# Overview

Macroeconomic assessment and economic outlook

The COVID-19 pandemic has caused economies around the world to falter to degrees not experienced in decades. Emerging Asian countries (ASEAN 10 countries, China and India) had confirmed more than 1.3 million cases as of early July, with a case fatality rate of roughly 3%. Governments mustered massive monetary and fiscal support to lessen the immense stress on health services and keep the social fabric intact. Quarantines and curfews were imposed to limit the spread of the virus, although these in turn hampered economic activity. The progress in containing infections has been uneven across Emerging Asia. India, Indonesia and the Philippines are still confronting rising case loads.

Growth prospects of Emerging Asian economies, which were already weakening before the outbreak, have absorbed big blows on several fronts. Q1 2020 data convey feebleness across demand and supply components in all reporting countries in the region. Even the customarily resilient services sectors are wilting from the stress of COVID-19 despite buoyancy induced by deepening digitalisation (Figure 1). Understandably, the health emergency has weighed heavily on aggregate private spending and investment. The partial or total closure of factories and offices have resulted in production cutbacks.

Figure 1. **Manufacturing and services in selected ASEAN economies, 2016-20**

Year-on-year growth, percentage
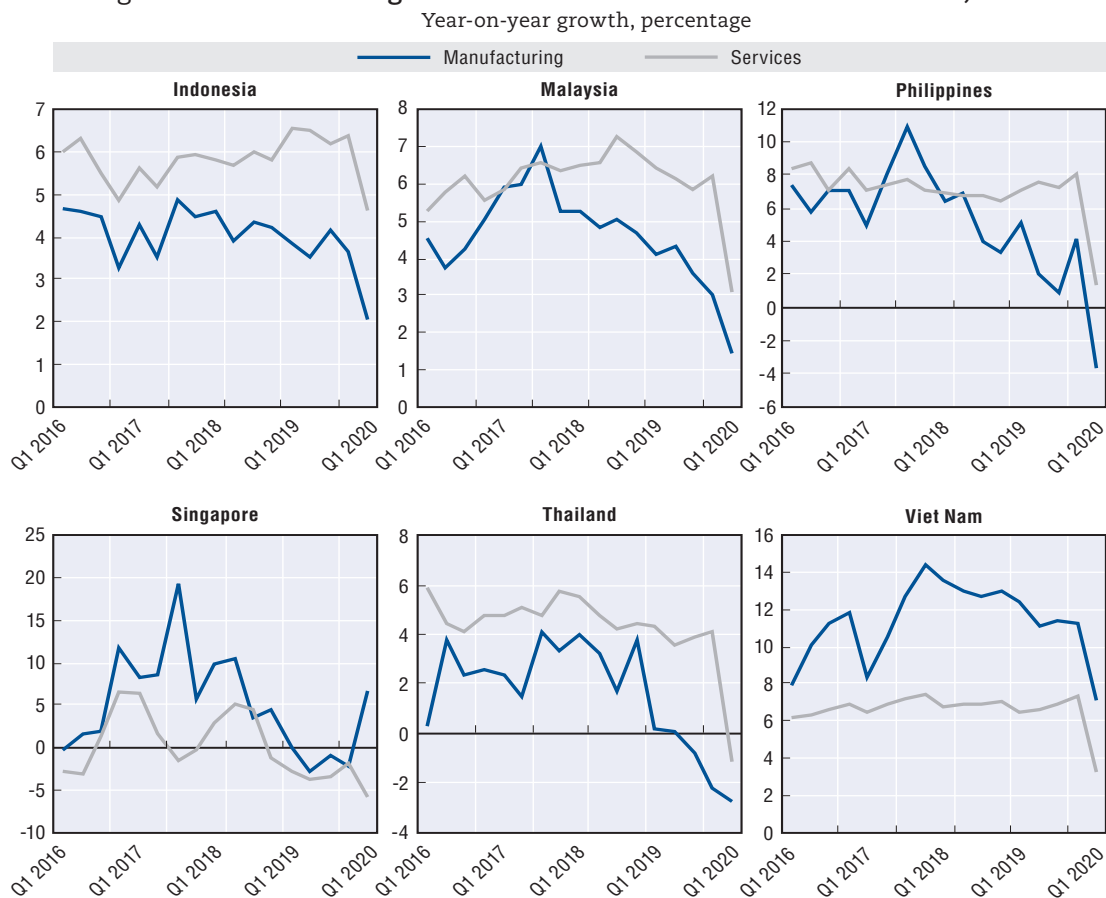
Note: Data for Viet Nam are year-to-date.

Source: OECD Development Centre based on CEIC.

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The fact that COVID-19 spread in the most densely populated and economically active areas has made it more difficult to deal with the health and ecomonic effects of the pandemic. Subnational-level data in ASEAN-5 show that cases of infection are disproportionately higher in major cities and urban areas. This is particularly glaring in the Philippines, where Metro Manila (the National Capital Region) and Central Visayas account for close to 70% of total officially confirmed cases. Bangkok accounts for about 50% of the confirmed cases in Thailand (Figure 2).

Figure 2. **Most affected areas in ASEAN-5, share in COVID-19 cases and national GDP**

Percentage
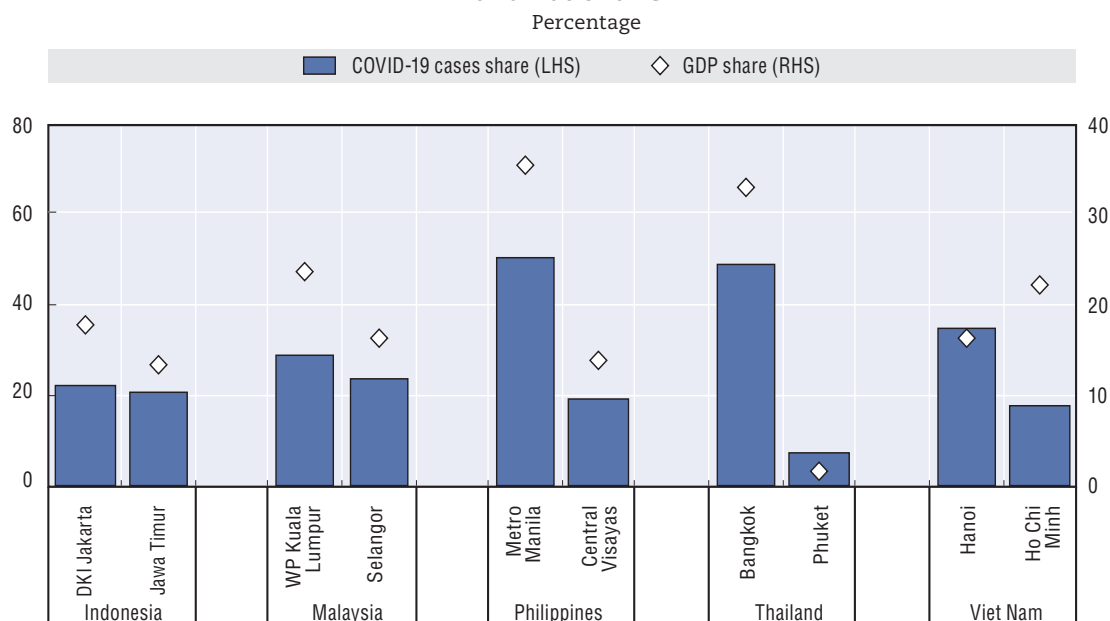
Note: Agglomerations are based on the definitions of national authorities as published. They may or may not be strictly comparable across countries. Only the top two areas in terms of share are included in the chart. COVID-19 data are as of 21 June 2020. GDP shares are based on current price series except for Malaysia (constant price) and refer to 2019 for Indonesia and 2018 for the rest. LHS means left-hand scale. RHS means right-hand scale.
*Source*: OECD Development Centre based on national sources and CEIC.
StatLink https://doi.org/10.1787/888934160608

Although quarantines and restrictions on movement have been relaxed in a number of countries to restart economic engines, the path to normalcy is beset by uncertainties, and economic recovery is expected to be very gradual. It will likely take a few quarters before the crisis-related restrictions imposed in many countries are lowered to nil. The expansion of private consumption will be measured, given the broad and deep impact of the pandemic on labour markets.

A portion of the jobs lost, especially in the hospitality industry, cannot be restored in a short period. In particular, recovery in the aviation sector is anticipated to be slow. Levels of underemployment and labour informality, as well as the lack of well-established unemployment protection, are additional labour market vulnerabilities in Emerging Asia. Underemployment rates in Brunei Darussalam, Lao People's Democratic Republic (hereafter "Lao PDR") and the Philippines exceeded an estimated 10% of the labour force in 2019 (Figure 3), while labour informality in the non-agriculture sector comprises

more than half of all workers in many countries in the region (Figure 3). "No work, no pay" situations in already low-paying jobs place many of these workers at the mercy of emergency government subsistence allowances.

Figure 3. **Unemployment, underemployment and labour informality in Emerging Asia**
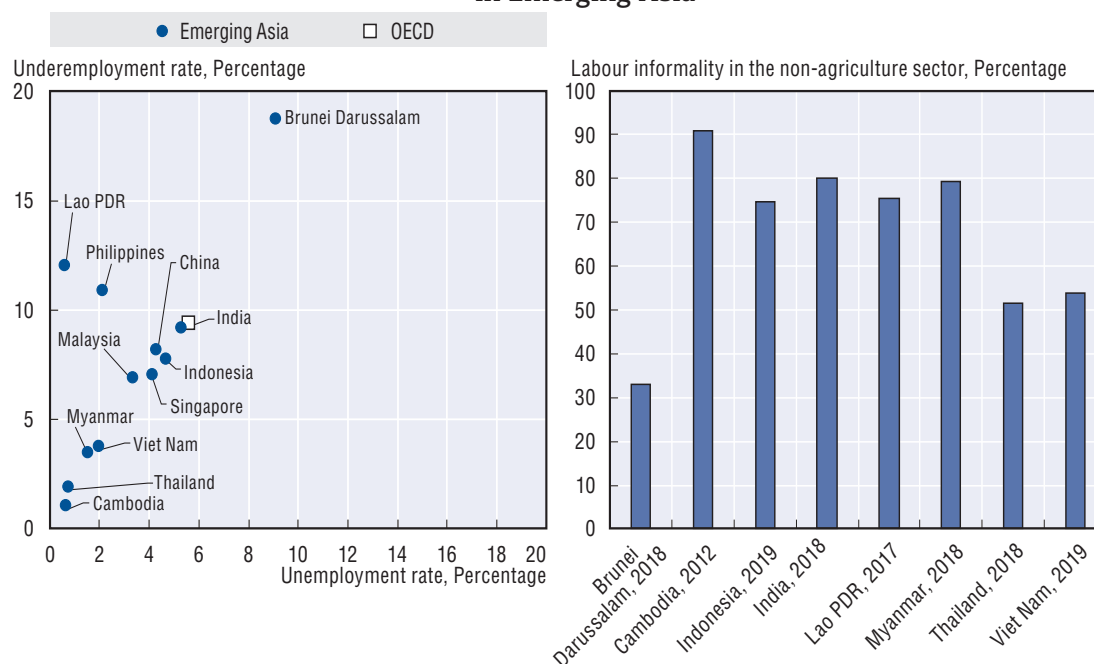
Note: The unemployment and time-related underemployment data refer to the International Labour Organization (ILO) modelled estimates in November 2019. The OECD data refer to the simple average of the 36 countries using ILO data. Labour informality refers to the proportion of informal employment in non-agricultural employment (harmonised series) of ILO.
Source: OECD Development Centre and ILO.
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The ongoing pandemic also creates employment instability for overseas workers. Land-based and sea-based foreign workers, such as the manpower for cargo and cruise ships, are affected to the same extent. Displacement of foreign workers means not only reduced remittances, and therefore lower purchasing power for dependent households, but also additional entrants to the domestic labour market. The Philippines received about 9.3% of GDP in remittances in 2019 and has a high stock of nationals overseas (Figure 4). Considering the labour market challenges, spending on basics and the rebuilding of the precautionary savings pool are anticipated to take precedence among households during the recovery period.

Figure 4. **Personal remittances and stock of nationals abroad, Emerging Asia**

Percentage
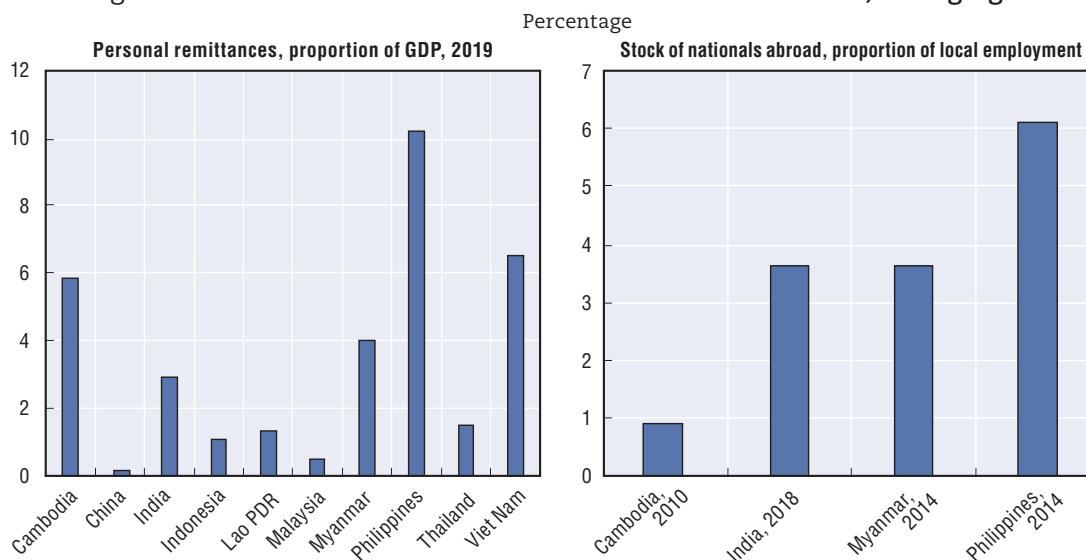
Note: The foreign nationals abroad data and total employment data are from ILO. They do not include sea-based workers. For Myanmar, the foreign nationals data refer to 2014 while the total employment data refer to 2015.
Source: OECD Development Centre based on ILO; World Bank.
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Indications of a healthy trade rebound are also limited. The retention of border restrictions, struggling domestic markets in advanced economies, political distrust among major trading countries and a potential re-escalation of trade tension likewise do not augur well for the cross-border flow of goods. These developments could in turn hamper long-term private investment recovery. Emerging Asian economies generally have room for fiscal manoeuvres, but the space is limited, especially as revenues decline. In certain cases, governments also have to spare funding for natural disasters accompanying the monsoon season and other similar emergencies in the second half of the year.

Against this backdrop, economic output of Emerging Asian countries is projected to decline by 2.9% in 2020 (Table 1). It is estimated that growth will climb to 6.8% in 2021 as ground conditions gradually return to normalcy. Southeast Asia's economy as a whole is expected to contract in 2020 by 2.8% before growth resumes in 2021. Economic growth patterns in China and India are anticipated to follow the same trajectory. China's economy is expected to contract this year for the first time since the 1970s before GDP growth improves the following year. India's economy will also decline for the first time in more than 40 years and recover in 2021.

Table 1. **Real GDP growth in ASEAN, China and India, 2019-21**

Percentage

	2018	2019	2020	Changes from the previous forecast (Nov. 2019)	2021
ASEAN-5 countries					
Indonesia	5.2	5.0	-2.8	↓	5.2
Malaysia	4.8	4.3	-3.9	↓	5.9
Philippines	6.3	6.0	-3.2	↓	7.0
Thailand	4.2	2.4	-6.7	↓	4.9
Viet Nam	7.1	7.0	2.5	↓	7.2
Brunei Darussalam and Singapore					
Brunei Darussalam	0.1	3.9	1.4	↓	3.3
Singapore	3.4	0.7	-4.4	↓	3.5
CLM countries					
Cambodia	7.5	7.1	-1.0	↓	5.8
Lao PDR	6.2	6.1	1.0	↓	5.0
Myanmar	6.4	6.8	2.0	↓	7.3
China and India					
China	6.7	6.1	-2.6	↓	6.8
India	6.1	4.2	-3.7	↓	7.9
Average of ASEAN-10	5.3	4.7	-2.8	↓	5.6
Average of Emerging Asia	6.3	5.4	-2.9	↓	6.8

Note: Data are as of 26 June 2020. Data for India and Myanmar relate to fiscal years. For Lao PDR, the 2019 GDP growth rate is an estimate. The projections for China, India and Indonesia for 2020 and 2021 are based on the OECD Economic Outlook 107 (database). The projections assume "single hit" scenarios, in which a second big outbreak is avoided. They also assume that world GDP is declining in 2020 but will almost regain pre-crisis level (2016 level) in 2021.
Source: OECD Development Centre.

ASEAN-5

- I**ndonesia** is still struggling to contain the spread of COVID-19. As private consumption and investment weaken, GDP is forecast to shed about 2.8% in 2020 in its first contraction since the Asian Financial Crisis. The decline in the growth of private consumption in Q1 2020 was only partly offset by higher government consumption, while the contribution of net exports to GDP also diminished.

- **Malaysia** has managed to rein in COVID-19 cases steadily since April 2020. Nevertheless, private spending resilience is wavering and export prospects remain downbeat. Malaysia experienced marked declines in net exports and investment in Q1 2020. Against this backdrop, GDP is projected to decline by 3.9% this year.

- Reigniting business remains challenging in the **Philippines** due to protracted uncertainty over the extent of COVID-19 cases. Flailing export earnings add to the headwinds for growth. The economy is expected to shrink in 2020 by 3.2%, its first contraction in more than two decades.

- **Thailand** has navigated the pandemic relatively well, with daily cases of infection steadily declining to single digits since peaking in March. However, the grim tourism and trade outlook weigh heavily on the economy. Real GDP level in 2020 is forecast to come in lower than the previous year by about 6.7%.

- **Viet Nam** is on track for an exceptional record in public-health crisis management despite the many limitations that the country faces. The considerable dissipation of the health risk has made the environment conducive to a smoother recovery for many firms. GDP growth will slow in 2020 to 2.5%, but the country will continue to lead the ASEAN-5 in this metric.

Brunei Darussalam and Singapore

- The comparatively effective COVID-19 management system in **Brunei Darussalam** allowed the economy to remain partially open even as other ASEAN economies went into strict lockdown. The gradual reversal of the sharp drop in oil prices augurs well for the economy in terms of export earnings and fiscal space. However, with uncertainties in external markets and constraints to fiscal capacity, GDP growth is forecast to roll back to 1.4% in 2020.

- A second wave of infections has pushed back **Singapore**'s re-opening plans. Robust monitoring and healthcare systems proved to be crucial in keeping social order. Government interventions were similarly helpful in limiting firm closures. Nonetheless, the prevailing weakness in domestic and external demand continues to strain economic prospects. GDP is projected to decrease by 4.4% in 2020.

Cambodia, Lao PDR and Myanmar

- **Cambodia** is weathering the COVID-19 health risks comparatively well, helping to maintain a buoyant domestic economy despite the restrictions. Yet growing risks to exports and friction on investment are set to drag down gross economic production by 1.0% in 2020, notwithstanding government assistance programmes. Economic activity is forecast to improve the following year when external uncertainties wane.

- **Lao PDR** has dealt with the threat of COVID-19 rather well, containing incidents of local transmission of the virus. Keeping risks to domestic labour-market stability at bay augurs well for private consumption. A challenge will be finding markets for the country's electricity exports given the slowdown in industrial activity in the region. The country's GDP is expected to register growth of 1.0% in 2020.

- The health situation in **Myanmar** has improved in recent weeks, although security issues in certain areas complicate the response to the health crisis. Easing stress on the growing tourism industry and coping with the wavering export and investment climate are crucial for the economy's stability. Given current conditions, GDP growth is projected to slow to 2.0% in 2020.

China and India

- Notwithstanding new pockets of infection in certain areas, **China** is on its way to restoring its full economic capacity. Strong growth in technology-based emerging sectors has helped lessen the economic impact of the lockdown and is paving the way for a full rebound in domestic activity. Overall, however, the domestic sector is still groping for balance. And with trade tension still dominating bilateral relations, local production is unlikely to draw as much drive from the external market. GDP is projected to decline by about 2.6% at the end of 2020 in the economy's first contraction since the 1970s.

- **India** has become the new epicentre of COVID-19 in Asia, and the government is grappling to reverse the persistent rise in cases. Fiscal limitations and banking sector legacy asset issues compound difficulties in managing the economic risks. Given these factors, the economy is forecast to end fiscal year 2020 (ending in March 2021) in the red. The contraction of about 3.7% will snap the country's four-decade streak of positive growth.

Other key points of the economic outlook and assessment

- The extent of monetary support in major economies effectively ushers in a return to the low-interest rate, high-liquidity environment experienced during quantitative easing. To support the ailing domestic credit market, Emerging Asian economies have ramped up monetary accommodation in a continuation of the policy mix of the previous year (Figure 5).

Figure 5. **Monetary policy actions in selected Emerging Asian economies, 2020**

Basis points
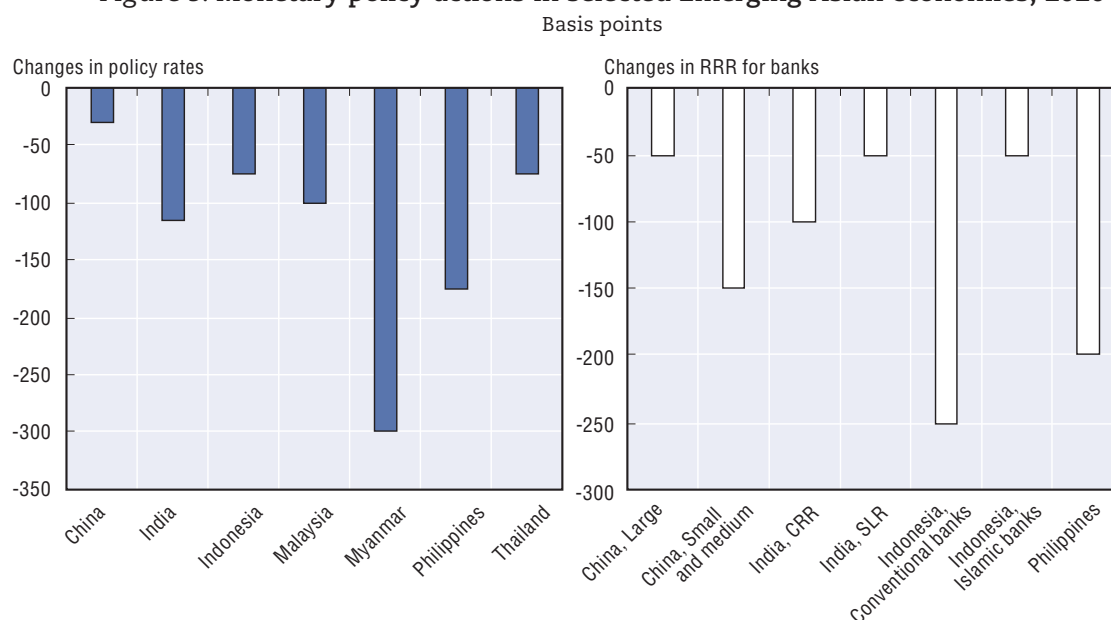
Note: For China, "policy rate" relates to the one-year loan prime rate, and RRR cuts for those small and medium banks in China that specialise in lending to priority sectors are even larger. For India, SLR means statutory liquidity ratio and CRR means cash reserve ratio. For Indonesia, the first local currency RRR cut was announced in December 2019, effective January 2020. In March 2020, Indonesia lowered the foreign currency RRR by 400 bps and the RRR of banks engaged in import and export financing by 50 bps. For the Philippines, RRR covers commercial banks' local currency deposits. The data are from 1 January 2020 to 26 June 2020.

Source: OECD Development Centre calculations based on data from CEIC and national sources.

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- Governments in Emerging Asia have taken drastic measures to finance pandemic-related spending. The fiscal outlays of ASEAN countries for health services, tax adjustments, subsidies and income support (excluding credit guarantees, money market intervention, direct lending and those with no breakdown) range from less than 0.1% to approximately 9% of GDP (Figure 6). In terms of debt, Emerging Asian economies had some fiscal leeway heading into this year, with measured government debt management in the last few years. Nonetheless, the sheer spending requirements needed to maintain social order and help the real economy regain its pre-pandemic health will test fiscal capacity.

Figure 6. **Total amount of fiscal packages and estimated impact
on the fiscal balance of selected Emerging Asian economies**
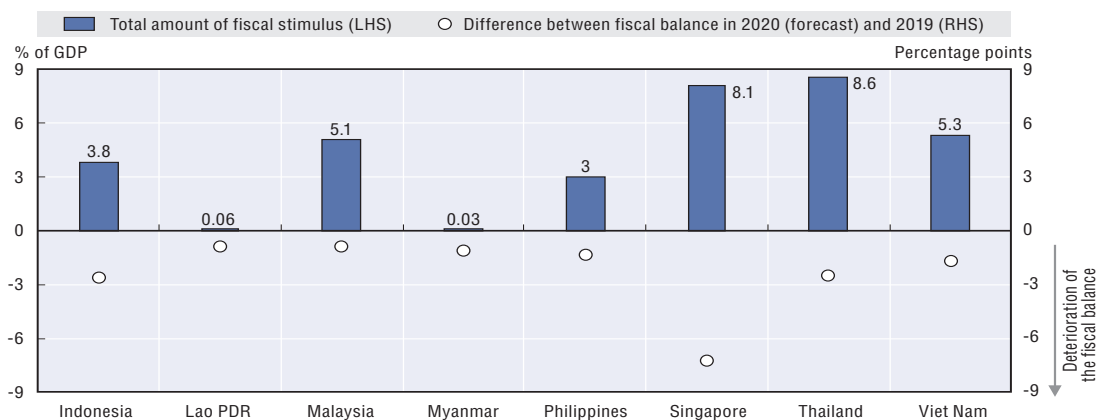
Note: The cut-off date for the fiscal stimulus data is 15 June 2020. Data refer to the general government.
Source: OECD Development Centre based on: ADB (2020), *ADB COVID-19 Policy Database*; IMF (2020a), *World Economic Outlook Database*, April 2020; and the World Bank national accounts dataset.
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- The collapse in economic activity led to both demand- and supply-side pressures in Emerging Asian countries. The aggregate effect of the COVID-19 crisis on inflation is therefore rather difficult to gauge and will depend on how these two forces balance out. Headline inflation in the region has moderated overall. At the same time, low global oil prices, which weighed on overall inflation at the beginning of the year, are on an upward trend. The aggregate figures may nevertheless hide differences at the sectoral levels.

- The flood of liquidity into global financial markets could have repercussions on the volatility of cross-border hot capital flows over the course of a few quarters. The ability to keep macroeconomic fundamentals sound during the recovery process will be essential for smoothing cross-border capital movement. Emerging Asian currencies have mostly weakened vis-à-vis the US dollar, reversing the 2019 trend.

- Corporate earnings are under heavy fire as the real sector reels from the impact of COVID-19. Grim expectations on corporate performance pushed bellwether indices to multi-year lows in the first four months of 2020. Yet hopes brought by the partial re-opening of economies have led equity prices higher since they bottomed out in the March-April period.

- The current account balances of the region's economies are expected to weaken in the coming quarters. Tight border restrictions for shipments will continue to dampen cross-border trade. The risk of revived trade tension could complicate the environment. Furthermore, remittances from foreign workers are expected to weaken significantly in the next few quarters, with many layoffs unlikely to be reversed in the short term.

Policy priorities in response to COVID-19 in Emerging Asia

The COVID-19 crisis demonstrated the importance of digitalisation, which became imperative during confinement to guarantee the continuity of essential services. Looking forward, policy makers need to maximise the use of digital tools while at the same time ensuring cyber resilience. In the tourism sector, which was badly affected, emergency support measures need to be supplemented with a more holistic longer-term strategy.

The health sector needs policies not only to curb the spread of the virus, but also to prepare healthcare systems for potential future outbreaks. Regional initiatives to deal with the pandemic and its effects are currently underway and need to be strengthened going forward.

Surging demand for digital tools creates an opportunity for Emerging Asia

The COVID-19 crisis will negatively impact almost the entire commercial sphere in 2020. However, the crisis triggered by the outbreak will also lead to lasting transformations and should benefit certain sectors, starting with technology and firms that enable online and technology-based services. Indeed, the health crisis pushed employees, households, businesses and students into a digital world. Digitalisation allowed telework and online platform applications to proliferate while people were confined to their homes. Demand for digital work applications and non-professional applications ramped up as lockdown measures took effect globally. These include applications to assist business continuity and online learning, and to provide households with alternative solutions, including online transactions more generally. New telemedicine online platforms were also introduced.

A massive increase in video conferencing is one of the most conspicuous adaptations. This technology proved to be the ultimate solution for remotely connecting personnel, customers, teachers, students, friends and family during the lockdown. Telework expanded as most Emerging Asian countries took action to slow the spread of the virus. Under a lockdown order issued in Lao PDR in March, for example, all government officials were required to work from home. In Indonesia, the government encouraged companies to adopt work-from-home arrangements, and some employees over 50 years of age at state-owned enterprises were asked to work from home beginning in mid-March. However, telework was complicated in some countries by inadequate Internet access and speed.

People turn to online health and education sites

The use of online medical apps increased sharply during the pandemic, with people relying on these applications for information about COVID-19 outbreak and methods for preventing the disease. This helped to expand awareness about COVID-19, especially regarding the extent of transmission and the progress of its spread. The surge was particularly notable in China. The crisis also demonstrated the need to increase healthcare spending, and this will benefit corporations in the biotechnology and medical equipment sectors, as well as pharmaceutical groups. Traditional healthcare is powered by technology, with robots and other technologically-advanced tools deployed to evaluate patients' condition and monitor the spread of the virus.

The closing of schools and educational institutions around the world, meanwhile, sparked increased use of digital online learning tools to allow continuity of education while children and educators were confined to their homes. In China, the usage of online education platforms increased by 22% during the outbreak compared to the same period in the previous year, and people spent 30% more time using these digital platforms. The use of online digital platforms by the education industry surged by 17.5% year-on-year, a larger increase than for the online shopping or video industry.

Insufficient technological capacity can hinder the use of digital tools for education and other purposes, and the problem is likely to persist in emerging economies with limited information technology infrastructure and Internet availability. Affordability of online services is another issue confronting ASEAN countries. In some Emerging Asian countries, online education infrastructure remains weak, with large-scale remote

education mainly provided via television and radio. To meet increased demand for digital learning, improved Internet access and digital education platforms are urgently needed.

Demand rises for cloud hosting, smart home technologies and digital payment

COVID-19 resulted in increased demand for cloud-based business tools and services – computing services, cloud database management and virtual servers – to sustain business functions while employees were working remotely. In April 2020, Emerging Asian economies recorded extraordinary growth in cloud hosting revenue, with China (47.1%) and India (38.5%) displaying the largest increases. Software solutions and development applications have similarly seen an upturn in use. In particular, Indonesia and China posted positive growth in software solutions revenue in April 2020, at 15.7% and 14.6% respectively, while India and Viet Nam saw growth rates below 5% (Figure 7).

Figure 7. **Rise in cloud hosting and software solutions revenue**
April 2019 to April 2020, percentage y-o-y
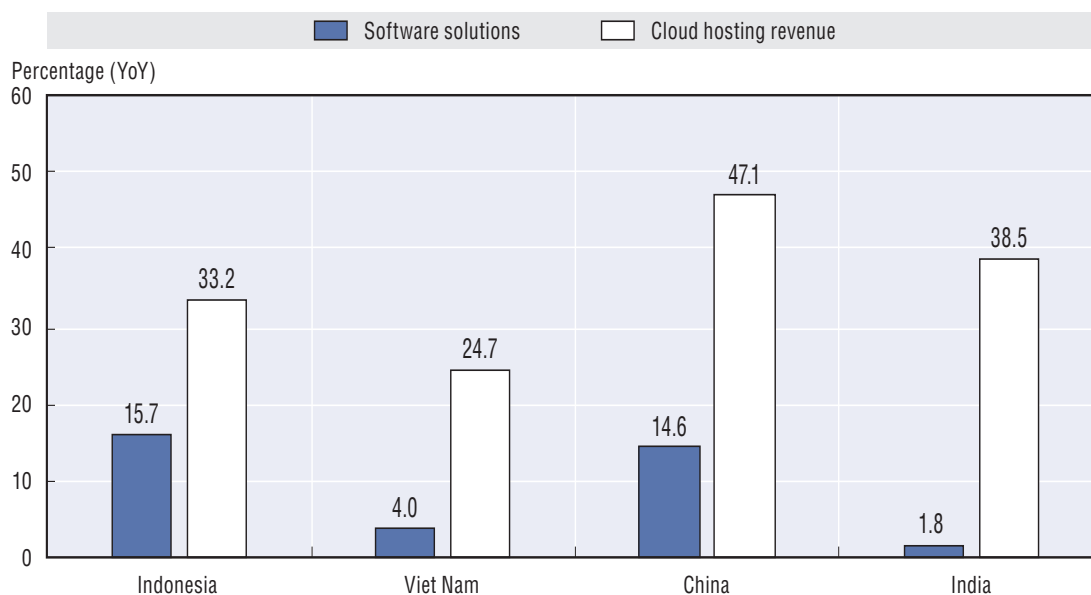
Note: The cloud hosting market represents third-party cloud service providers who deliver computing resources such as servers and storage over the Internet to their customers. This excludes dedicated single-purpose solutions such as ERP and CRM. Company examples include Amazon Web Services, Microsoft Azure, Google Cloud, and IBM. The software solutions market includes Productivity Software, Enterprise Software as well as System Infrastructure Software and Application Development Software. The majority of software solutions in these market segments are designed to be used in a professional environment but may also be used privately. Company examples include Microsoft, Citrix, SAP, and Adobe.
Source: Statista.
StatLink ⟐ https://doi.org/10.1787/888934161216

Along similar lines, "smart home" technologies have grown in response to health insecurity and stay-at-home orders. Other than Singapore, which established home automation prior to COVID-19, all Emerging Asian countries posted significant growth in smart home users in April 2020 year-on-year, in particular the Philippines (60.0%), Cambodia (58.5%), Lao PDR (59.8%), and Myanmar (61.3%).

Furthermore, although retail closures, travel bans and reduced discretionary spending due to the COVID-19 pandemic negatively impacted some sectors, online transactions via various payment methods have seen a recent surge in both revenue and users. Among Emerging Asian economies, Cambodia, Lao PDR and Myanmar posted annual growth of

20% in e-commerce users in April 2020 compared to the previous year. Although CLM countries have seen a spectacular rise in the number of users, the average amount spent per user was lower than elsewhere in the region, as illustrated by the lower transaction revenues in the former. In terms of transaction revenue, the highest growth in digital commerce sales and revenue was recorded in China (24.9%), Indonesia (24.4%) and India (23.2%). Acceleration in the adoption of digital payment technologies also occurred in Malaysia, the Philippines, Thailand, Viet Nam, Singapore and Cambodia, well ahead of Brunei Darussalam, Lao PDR and Myanmar. Two big drivers of digital commerce are the emergence of smartphones and the fast growth of the Internet-connected population.

The pandemic also brought an increase in e-banking as banks encouraged customers to conduct transactions electronically to reduce the risk of transmitting the virus. For example, the volume of e-banking transactions in Viet Nam rose by 26%. In the Philippines, the lockdown measures also resulted in a sharp increase in registrations for Internet banking services. A comparison of transaction statistics in March 2020 before and after the lockdown shows that the transaction value of digital banks soared by 633% and that the number of transactions rocketed by 416%.

Further facilitating digitalisation is crucial in the region

Cloud computing, digital commerce, e-learning platforms, and medical and shopping applications presented an opportunity for countries to make economic gains during the COVID-19 pandemic, while affordable smartphones and the rise of mobile Internet penetration led to momentum in e-commerce activities. Efforts to mobilise digital innovations remain limited in some emerging countries, especially those with insufficient IT infrastructure and Internet availability.

There are various barriers to the growth of digital technology in the region. When available, Internet connectivity mostly takes place through mobile broadband rather than through higher-speed fixed broadband. Investment is needed to upgrade Internet infrastructure and improve bandwidth. To help cover large capital expenditures, public-private partnerships could be envisaged.

Digital skills need strengthening in the region. Increased awareness of digital opportunities could help firms, especially micro, small and medium enterprises (MSMEs), to enhance productivity and increase their presence on global marketplaces. Targeted strategies could be envisaged to assist the corporate sector at large, and lagging sectors in particular, to increase their digital footprint.

Digital payment tools are underused. In order to encourage this payment method, digital payment tools should be made easier to use, the speed of online transfers improved and obstacles (such as barriers to small payments) removed. Customers should be adequately informed, while merchants should be supported to acquire payment terminals. Customers' trust in the integrity of digital payment tools is essential. Fraud prevention mechanisms should be strengthened, in particular where authentication criteria for electronic payments and online transfers are still weak.

With sharp growth in online activities in the current unprecedented situation, a cyber incident that blocks access to the Internet could have severe implications. In an undesirable scenario, a major cyber incident could obstruct business operations, online education and healthcare providers, as well as public systems and networks. It is therefore imperative for Emerging Asian economies to implement strategies that allow firms, individuals and communities to continue operating normally in the event of cyber disruptions.

Travel and tourism are suffering a major blow under COVID-19

Tourism and travel were among the sectors worst impacted by COVID-19 in Emerging Asia. Travel restrictions were imposed in all countries, though the scope, stringency and enforcement of these restrictions varied. The declines in visitor arrivals closely mirror countries' policy approaches in terms of regulating international flows, which have evolved from screening and/or temporary quarantine initially to bans or even border closures as the health crisis unfolded (Figure 8).

Figure 8. **Visitor arrivals plummeted as restrictions on international travel tightened**
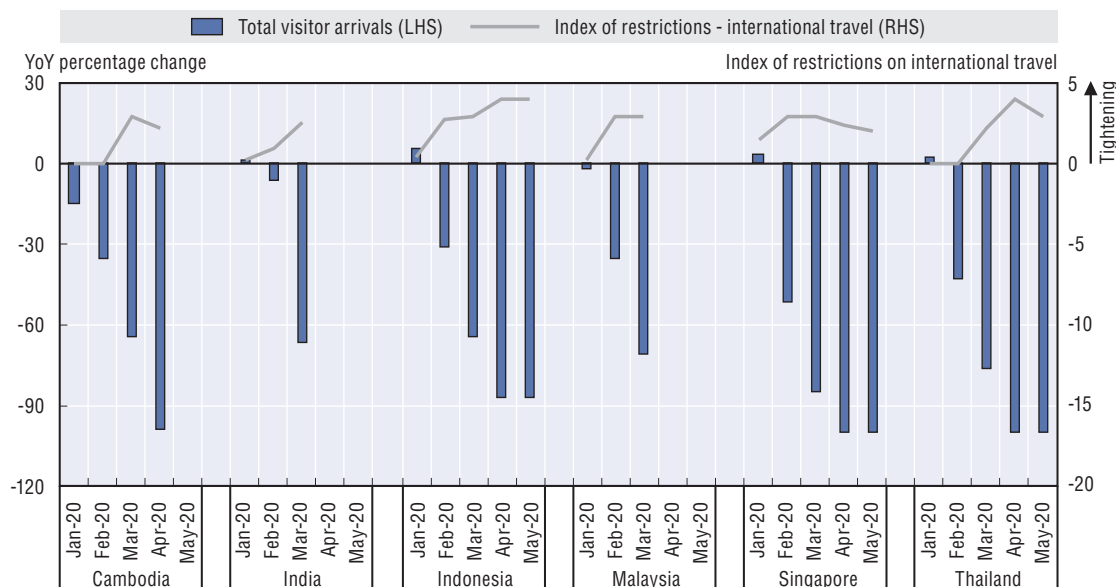
Note: The index of restrictions on international travel is defined on a scale between 0 and 4, as follows: 0) no measures; 1) screening; 2) quarantine for arrivals from high-risk regions; 3) ban on arrivals from some regions; 4) ban on all regions or total broader closure. The index is reported on a daily basis; the monthly value represents the average of daily values for the respective month.
Source: OECD Development Centre based on data from CEIC and Oxford COVID-19 Government Response Tracker.
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A subsector of tourism that has been heavily impacted by COVID-19 is meetings, incentives, conferences and exhibitions (MICE), which represents corporate or professional meetings held abroad, often in prime tourist destinations, including in Emerging Asia. These gatherings, which may mix business and leisure, are usually planned months or years in advance. As MICE events are typically large indoor gatherings and therefore present an elevated risk of viral transmission, the sector needs to adapt. This may involve caps on event sizes, increased use of remote conferencing and changes to activities and dining. MICE bookings will need to introduce flexible cancellation options due to the risk of future outbreaks of COVID-19 in destination or home countries.

Several Emerging Asian countries implemented fiscal packages to support workers in travel and tourism sectors during the period of restrictive measures. Policies are crucially needed to protect vulnerable workers, many of whom are informal workers lacking access to insurance or relief schemes. Worker compensation is also needed for the reduction in demand for services and guarantees of income in the event of illness.

With many national borders closed, countries including Indonesia, Malaysia and Thailand have sought to stimulate domestic tourism to keep tourism-related businesses operating and workers employed.

With public health conditions evolving rapidly, co-ordination among tourism officials, health officials and local authorities at domestic tourist destinations could be helpful towards developing and implementing a response to potential future outbreaks. Tourist attractions that draw dense crowds may become epicentres of infection, and containment measures must be swift. Contact tracing, including logging of visitors, will play a vital role, and safety measures like physical distancing and masks need to be in place. Ensuring that staff in tourist attractions are not sources of COVID-19 is also needed.

Countries scramble to update health policies to deal with the pandemic

The COVID-19 pandemic has shown the need for countries worldwide to update their health policies. Areas of focus include the development of tracing methods, the use of education to promote better hygiene and the need for more medical personnel and healthcare facilities. International co-operation is proving crucial in the effort to develop a vaccine, and countries in Emerging Asia are assisting each other to control the spread of the virus through donations of supplies.

Thorough contact tracing using epidemiological surveys and control measures is vital for containment. In an epidemiological survey, patients' previous whereabouts are ascertained via interview and electronic means (as necessary and if available). Based on this information, people exposed to an infected person may be required to self-quarantine and monitor symptoms. The mobile application aspect of this model has potential in most ASEAN countries, since all but Lao PDR have mobile penetration rates above the world average.

Data security is a concern in both contact tracing and general health information. Contact tracing applications rely on movement tracking, raising concerns over who has access to that information and other potential uses for it. Anonymising the data becomes difficult in sparsely populated areas or for people who have strict routines. Proximity-based analysis may also overestimate exposure risk. Phishing is a potential hazard, as malicious actors are able to make illegitimate copies of applications easily. Ensuring data security and privacy is crucial.

Promotion of personal hygiene is another critical aspect of controlling the spread of COVID-19. As the virus is primarily transmitted through droplets or transfer from surfaces, physical distancing, handwashing and coughing etiquette help to break the chain of transmission. Physical distancing may be enforced privately through voluntary co-operation or by businesses adjusting their operating procedures to prevent crowding, or via government order. Handwashing is also essential for suppressing transmission, but this remains challenging in areas where proper handwashing is not a common practice and where dwellings do not have clean running water. Providing information and education is therefore crucial, and soap or alcohol-based hand cleanser should be provided for those who do not have access.

Emerging Asia grapples with shortages of medical equipment and staff

Shortages of medical supplies and healthcare workers, which exist in most Emerging Asian countries, become particularly noticeable during a pandemic. The shortages include physical capital, such as medicine, equipment, care facilities and personal protective equipment (PPE) for healthcare workers and the general population, and human capital, including doctors, nurses, medical technologists and medical educators. Since the pandemic began, some countries have amended or expanded their government budgets

to purchase more supplies and equipment, while others received donations from foreign governments or private individuals.

Every ASEAN country has fewer hospital resources per capita than the OECD average. The number of doctors and nurses per unit population is below the OECD average in each country. Physical infrastructure also matters in the fight against COVID-19. The countries with fewer beds per capita also exhibit the highest COVID-19-related mortality rates in Emerging Asia (Figure 9).

Figure 9. **Hospital beds and COVID-19 mortality in selected Emerging Asian economies**
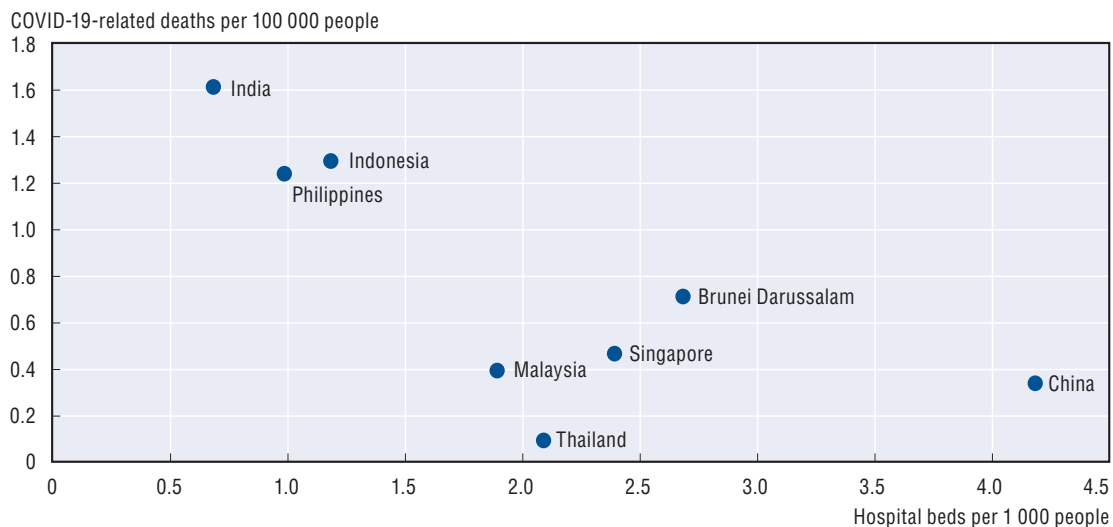
Note: Cumulative number of COVID-19-related deaths as of 10 July 2020.
Source: OECD Development Centre based on data from Johns Hopkins University and the World Bank World Development Indicators.
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ASEAN countries need to improve their medical systems. In the short term, existing resources could be mobilised. For instance, retired physicians and nurses could be recruited to ease the personnel shortage. Long-term efforts to improve the medical workforce should focus on education. Proper incentives are needed for students to complete the long educational process required to become a nurse or physician. Improving the quality of education at medical schools in the region is essential, and students who train abroad must be able to benefit from returning home. Starting and scaled wages should reflect training quality, and healthcare funds must be allocated to developing infrastructure and training staff to operate it.

Given the highly contagious nature of COVID-19, long-term hope for controlling the virus rests in a vaccine. International co-operation is currently taking place in research and development of vaccines. Along with this global effort, mass-production facilities must be prepared rapidly to ensure a smooth transition from approval of a vaccine to availability. Public health authorities should maintain a register of vulnerable persons who need the vaccine urgently. These include front-line healthcare workers, the elderly and people with pre-existing medical conditions.

Emerging Asia strengthens collaboration to fight the pandemic

Emerging Asian countries quickly recognised the need to strengthen collaboration and co-operation to combat the pandemic. Since the first COVID-19 cases were reported in

January, leaders in ASEAN and China, Japan and Korea have stepped up efforts to provide a collective response. Region-wide initiatives are being implemented to support national measures, in particular within the framework of ASEAN and ASEAN Plus Three (Table 2). The initiatives, particularly those related to the health sector, involve facilitating and maximising the use of existing forms of co-operation.

Table 2. **Examples of region-wide pandemic initiatives in ASEAN and ASEAN Plus Three**

Initiative	Programmes
Establish a COVID-19 ASEAN Response Fund	Supporting the provision of medical supplies and equipment and preventive efforts in all member states
Strengthen co-operation in public health	Exchanges of information and sharing of experience and best practices in research and development of vaccines and anti-viral medicines, in clinical treatment and in enhancing the capacity of public health systems and response to pandemics
Run an information platform among ASEAN Member State officials working at crisis centres and/or disease prevention and control	The ASEAN Emergency Operations Centre Network for public health emergencies runs a platform to share timely information, including on newly confirmed cases and national measures, through channels including social media platforms, WhatsApp, websites, etc.
Assess risks through the ASEAN BioDiaspora programme	Real-time web-based risk assessment tools linking multiple datasets, including air travel data, demography data, human population density, animal populations, industrialisation and utility distribution, vector locations and other relevant information
Strengthen scientific co-operation in epidemiological research	Strengthening scientific co-operation in epidemiological research including through the ASEAN+3 Field Epidemiology Training Network, co-ordination on rapid research, development, manufacturing and distribution of diagnostics, anti-viral medicines and vaccines, adhering to the objectives of efficiency, safety, equity, accessibility and affordability and actively sharing and leveraging digital technologies and innovation to promote a science-based response to combat COVID-19
Enhance co-operation in trade and investment	Reaffirming commitments to keep markets open for trade and investment, enhancing co-operation on food security among ASEAN+3 countries, such as the utilisation of the ASEAN Plus Three Emergency Rice Reserve, and strengthening the resilience and sustainability of regional supply chains, especially for essential goods such as food, commodities, medicine and medical supplies

Source: OECD Development Centre's compilation based on various official statements.

ASEAN has also organised ministerial meetings in response to the pandemic. On 19 February, ASEAN defence ministers met in Viet Nam and issued a joint statement on co-operation against COVID-19. In March, ASEAN ministers held a retreat in Viet Nam and agreed to take collective action to mitigate the economic impact of the pandemic, such as:

- keeping ASEAN markets open for trade and investment
- strengthening regional information sharing, co-ordination and collaboration in responding to economic challenges
- working closely with industries to encourage confidence in Southeast Asia as a trade and investment hub and tourism destination
- leveraging technologies and digital trade to allow businesses, especially MSMEs, to stay afloat amid the outbreak
- strengthening long-term supply-chain resilience and sustainability, in particular by implementing the Master Plan on ASEAN Connectivity 2025
- enhancing economic co-operation with external and development partners to include initiatives aimed at strengthening regional supply chains
- building on existing trade facilitating platforms, such as the ASEAN Single Window, to promote and support supply-chain connectivity
- refraining from actions that could create unnecessary inflationary pressures or adversely impact food security

- ensuring the availability of basic goods and commodities
- continuing to address non-tariff barriers, particularly those that impede the smooth flow of goods and services in supply chains.

More recently, the 36th Annual ASEAN Summit was held virtually on 26 June, presenting an opportunity for leaders of ASEAN Member States to reaffirm and flesh out their commitment to regional co-operation, especially in the context of COVID-19. Strengthening ASEAN health security was noted as a top priority and it was acknowledged that public health emergency responses must be co-ordinated not only within ASEAN, but also between ASEAN and its dialogue partners. Such efforts could take the form of collaborative scientific research, assistance in the development and procurement of vaccines and medicines, strengthening of medical and non-medical supply chains, as well as navigating a safe and robust economic recovery. The importance of improving synergy among regional frameworks, such as ASEAN Plus One, ASEAN Plus Three, East Asia Summit, was also stressed.

Region-wide initiatives tackle information sharing and risk assessment

In the health sphere, ASEAN ministers agreed to enhance the timely exchange and sharing of COVID-19 data and information, including prevention, detection, control and response measures, epidemiologic surveillance updates, risk assessment results, epidemiological and clinical studies on the virus and the disease, and technical guidelines, through existing ASEAN health sector co-operation mechanisms. They also agreed to strengthen co-operation in risk communication, to work together to prevent misinformation and fake news, and to maximise the use of digital technology for efficient exchange of information. Other areas of agreement included: co-ordination of public health responses such as contact tracing; enhanced co-operation in capacity building on public health emergency preparedness and response; and continued collaboration in learning from regional and national experiences.

Collective initiatives are also being implemented in the areas of risk assessment, readiness and response planning through the ASEAN BioDiaspora programme. As a real-time and web-based risk assessment tool, it links multiple datasets including air travel data, the demography data of ASEAN Member States, human population density, animal populations, industrialisation and utility distribution, vector locations, among others. The ASEAN BioDiaspora Regional Virtual Centre produces risk assessment reports pertaining to COVID-19, with highlights and a situational overview of the epidemic, a timeline of international dissemination, a public health outlook and the risk of importation through air travel. It also provides information on cases and fatalities related to COVID-19 and travel advisories among ASEAN Member States in response to the epidemic.

The Asia-Pacific Economic Co-operation (APEC) forum is also being used for collective initiatives on the pandemic. In May, the ministers responsible for trade in APEC economies issued a statement pledging to work together towards mitigating the health and economic impact of COVID-19. They committed: to facilitate the flow of goods and services across borders, including medicines, medical supplies and equipment, agricultural and food products, and other supplies; to minimise disruptions to global supply chains; and to work closely on identifying and resolving any unnecessary barriers to trade. Considering the importance of the digital economy amid the pandemic, the countries also stated their commitment to strengthen APEC's digital agenda, including e-commerce and related services.

Many of the initiatives aimed at enhancing co-operation at the regional level focus on exchanging information and sharing experiences and best practices among member countries. While this is crucial, other initiatives, such as financial co-operation, need to be strengthened. Collective responses that focus on the health sector are unquestionably necessary, yet the pandemic is also having a socio-economic impact on other sectors, including tourism, hospitality, financial markets, the banking sector and manufacturing. There is thus a need to broaden the coverage of region-wide initiatives. Countries will need to ensure that responses to both current and future outbreaks are timely and effectively co-ordinated. These responses should be longer-term and forward-looking to increase the region's resilience and better prepare for future pandemics.

Boosting education quality in Emerging Asia: Recommendations from PISA 2018

The spread of COVID-19 left many learners across the globe out of school, at least temporarily. While learning has continued in one way or another, the consequences of the school closures have been particularly damaging for vulnerable students. Unfortunately, vulnerable students tend to have fewer of the resources required for learning at home, such as: access to digital resources and a quiet place to study; motivated, supportive and highly skilled parents and teachers; and the ability to learn autonomously. While the full consequences of the school closures cannot yet be evaluated, the results of the Programme for International Student Assessment (PISA) 2018 can provide a valuable reference point for education systems.

Some education systems in Emerging Asia have a long tradition of participating in the PISA assessments, while others only started participating in 2018. All countries and economies in PISA participate in the reading, mathematics, and science assessments. In addition, PISA offers the possibility of assessing financial literacy, and each cycle explores a new "innovative domain" such as problem solving (PISA 2012), collaborative problem solving (PISA 2015) and global competence (PISA 2018). In PISA 2018, Brunei Darussalam, Indonesia, the Philippines, Singapore and Thailand took part in the global competence assessment, and only Indonesia evaluated financial literacy.

All countries and economies in PISA 2018 distributed the student and school questionnaires. PISA 2018 also offered: four optional questionnaires for students (on educational career, ICT familiarity, well-being and financial literacy); an optional questionnaire for parents; and an optional questionnaire for teachers (both for reading teachers and for teachers of all other subjects). In the region, Brunei Darussalam and Thailand distributed the educational career questionnaire; Brunei Darussalam, Singapore and Thailand distributed the ICT questionnaire; and Malaysia distributed the teacher questionnaire.

Performance in reading, mathematics and science

Indicators of math, reading and science performance place most of the education systems in Southeast Asia clearly below the OECD average and the average of neighbouring economies such as Beijing, Shanghai, Jiangsu and Zhejiang (B-S-J-Z) (China) and Chinese Taipei (Figure 10).

Figure 10. **Performance in reading, mathematics and science**
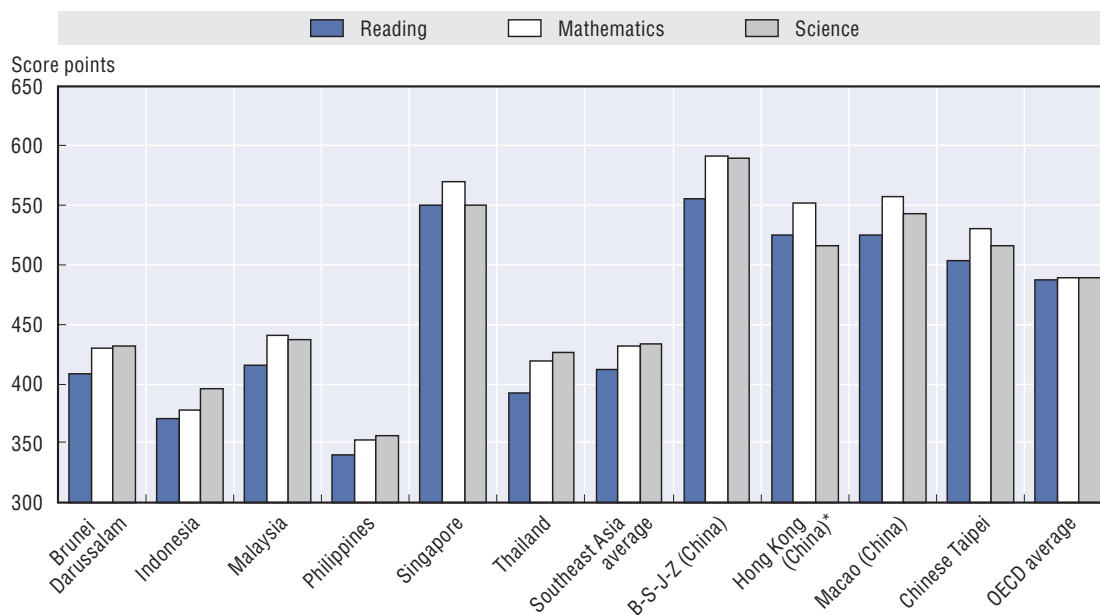
Note: * PISA 2018 data did not meet the PISA technical standards but were accepted as largely comparable.
Source: OECD, *PISA 2018 Database*, Tables I.B1.4, I.B1.5 and I.B1.6.
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However, Southeast Asia's average hides wide differences among school systems. With average scores at least half a standard deviation above the OECD average, Singapore was one of the top-performing school systems in PISA 2018. Malaysia was the second highest-performing country in the region, followed closely by Brunei Darussalam and Thailand, and then by Indonesia and the Philippines.

As in previous cycles, the reading scale for PISA 2018 was divided into a range of proficiency levels whose descriptors were updated to reflect new aspects of reading that were assessed for the first time, such as assessing the quality and credibility of information and managing conflict among texts. Approximately 47% of students across Southeast Asia scored above the baseline level of proficiency in reading, ranging from 19% of students in the Philippines to 89% in Singapore. In comparison, 77% of students on average scored above the baseline level across OECD countries, 82% in Chinese Taipei and 95% in B-S-J-Z (China). Better results were observed for mathematics and science, where 50% and 54% of students, respectively, scored above the baseline level of proficiency across Southeast Asian economies.

Students' performance in mathematics and science is particularly important in the context of digitalisation and ICT-related training and studies. Demand for ICT skills is growing in the region, and those who have these skills are earning higher wages. Good performance in science, technology, engineering and mathematics (STEM) will therefore be needed in Emerging Asian countries to ensure their ability to integrate the global economy, especially in the digital era.

Trends in performance, gender differences and the socio-economic divide

Indonesia has seen no significant long-term changes in students' performance in reading, mathematics and science. In reading, Indonesia belongs to the group of countries with a hump-shaped trajectory, with performance improving during the first years since inception of its participation in the PISA assessments, and becoming more negative in more recent years. Malaysia has significantly improved in mathematics and science

throughout its participation in PISA, but has shown no significant change in reading. Since Thailand's first participation in PISA, mathematics and science performance have remained stable, while the average reading performance has dipped. In reading, Thailand is in the group of countries with an increasingly negative trajectory, together with Korea and the Netherlands. Singapore, already a top-performing education system when it first participated, has improved its performance in reading and science even further.

In terms of gender differences, PISA results in recent decades have consistently found on average that girls outperform boys in reading and, to a lesser extent, that boys outperform girls in mathematics, across all participating countries and economies. Gender disparities in achievement are a matter of considerable concern, as they may have long-term consequences for girls' and boys' personal and professional future.

On average across Emerging Asian countries, the gender gap in reading performance, where girls outperform boys, was 28 score points, similar to the gender gap across OECD countries (30 score points). The gender gap in reading performance varied little among Southeast Asian countries (between 23 and 30 score points), except in Thailand where it stood at 39 score points. Interestingly, one of the narrowest gender gaps in reading performance across all PISA-participating countries and economies was observed in B-S-J-Z (China), where girls outperformed boys by only 13 points.

Long-standing research finds that the most reliable predictor of a child's future success at school – and, in many cases, of access to well-paid and high-status occupations – is his or her family. However, results from previous rounds of PISA suggest that school systems may be able to help mitigate the impact of families' socio-economic status on their child's life outcomes.

PISA consistently finds that some education systems manage to attain both academic excellence and equity. Among the 25 school systems that scored above the OECD average in reading, about half exhibited positive equity outcomes, including those in Australia, Canada, Estonia, Finland, Japan, Korea, Norway and the United Kingdom. Unfortunately, no education system in Southeast Asia attains both academic excellence and equity, and some (Brunei Darussalam, Malaysia and the Philippines) scored in the least desirable quadrant, where both academic performance and equity are below the OECD average.

PISA 2018 measured the allocation of material and human resources to schools by asking school principals the extent to which their capacity to provide instruction in their schools was hindered by a lack or insufficient quantity of the following resources: education staff, assisting staff, educational material and physical infrastructure. Both "shortage of educational material" and "education staff" were constructed based on school principals' responses to this question. The socio-economic gaps in these indices suggest that some school systems in Southeast Asia could better compensate disadvantaged schools (Figure 11). For instance, Thailand, the Philippines and, to a lesser extent, Indonesia were among education systems in PISA 2018 with the largest gaps between advantaged and disadvantaged schools in both material and human resources. By contrast, in Brunei Darussalam, the socio-economic gap in these resources was just above the average gap among OECD countries. Malaysia, Singapore and Viet Nam exhibited a socio-economic gap only in material resources.

Figure 11. **Difference in shortage of educational material and staff,
by schools' socio-economic profile**

Results based on principals' reports
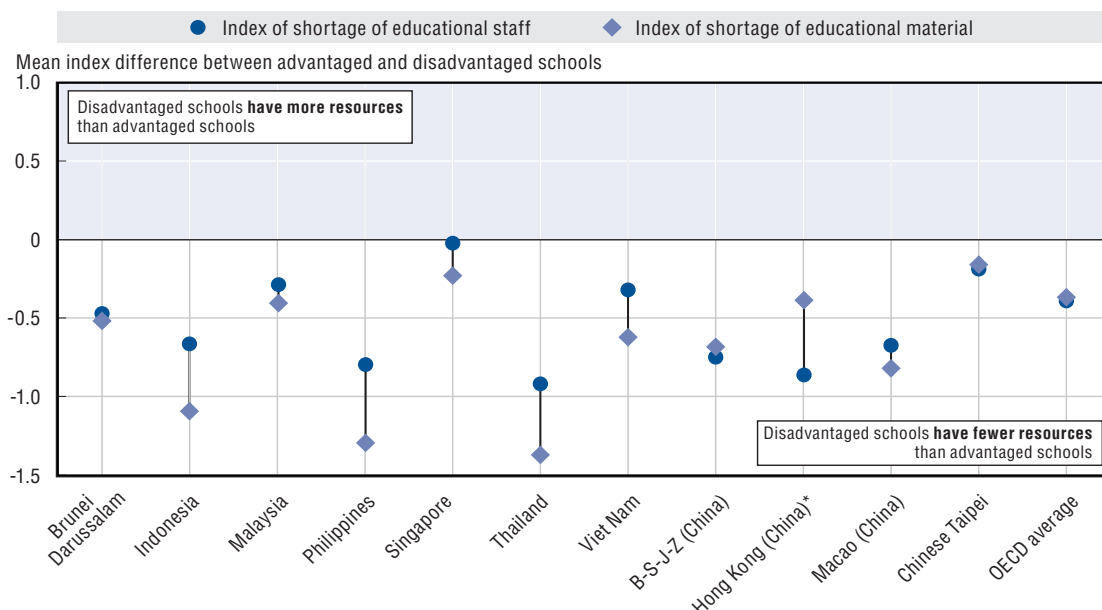
Notes: * PISA 2018 data did not meet the PISA technical standards but were accepted as largely comparable. Statistically significant differences are shown in a darker tone. The socio-economic profile is measured by the school's average PISA index of economic, social and cultural status (ESCS). For this analysis, the sample is restricted to schools with the modal ISCED level for 15-year-old students.

Source: OECD, *PISA 2018 Database*, Tables II.B1.5.13 and II.B1.5.14.

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The climate at schools and student well-being

PISA asked students how often during the 12 months prior to the PISA test they had experienced physical, verbal or relational bullying, such as someone making fun of them, getting pushed around or hit by other students, or being left out on purpose. Combining these statements into a single indicator, "any type of bullying act", shows that students in all Southeast Asian countries were more frequently victimised on average than students across OECD countries or in B-S-J-Z (China). The results for Brunei Darussalam and the Philippines are particularly alarming, with more than half of students saying that they had been bullied at least a few times a month. Almost as troubling were the results in Indonesia and Malaysia, where 41% and 36% of students, respectively, reported being bullied at least a few times a month. In comparison, the equivalent shares among OECD countries, B-S-J-Z (China) and Chinese Taipei were 23%, 18% and 13%, respectively.

The results are more encouraging in the region regarding the disciplinary climate in language-of-instruction lessons, except maybe in the Philippines. The findings on student truancy are also encouraging for Southeast Asia. On average across countries in the region, 19% of students reported having skipped a whole day of school, compared to 21% of students on average among OECD countries, but only 1% of students in B-S-J-Z (China). There are large variations across countries: student truancy was comparatively low in Brunei Darussalam, Malaysia, Singapore and Viet Nam; similar to the OECD average in Indonesia; and comparatively high in Thailand and, to a lesser extent, in the Philippines.

Overall, students in the Southeast Asian countries reported satisfactory levels of well-being, though with large variations across the region (Figure 12). On average, about 65% of

students in the region reported being satisfied with their lives (7-10 in the life-satisfaction scale), compared to 67% across OECD countries and 59% in B-S-J-Z (China). However, in Brunei Darussalam, only 42% were satisfied with their lives, the lowest percentage across all PISA-participating countries and economies. About 92% of students on average across Southeast Asian countries said they were sometimes or always happy – from 85% in Viet Nam to 95% in the Philippines – compared to 91% of students across OECD countries. A larger share of students in the region fear the consequences of failing than on average across OECD countries. This is especially the case in Brunei Darussalam, Malaysia and Singapore. For instance, 73% of students in Singapore were afraid that failing might signal a lack of talent, compared to 55% across OECD countries and 53% in B-S-J-Z (China).

Figure 12. **Students' well-being**
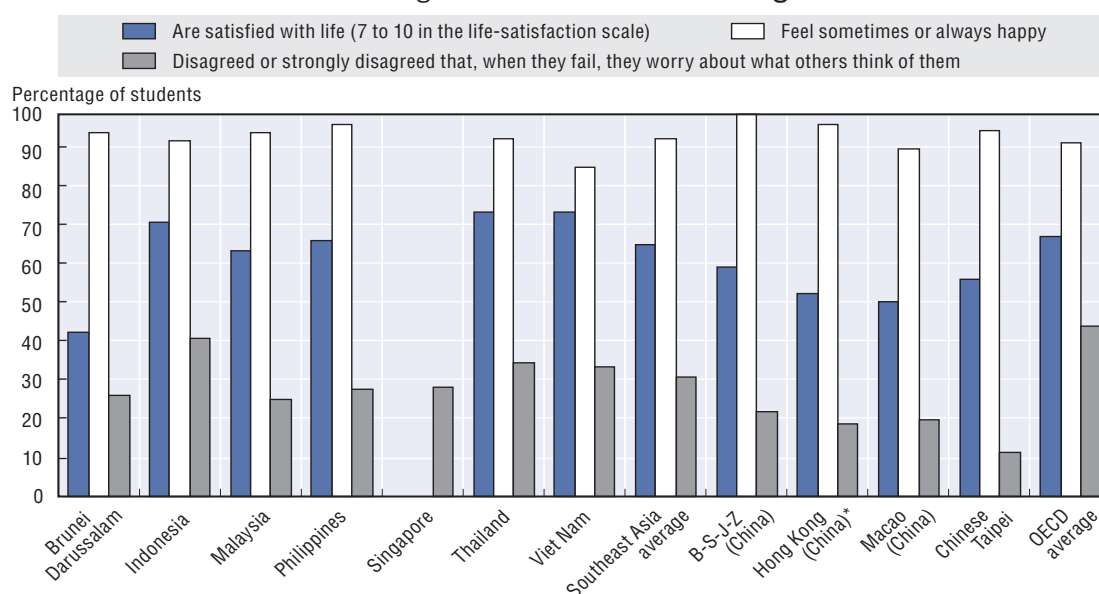
Note: * PISA 2018 data did not meet the PISA technical standards but were accepted as largely comparable.
Source: OECD, *PISA 2018 Database*, Tables III.B1.11.1, III.B1.12.1 and III.B1.13.2.
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Teaching strategies and policy recommendations

Compared to students in the OECD, students across Southeast Asian countries reported on average that teachers in their language-of-instruction employed teacher-directed instruction more frequently and provided somewhat more support. By contrast, on average, teachers in the region used adaptive instruction and stimulated reading engagement less frequently than teachers did across OECD countries, at least according to students' reports. All education systems in the region share a comparatively high frequency of teacher-directed instruction and low frequency of adaptive instruction, except for Singapore. In the region, according to students' reports, teacher support was relatively most common in Malaysia; teacher feedback and adaptive instruction were most frequent in Singapore; teacher enthusiasm was most frequently observed in Brunei Darussalam; teacher-directed instruction was most common in Indonesia; and stimulation of reading engagement was most frequent in Thailand.

Providing one-size-fits-all recommendations for such a diverse region as Southeast Asia can be challenging or even counterproductive. For example, as one of the top-performers in PISA since its first participation in 2009, the Singaporean education system

has been an inspiration for other education systems worldwide, even if its equity outcomes in education could still be improved.

Other than learning from neighbouring countries, general recommendations for Southeast Asian school systems include: i) further improving access to education without sacrificing the quality of the school system; ii) making learning time more productive by building a skilled and dedicated teacher workforce and encouraging teachers to use multiple teaching strategies and types of assessment; iii) addressing gender differences in students' participation in training and studies; iv) creating a positive learning environment; v) investing greater resources in the school system; and vi) allocating resources more equitably among schools.