilateral cooperation to achieve supply chain security.

57/ Economic security became a top priority for Korea after it suffered a urea shortage in November 2021 when China began restricting urea solution exports due to a shortage of coal, from which the material is extracted. The shortage threatened to shut down Korea's trucking sector, which relies heavily on diesel-powered vehicles (urea solution is used to clean exhaust from diesel vehicles).

58/ In October 2021, TSMC announced plans to build an advanced chipmaking factory in Japan in 2022, with multiyear financial support from the Japanese government. The plant, which will start operations in 2024, will be jointly run with Sony Group Corporation, and produce semiconductors used in automobiles among other products.

59/ For example, an analysis by the Milken Institute suggests that when it comes to attracting foreign investors, emerging Southeast Asia compares well with other emerging markets and developing economies, particularly in terms of economic fundamentals and integration with the global economy (Contreras, Bendix, and Smith 2022).

60/ Japanese automakers, for example, are moving from a "just-in-time" to a "just-in-case" strategy, including stockpiling inventory and increasing end-to-end visibility of their supply chain (Sugiura and Tanaka 2021).

Box 2.6:

Deepening Economic Integration under the RCEP

Encompassing the 13 ASEAN+3 nations plus Australia and New Zealand, the Regional Comprehensive Economic Partnership (RCEP) is the world's largest trade bloc and a strong statement of the region's commitment to openness. The agreement took effect on January 1, 2022 among 10 members—Australia, Brunei, Cambodia, China, Japan, Lao PDR, New Zealand, Singapore, Thailand, and Vietnam—with Korea following in February and Malaysia in March (Indonesia, Myanmar, and the Philippines have not yet ratified the agreement).

The RCEP Agreement updates the coverage of ASEAN's existing bilateral free trade agreements (FTAs) with China, Korea, Japan, and Australia and New Zealand (Figure 2.6.1, Table 2.6.1). It comprises 20 chapters and includes many areas not previously covered in the ASEAN+1 FTAs. The following are some areas of note.

Tariff reductions. RCEP members are due to eliminate tariffs on more than 90 percent of goods traded within the bloc over a 20-year period. This will particularly benefit the Plus-3 economies, which are now connected by a free trade agreement for the first time; the direct impact of the tariff reductions on ASEAN economies will be more limited, given their existing FTAs with the other RCEP signatories. At the same time, RCEP members have opted out of commitments in certain sensitive and strategic sectors such as agriculture and transport equipment, including motor vehicles.

Consolidated rulebook. One key advantage of the RCEP is that it provides a single consolidated rulebook that applies to trade among all 15 members, whereas under the ASEAN+1 FTAs, businesses have to navigate different requirements for each FTA. The single set of rules provides greater consistency in trade and customs practices and should lead to greater efficiency and ease of doing business in the region.

More accommodating rules of origin. RCEP members adopt one single set of rules of origin with regional value content (RVC) of no less than 40 percent (Table 2.6.2). The cumulation rule allows goods originating from one member state that are used as inputs in the production of a new product in a second member state to be considered as originating in the second member state. This gives firms in the region more flexibility to source raw materials and intermediate inputs from RCEP members while benefiting from lower tariff rates.

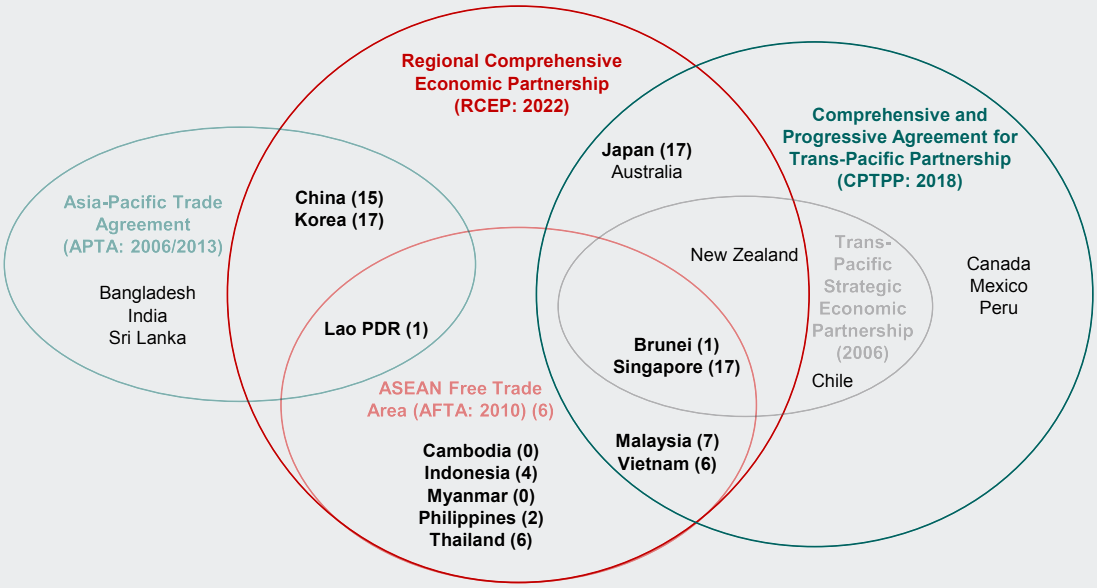
Services trade liberalization. The RCEP Agreement builds on the existing ASEAN+1 FTAs to provide additional liberalization of some services sectors including financial services, telecommunication services, and professional services, as well as those related to supply chains such as distribution and freight transport services (Figure 2.6.2).

Labor mobility. The RCEP Agreement allows temporary cross-border movement of individuals to deliver services and/or conduct business activities. In a few cases, commitments in this area go beyond existing commitments under ASEAN's Framework Agreement on Services (Malaysia) and ASEAN+1 FTAs (China, Japan).

E-commerce and digital trade. The RCEP Agreement includes provisions that are primarily aimed at increasing the level of trust and confidence of e-commerce users, such as: acknowledging the validity of electronic signatures; enacting regulations on the protection of personal data and protection of e-commerce users from fraud and misleading practices; maintaining the current practice of not imposing customs duties for electronic transmissions between member states; prohibiting the requirement to use or locate a computing facility in a certain territory to conduct business in that territory; and prohibiting the prevention of cross-border transfer of information (unless otherwise provided to achieve public policy objectives and protect security interests). The RCEP has more provisions relating to e-commerce than earlier ASEAN agreements, but fewer compared to the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) (Figure 2.6.3).

The authors of this box are Marthe Hinojales and Ling Hui Tan.

Figure 2.6.1. ASEAN+3: Regional Trade Agreements



Source: World Trade Organization.
Note: Number in parentheses indicates number of bilateral free trade agreements. Year indicates year of entry into force—for APTA (previously known as the Bangkok Agreement), the first year is for goods (under the amended agreement), and the second year is for services. Not shown in the figure are the Global System of Trade Preferences among Developing Countries (1989), under which Korea, Indonesia, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam are members, together with 34 other economies around the world; and the Protocol on Trade Negotiations (1973), under which Korea and the Philippines are members, together with 13 other economies around the world.

Table 2.6.1. ASEAN+3: Bilateral Trade Agreements

Signatory	Agreement
ASEAN	ASEAN-Australia-New Zealand; **China-ASEAN**; **ASEAN-Hong Kong**; ASEAN-India; **ASEAN-Japan**; **ASEAN-Korea**
Brunei	**Brunei-Japan**
Indonesia	Chile-Indonesia; Indonesia-Australia; Indonesia-Pakistan; **Japan-Indonesia**
Lao PDR	**Lao PDR-Thailand**
Malaysia	Chile-Malaysia; India-Malaysia; **Japan-Malaysia**; Malaysia-Australia; New Zealand-Malaysia; Pakistan-Malaysia; Turkey-Malaysia
The Philippines	EFTA-Philippines; **Japan-Philippines**
Singapore	China-Singapore; Costa Rica-Singapore; EFTA-Singapore; EU-Singapore; GCC-Singapore; India-Singapore; Japan-Singapore; Jordan-Singapore; Korea-Singapore; New Zealand-Singapore; Pacific Alliance-Singapore; Panama-Singapore; Peru-Singapore; Singapore-Australia; Singapore-Chinese Taipei; Turkey-Singapore; United Kingdom-Singapore; United States-Singapore
Thailand	Chile-Thailand; India-Thailand; **Japan-Thailand**; **Lao PDR-Thailand**; Thailand-Australia; Thailand-New Zealand; Thailand-Peru
Vietnam	Chile-Vietnam; EU-Vietnam; EAEU-Vietnam; **Japan-Vietnam**; **Korea-Vietnam**; United Kingdom-Vietnam
China	**China-ASEAN**; China-Australia; China-Chile; China-Costa Rica; China-Georgia; **China-Hong Kong**; **China-Korea**; China-Macao; China-Mauritius; China-New Zealand; **China-Singapore**; Iceland-China; Pakistan-China; Peru-China; Switzerland-China
Hong Kong	**ASEAN-Hong Kong**; **China-Hong Kong**; EFTA-Hong Kong; Hong-Kong-Australia; Hong Kong-Chile; Hong Kong-Georgia; Hong Kong-Macao; Hong Kong-New Zealand
Japan	**ASEAN-Japan**; **Brunei-Japan**; Chile-Japan; EU-Japan; India-Japan; Japan-Australia; **Japan-Indonesia**; **Japan-Malaysia**; Japan-Mexico; Japan-Mongolia; Japan-Peru; **Japan-Philippines**; **Japan-Singapore**; Japan-Switzerland; **Japan-Thailand**; **Japan-Vietnam**; United Kingdom-Japan
Korea	**ASEAN-Korea**; Canada-Korea; **China-Korea**; EFTA-Korea; EU-Korea; Korea-Australia; Korea-Central America; Korea-Chile; Korea-Colombia; Korea-India; Korea-New Zealand; **Korea-Singapore**; Korea-Turkey; Korea-United States; **Korea-Vietnam**; Peru-Korea; United Kingdom-Korea

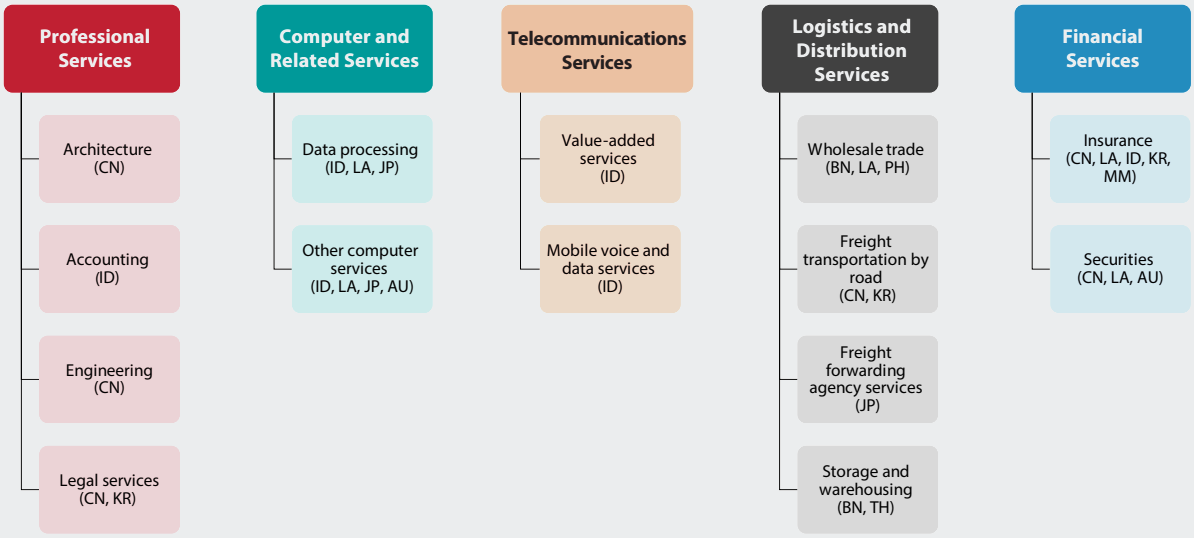
Sources: World Trade Organization; and AMRO staff compilation.
Note: Bolded pairs refer to intra-ASEAN+3 agreements. EAEU = Eurasian Economic Union; EFTA = European Free Trade Association; EU = European Union; GCC = Gulf Cooperation Council. The Pacific Alliance comprises Chile, Colombia, Mexico, and Peru. The bilateral trade agreement between Lao PDR and Thailand is called the "Laos-Thailand Preferential Trading Agreement."

Table 2.6.2. Rules of Origin in the RCEP and ASEAN+1 Free Trade Agreements

	Calculation of Regional Value Content (RVC)	Minimal Operations and Processes	Indirect Materials/ Neutral Elements
RCEP vs. ASEAN Trade in Goods Agreement (ATIGA)	N/A	In addition to the minimal operations and processes listed under the ATIGA, the RCEP includes 8 more categories of minimal operations that do not confer origin.	The ATIGA rules disregard neutral elements, while the RCEP treats an indirect material as an originating material without regard to where it is produced.
RCEP vs. ASEAN-China FTA (ACFTA)	In addition to the Indirect/Build-Down formula provided for under the ACFTA, the RCEP also provides for a Direct/Build-Up formula for RVC calculation.	In addition to the minimal operations and processes listed under the ACFTA, the RCEP includes 8 more categories of minimal operations and processes that do not confer origin.	The ACFTA rules disregard neutral elements, while the RCEP treats an indirect material as an originating material without regard to where it is produced.
RCEP vs. ASEAN-Japan Comprehensive Economic Partnership (AJCEP)	In addition to the Indirect/ Build-Down formula provided for under the AJCEP, the RCEP also provides for a Direct/Build-Up formula for RVC calculation.	The RCEP rules contain more categories of minimal operations and processes than those set out under the AJCEP.	N/A
RCEP vs. ASEAN-Korea FTA (AKFTA)	N/A	The AKFTA rules contain more categories of minimal operations and processes than those included by the RCEP rules.	The AKFTA rules disregard neutral elements, while the RCEP treats an indirect material as an originating material without regard to where it is produced.
RCEP vs. ASEAN-Australia-New Zealand FTA (AANZFTA)	N/A	The RCEP rules contain more categories of minimal operations and processes than those included by the AANZFTA rules.	N/A

Source: Tan and others (2020).
Note: "Indirect material/neutral element" refers to a good used in the production, testing, or inspection of another good but not physically incorporated into that other good, or a good used in the maintenance of buildings or the operation of equipment associated with the production of a good, including fuel, energy, lubricant, tools, dies, molds, etc. The calculation of RVC is as follows:
Indirect/Build-Down Formula: RVC = (FOB – VNM) / FOB * 100%; Direct/Build-Up Formula: RVC = (VOM + direct labor + direct overhead + profit + other cost) / FOB x 100%, where FOB = free-on-board value of the good; VOM = value of originating materials/parts/produce acquired or self-produced and used in the production of the good; VNM = value of non-originating materials used in the production of the good. N/A = not available.

Figure 2.6.2. Additional Services Trade Liberalization under the RCEP



Source: Singapore Ministry of Trade and Industry.
Note: Additional services liberalization under the Regional Comprehensive Economic Partnership (RCEP) provided by ASEAN economies compared with ASEAN's Framework Agreement on Services; by China, Japan, Korea, Australia, and New Zealand compared to their respective ASEAN+1 FTA Schedules of Specific Commitments. AU = Australia; BN = Brunei; CN = China; ID = Indonesia; JP = Japan; KR = Korea; LA = Lao PDR; MM = Myanmar; PH = the Philippines; and TH = Thailand.

Figure 2.6.3. E-Commerce Provisions in the RCEP and Other Agreements

E-Commerce Provisions	RCEP (2022)	ASEAN Agreement on Electronic Commerce (2021)	CPTPP (2018)	AANZFTA (2010)
Cooperation	Art. 12.4	Art. 6	Art. 14.15-16	Art. 10.9
Transparency	Art. 12.12	Art. 13	None	Art. 10.3
Stakeholder engagement	Art.12.16	Art. 11	None	Art. 10.10
Paperless trading	Art. 12.5	Art. 7.1	Art. 14.9	Art. 10.8
Electronic authentication and electronic signatures	Art. 12.6	Art.7.2	Art. 14.6	Art.10.5
Online consumer protection	Art.12.7	Art. 7.3	Art. 14.7	Art. 10.6
Online personal information protection	Art. 12.8	Art. 7.5	Art. 14.8	Art.10.7
Domestic regulatory framework	Art. 12.10	Art. 12	Art. 14.5	Art. 10.4
Dispute settlement	Art. 12.17	Art. 15	Art. 14.18	Art. 10
Electronic payment	None	Art. 9	None	None
Logistics	None	Art. 10	None	None
Cross-border transfer of information	Art. 12.15	Art. 7.4	Art.14.11	None
Location of computing facilities	Art. 12.14	Art. 6	Art. 14.13	None
Cybersecurity	Art. 12.13	Art. 8	Art.14.16	None
Customs duties	Art.12.10	None	Art. 14.3	None
Unsolicited commercial electronic messages	Art. 12.9	None	Art. 14.14	None
Non-discrimination of digital products	None	None	Art. 14.4	None
Source code	None	None	Art. 14.10	None
Principles on access to use of the internet for e-commerce	None	None	Art. 14.12	None
Internet interconnection charge sharing	None	None		None

Source: Tham (2021).
Note: AANZFTA = ASEAN-Australia-New Zealand Free Trade Agreement; CPTPP = Comprehensive and Progressive Agreement for Trans-Pacific Partnership; RCEP = Regional Comprehensive Economic Partnership.

V. Summary and Policy Implications

The tenacious COVID-19 pandemic has disrupted, and continues to disrupt, economic activity in the ASEAN+3 region and around the world. What began as a health crisis developed into sectoral supply shocks as lockdowns and physical distancing rules disrupted economic activities. The initial supply shocks propagated to a decline in demand, which was amplified in many cases as businesses were forced to cut back on production and lay off workers. Swift action by policymakers has cushioned the loss in household income and firms' cash flow and prevented an amplification of shocks through the financial sector. But prolonged policy support, made necessary by repeated waves of the pandemic, could bring its own risks by delaying the reallocation of resources needed for economies to heal and thrive in the post-pandemic new normal.

After two years and counting, some extent of scarring is unavoidable—although it will take different forms in different economies and some economies will be more affected than others. Aging economies such as Japan and Korea could experience scarring mainly in the labor supply as the pandemic has intensified already worrying trends in labor force growth. Some advanced and emerging-market economies in the region also face the prospect of scarring on the productivity front if prolonged government support and forbearance creates a cohort of zombie firms that become a drag on future economic growth. Emerging-market and developing economies in ASEAN could experience scarring in capital stock and investment as the rebuilding of fiscal buffers and a high debt service burden may constrain much-needed investments in infrastructure, especially those needed for digitalization. The least developed ASEAN economies will suffer the deepest scarring in human capital and labor productivity, given the minimal financial support they can afford and their lower capacity to utilize technology to effectively adapt to remote or low-contact modes of schooling and work.

On the other hand, the pandemic has spurred innovation in sectors such as retail, finance, and healthcare, which might lift the region's economies in the long run toward higher productivity-driven growth. By prompting innovation and adaptation to digital technology—out of sheer necessity in many cases—the COVID-19 pandemic has accelerated the pace of many pre-existing trends. Online shopping and digital payments were in relative infancy in the region (outside of China and Korea) before the pandemic, but they are becoming the norm now. Video conferencing and meetings, a last resort for most businesses in the past, have also become the norm, saving time and travel costs. Telemedicine was a slow-moving trend that suddenly gained enormous steam when the pandemic forced a shift in the public mindset regarding healthcare delivery.

The COVID-19 pandemic is a truly global crisis, and the world will look different when we come out on the other side. Previous crises seared into the region's collective memory, such as the Asian financial crisis and the SARS outbreak, were more limited in scope and did not affect most parts of the world, which provided a lifeline for the region's crisis-hit economies. The global financial crisis was relatively contained in its impact on the region, as the epicenter was in the United States and banking systems in the region were relatively sound and unaffected by the spillovers. By disrupting international mobility and trade through border closures, the pandemic has shocked the traditionally outward-looking ASEAN+3 region. Travel and tourism, a mainstay of many ASEAN economies, will take a long time to recover. GVCs, already discombobulated by geopolitical tensions, have been further challenged by pandemic-induced supply chain disruptions. Globally, economic nationalism is rising, driven by countries' experiences in trying to procure medical equipment, treatments, and vaccines and fueled by the United States' ongoing competition with China in trade and technology.

Looking ahead, the ASEAN+3 economies will need to double down on strengthening intra-regional links by deepening economic integration and expanding areas of cooperation. The launch of the RCEP at the start of 2022 comes at an opportune time for the region as it seeks to recover from the pandemic and shore up supply chains. Going forward, the region could build on the RCEP Agreement in several areas to invigorate growth in the pandemic's wake:

- **Advancing regional digital integration**. Given the extensive impact the pandemic has had in elevating digital transformation to the forefront of the policymaking agenda, it has become ever more crucial to ensure the alignment and sustainability of digital integration efforts across the region as it seeks to capitalize on these opportunities. ASEAN+3 governments will need to continue leading by example for industry to follow, including reforming and enhancing regulatory and legislative frameworks for greater digital innovation. But the need remains to ensure universal digital inclusion so that no economy or societal group gets left behind. Compared to the Plus-3, emerging-market and developing ASEAN economies still have some catching up to do, especially in areas such as digital skills and talents, digital payments and identities, and cybersecurity and data protection (ASEAN 2021b). This points to the importance of creating opportunities for economies to cooperate within the ASEAN+3 framework to address the digital divide, improve data protection and governance, and explore bilateral or multilateral digital agreements based on rules and mutual trust. ASEAN+3 members could also consider setting up a special fund to provide longer-term financing to support structural reforms, particularly in low-income members.

- **Improving logistics interconnectivity and integration**. Trade and commerce have been, and will continue to be, a lifeline and a key engine of growth for the ASEAN+3. While ASEAN+3 economies have made much progress in improving logistics efficiency and competitiveness, more can be done to make regional trade in goods as seamless as possible. In addition to regulatory reforms along the lines recommended in OECD (2021c)—including removing restrictive provisions on cross-border road freight transport and cabotage and facilitating region-wide development of multimodal goods transportation—there is scope for greater collaboration within the ASEAN+3 to improve logistics interconnectivity and integration in the region. The new ASEAN Smart Logistics Network (ASLN) platform, launched in November 2020, for example, is a promising initiative in this area; while the main entities in ASLN projects will be ASEAN-based, the Plus-3 economies can collaborate in various ways, including through the exchange of technological know-how, goods, and services for infrastructure development (Koty 2021).[61] Another example is the ASEAN Single Window (ASW), a digital initiative that connects and integrates the national "single windows" to enable the electronic exchange of border trade-related documents, thus helping expedite and simplify customs procedures.[62] Once fully operational, there will be much to gain by bringing in China, Japan, and Korea to the ASW to further streamline customs operations and facilitate intra-ASEAN+3 trade.[63]

- **Enabling real-time cross-border payments and settlements**. Instant cross-border payments can bring an array of benefits for the region, supporting economic growth, financial inclusion, and regional and international trade—similar to what the Single Euro Payments Area (SEPA) has done in Europe.[64] Most ASEAN economies have a robust domestic real-time payments infrastructure in place, and some have launched, or are planning to launch, direct cross-border infrastructure linkages. The issuance of guidelines for implementing the ASEAN payments policy framework for cross-border real-time retail payments in 2020 was a significant step in advancing the goal of achieving greater payment integration and connectivity within ASEAN by 2025. Going forward, a safe and resilient regionwide real-time payment network that harmonizes payment standards and ensures interoperability among all ASEAN+3 economies would further enable and provide a boost to economic activity, especially e-commerce. Future success would need to be underpinned by strong regional cooperation on harmonized data-protection and privacy regulations and frameworks, to establish user trust, minimize fraud, and encourage more cross-border financial flows.

- **Strengthening regional supply chain security**. The pandemic has highlighted the vulnerability of global supply chains, especially for critical items such as medical supplies, semiconductors, oil, and basic food items. Regional mechanisms for exchange of these critical goods during times of emergency could offer temporary solutions while economies ramp up domestic capacity or diversify their sources of supply. ASEAN's 2020 Hanoi Plan of Action to "identify and address trade disruptions….on the flow of essential goods, including food, medicines, and medical and other essential supplies in the region" is a good example of how economies in the region can collaborate to secure the flow of essential goods, but it excludes the Plus-3 economies, which are key GVC nodes that the rest of the ASEAN connects to (ASEAN 2020).[65] As the ASEAN+3 becomes increasingly integrated post-pandemic, closer cooperation and collaboration in building a regional post-pandemic view of essential supply chains will be critical, along with understanding their interrelationships and risks to supply, and future-proofing them against shocks.

For individual ASEAN+3 economies, the COVID-19 pandemic demonstrates the importance of resilient economic systems. A resilient economy is one with the "ability to implement appropriate responses after a shock occurs, with the aim of reverting back to the previous growth path" (Brunnermeier 2021). As the pandemic stretches into its third year, it is not too late for the ASEAN+3 to implement appropriate responses to prevent or reverse the effects of scarring in their economies and gird themselves for future shocks. Key priorities include the following, although the urgency and type of reforms

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61/ Two projects have been launched under the ASLN so far. The first project, launched in November 2020, is the Vinh Phuc Inland Container Depot Logistics Centre (SuperPort) in Vietnam, a multi-modal logistics hub integrating dry port and advanced supply chain nerve center operations that will make it a key connection point for trade and supply chains between China, Vietnam, ASEAN and other international markets. The second project, launched in March 2021, is the Phnom Penh Logistics Complex in Cambodia, which will follow the SuperPort concept and also feature a training academy and startup hub to develop Cambodia's human capital in the logistics sector (Koty 2021).

62/ A single window is a facility that allows parties involved in trade and transport to lodge standardized information and documents with a single entry point to fulfill all import, export, and transit-related regulatory requirements. The ASW enables a single submission of data, a single synchronous processing of information, and a single decision-making for customs release and clearance among ASEAN members and participating economies.

63/ The ASW has developed a roadmap for the exchange of e-documents with ASEAN dialogue partners, and discussions are underway with Japan and Korea on the possibility of exchanging the electronic certificate of origin.

64/ SEPA provides a common set of standards and frameworks to harmonize cashless euro transactions (credit transfers, direct debit payments, and card payments) across Europe. The SEPA platform was modernized in 2017 to enable real-time payments across the region. SEPA covers the whole of the European Union (EU) plus 11 non-EU members.

65/ In April 2021 Japan joined the trilateral Supply Chain Resilience Initiative with Australia and India ostensibly to counter China's dominance in the region's trade. The three countries will share best practices on supply-chain resilience and hold investment promotion events to explore the possibility of diversification of their supply chains.

will differ across the different economies depending on their pre-COVID-19 circumstances and potential areas of scarring due to the pandemic.

- **Strengthening "health resilience."** For some economies, enhancing the ability to bounce back from health shocks such as the COVID-19 pandemic requires significant investments to ensure rapid access to adequate health services at all times. This would entail, for example, the ability to rapidly scale up health system infrastructure during a crisis, e.g., by constructing new treatment facilities (as China has done) or converting or reconfiguring existing facilities; as well as incentivizing the adoption of digital technology or telehealth services to provide ongoing and acute care (Haldane and others 2021). More importantly, the pandemic has demonstrated the need to invest in improving both the quantity and quality of health workers in the long term.

- **Reversing human capital losses due to the disruption in education**. Estimated learning losses are especially large in economies where the human capital stock is already relatively low, such as Cambodia, Lao PDR, and Myanmar. Without policy action, the current generation of students in these economies will be permanently scarred, and both within-country and cross-country inequality of development opportunities will widen. Thus, these economies urgently need to implement a learning recovery program to help students catch up on lost schooling (World Bank, UNESCO, and UNICEF 2021). Since pandemic-induced school closures may not be over, they should not wait to improve their readiness for remote learning, including by increasing access to affordable devices and internet connectivity. Such investments will strengthen the education system's resilience to meet future public health emergencies or natural disasters that impede in-person classes. Korea's government, for example, has dedicated a portion of its total stimulus packages to education and training, including deployment of digital infrastructure from kindergarten through grade 12, support of remote learning for universities, strengthening teacher capacities in remote teaching, and development of Korean massive open online course content (World Bank, UNESCO, and UNICEF 2021).

- **Investing in infrastructure for the digital economy**. By forcing a shift to contactless interactions that rely on digital technology, the pandemic has significantly shortened the timeframe for ASEAN+3 economies to upgrade their technological capability and build the advanced telecommunications infrastructure needed for the digital economy. For most ASEAN economies, spending on digital infrastructure is essential to improve their ability to support social-distancing policies and enable remote schooling and work. In addition to mitigating the effect of the COVID-19 crisis on the economy and human capital, digital infrastructure needs to be developed or improved to compete effectively in the post-pandemic new economy by harnessing technological progress. Governments could facilitate this transition by providing appropriate incentives. For example, Thailand offers an eight-year corporate income tax exemption for submarine cables, data centers, and cloud services. Building these new infrastructure requirements will be particularly challenging for low-income economies in the region, which already have large gaps in basic infrastructure entering the pandemic and have weaker fiscal positions as a result of the pandemic. A concerted effort would be needed to reallocate spending, enhance domestic revenue mobilization, and improve investment efficiency, as well as to leverage financing options and expertise available in the region.

- **Fostering a competitive business environment**. A resilient economy bounces back faster through creative and disruptive innovation, even if that means that some firms will exit the market. As many ASEAN+3 governments debate how long they should continue extending regulatory forbearance and direct financial support for domestic firms, they face a delicate trade-off between averting a potential bankruptcy wave that could jeopardize economic recovery on the one hand and impeding the Schumpeterian creative destruction process necessary for long-term growth on the other hand. Sooner rather than later, ASEAN+3 economies need to shift their support for firms toward facilitating the necessary reallocation of capital and labor to new and expanding sectors. While the circumstances will vary for different economies, policymakers should keep their focus on three critical areas: the long-term health of the corporate sector, the most productive use of public resources and interventions, and preventing collateral damage such as unintended consequences for financial stability (G30 2020).

- **Continuous learning and upgrading**. Workers should keep their skills up to date so that they can build personal resilience in a rapidly changing labor market. Continual upskilling, reskilling, cross-skilling, and new-skilling are imperative as economies undergo structural changes accelerated by the crisis—certain jobs will disappear as some close-contact industries shrink after prolonged social distancing while others increase their reliance on robotics and AI. For example, in addition to its existing SkillsFuture lifelong learning initiative that provides training subsidies for all citizens, the Singapore government has offered job, traineeship, and skills-training opportunities through its pandemic-support SGUnited Jobs and Skills Package, which has helped to speed up job-matching and shift displaced workers to recovering sectors (AMRO 2021e). Governments need not do this alone—they can also incentivize

firms to invest in their workforce since developing human capital to be future-ready is key for businesses to be sustainable in the new economy. For example, Malaysia's newly established Government-Industry Technical and Vocational Education and Training Coordination Body will facilitate the direct involvement of industries in skills development to ensure that workforce abilities match market demand.

- **Rebuilding fiscal policy space**. The COVID-19 crisis has reinforced the lesson that resilience requires fiscal policy space to implement appropriate responses to support the economy to minimize scarring and speed up post-shock recovery. Although most emerging-market and developing ASEAN+3 economies had significantly more fiscal space entering the pandemic than they did in previous crises, the large and sustained response necessitated by the prolonged pandemic has tested, and continues to test, the limits of policy space in emerging and developing economies—which are also more vulnerable to capital flow reversals. Rebuilding fiscal policy space will be an important task for ASEAN+3 economies after the recovery takes hold. While specific reforms will vary with individual economies' circumstances, the overall objective will involve reforms to enhance taxing power, restore fiscal buffers, and strengthen borrowing capacity.

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