# 2 Responding to the skills implications of megatrends and COVID-19 in Southeast Asia

Megatrends in the form of globalisation, technological progress, demographic changes, migration and climate change, as well as unforeseen shocks, such as the COVID-19 crisis, are affecting the skills people need to face uncertainty and navigate a complex world. People who are equipped with a broad set of skills that are relevant to the needs of work and life can turn challenges into opportunities and help shape the world for the better. This chapter examines the implications of globalisation, technological progress, demographic changes, migration, climate change and the COVID-19 crisis for the skills systems of Southeast Asia.

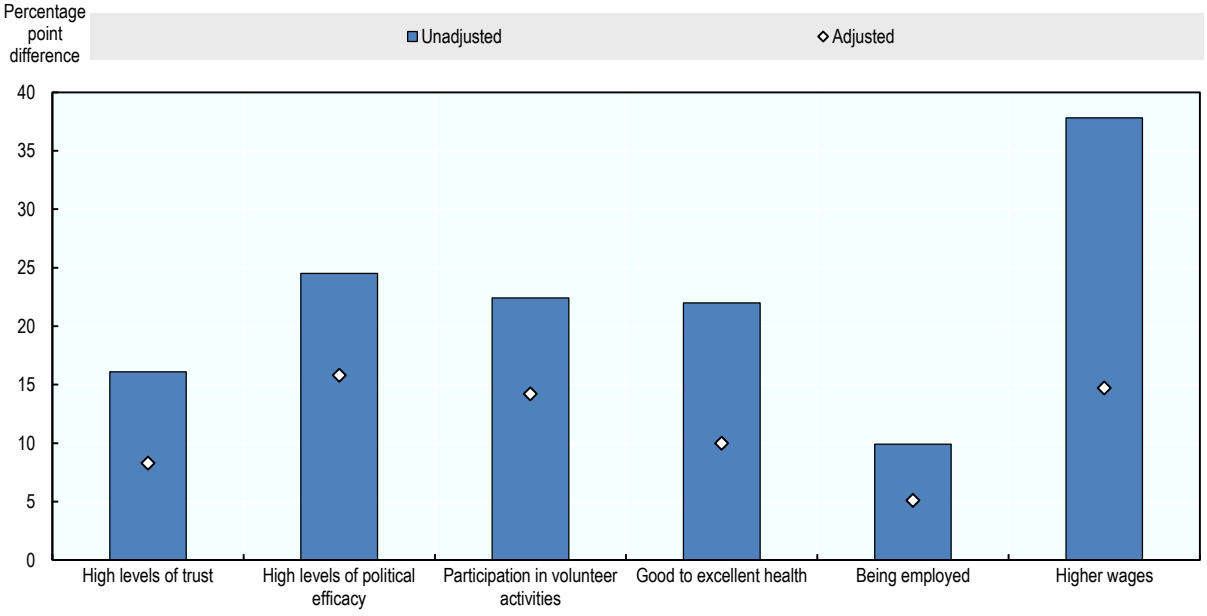
## The world is changing rapidly, transforming the skills needed for success for today and tomorrow

Southeast Asian countries, like other countries in other regions, are facing a rapidly changing world. Megatrends – globalisation, technological progress, demographic changes, migration and climate change – as well as unforeseen shocks, such as the coronavirus (COVID-19) pandemic, affect how people work, how people obtain skills and how people interact. They transform the nature of jobs and change skills needed to thrive at work and in society. They disrupt labour markets in Southeast Asia and displace workers in some sectors while spurring demand for new and/or more high-level skills. Due to the rapid pace of change and uncertainty, individuals need to develop new skills and continue to reskill and upskill throughout life and use them effectively.

Developing the right skills and using them effectively is central to the success of individuals and societies. When individuals are more highly skilled, they tend to have higher chances of being employed and, if employed, earn higher wages (Figure 2.1). Similarly, more highly skilled individuals are more likely to have higher levels of trust, participate more actively in the democratic process and community life and enjoy better health (OECD, 2016[1]). In addition, a more highly and equitably skilled population supports sustainable economic growth and promotes cohesion in society.

### Figure 2.1. Literacy proficiency and positive economic and social outcomes

OECD average, adjusted and unadjusted difference between the percentage of adults with high proficiency (Level 4 or 5) and the percentage of adults with low proficiency (Level 1 or below) who reported high levels of trust and political efficacy, good to excellent




Note: All differences are statistically significant. Adjusted differences are based on a regression model and take account of differences associated with the following variables: age, gender, education, immigrant and language background and parents' educational attainment.
How to read this figure: Higher proficiency in literacy is associated with a greater likelihood of engaging in voluntary work. On average, the chances of participating in volunteer activities are 22 percentage points higher among people who scored 4 or 5 than those who scored at or below Level 1 in literacy. The relationship remains strong even after accounting for socio-demographic characteristics.
Source: Adapted from OECD (2018[2]), *Survey of Adults Skills database (PIAAC) (2012, 2015)*, www.oecd.org/skills/piaac/.

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This chapter explores the skills implications of megatrends and the COVID-19 crisis in Southeast Asian countries. The following sections examine, in turn, the implications of globalisation, technological progress, demographic changes, migration, climate change and the COVID-19 pandemic. Each section presents a set of indicators of how megatrends and COVID-19 affect Southeast Asian countries and examines their skills implications.

## Megatrends

### *Globalisation*

In today's world, firms are increasingly organising their production globally. Trade liberalisation, lower transportation costs, and information and communication technologies have enabled global value chains (GVCs) that allow different parts of the production processes to be performed in different geographical locations (OECD, 2019[3]). This process can increase demand for certain skills while decreasing demand for others as new economic activities are introduced and others are offshored. In the long term, globalisation could bring productivity gains to participating countries, but potential gains are dependent on skills available in countries (OECD, 2017[4]).

Southeast Asia countries also actively participate in GVCs. Many Southeast Asian countries are now major players in the world market, both as exporters and importers. As a share of gross domestic product (GDP), international trade has risen across Southeast Asian countries in recent decades (Figure 2.2). The major trading partners of Southeast Asian countries include the People's Republic of China (hereafter "China"), the European Union, Japan, Korea and the United States. Intra-regional trade is also substantial, with Singapore and Malaysia being particularly important regional trading partners (World Bank, 2019[5]). While in some Southeast Asian countries, GVC investments in manufacturing are concentrated in labour-intensive and low-skilled sectors, such as garment production, in other Southeast Asian countries, such investments are increasingly in high-tech sectors, such as automotive and electronics production.

Southeast Asia's participation in GVCs has been supported by a rise in free trade agreements (FTAs) and foreign direct investment (FDI). As Southeast Asian countries sign FTAs individually or collectively, they benefit from reduced costs for importing and exporting, improved customs clearances and higher tax deductions. FTAs make it easier for multinationals to engage local firms as part of their GVCs, which raises the demand for local skills. In January 2022, the Regional Comprehensive Economic Partnership (RCEP) entered into force, bringing together the Association of Southeast Asian Nations (ASEAN) member states and Australia, China, Japan, Korea and New Zealand. It is the largest free trade area in the world, covering 2.3 billion people (30% of the global population) and accounts for USD 12.7 trillion (25%) of global trade in goods and services (European Parliament, 2021[6]).

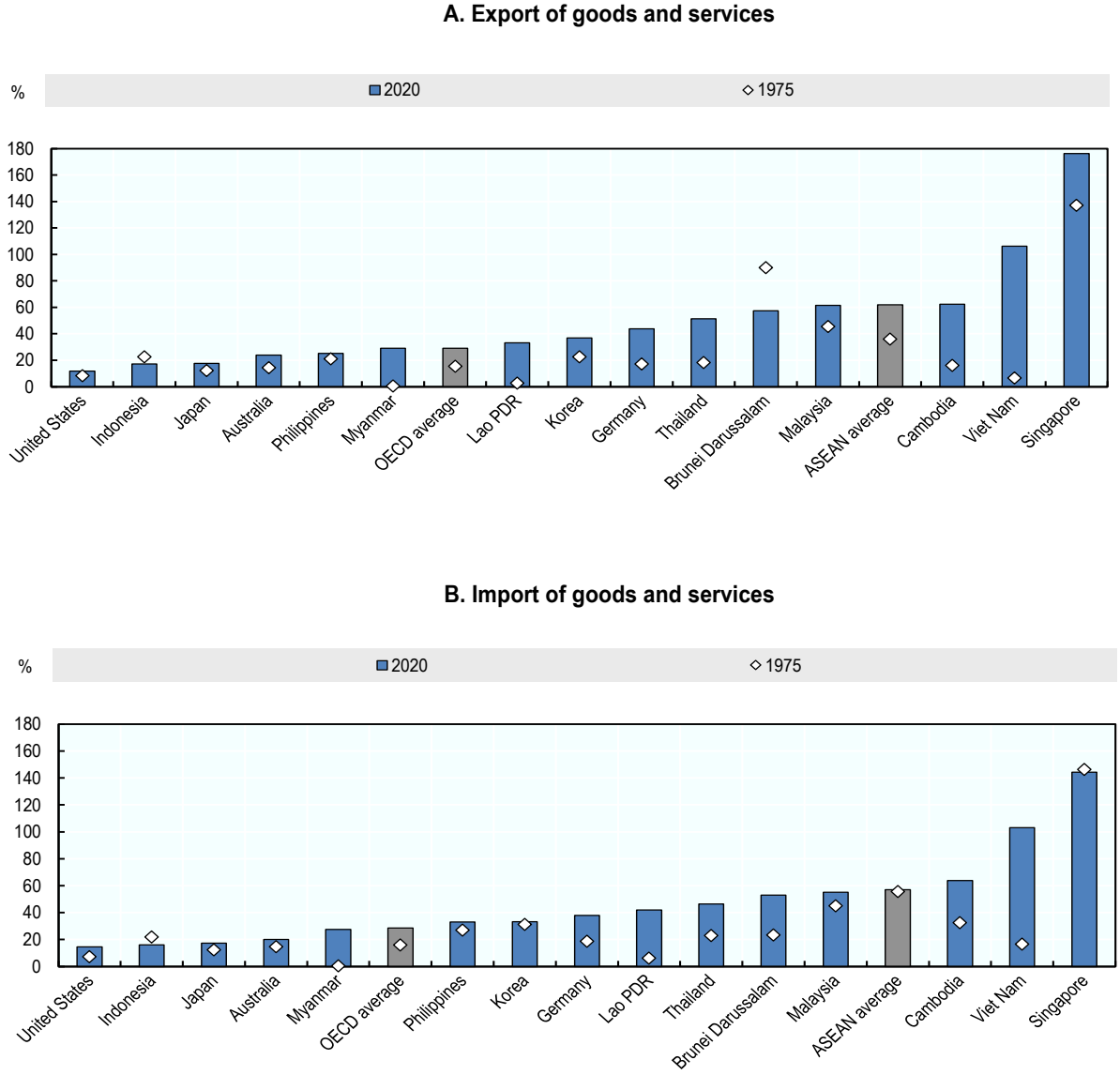
Similarly, in Southeast Asian countries, FDI, which for example, refers to a multinational firm gaining controlling ownership of a local firm, is often accompanied by a transfer of technology to the local firm and can lead to beneficial spillover effects (e.g. transfer of know-how, management approaches, marketing strategies) (OECD, 2019[7]; Andrenelli et al., 2019[8]). FDI may thus increase skills use and overall productivity in local firms, while an increased level of skills and relatively low costs of those skills in local firms helps attract even more FDI (Blomström and Kokko, 2003[9]). FDI inflows into Southeast Asia increased in 2019 to an all-time level of USD 182 billion, representing 11.9% of global FDI (ASEAN Secretariat and UNCTAD, 2019[10]; 2021[11]).

However, the future of Southeast Asia's participation in GVCs is uncertain. On the one hand, as some emerging economies, most notably China, move up GVCs, the internationalisation of production could expand to other countries, especially in Southeast Asia (OECD, 2017[4]). Moreover, the recent United States-China trade war starting in 2018 has incentivised Chinese exporters and suppliers to the United States to find production locations in Southeast Asia, such as Thailand and Viet Nam, to avoid tariffs, which could boost economic activity and demand for skills in the region (Lauria, 2019[12]). On the

other hand, other analyses argue that given how Southeast Asian countries have historically been susceptible to shocks in Asia-Pacific trade, the consequences of an ongoing trade war could lead to overall GVC activity decreases in the region (Coxhead, 2022[13]).

## Figure 2.2. International trade of goods and services, 1975 and 2020

Percentage of GDP




Note: Due to a lack of data in both figures, a different baseline year was used for Lao PDR (1974), Viet Nam (1986 for imports), Cambodia (1993) and Myanmar (2000), while different end-line years were used for Lao PDR (2016), Japan (2019), OECD average (2019) and United States (2019).
Source: World Bank (2021[14]), *World Development Indicators*, https://databank.worldbank.org/source/world-development-indicators.

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The COVID-19 pandemic added to the uncertainty through significant disruptions in GVCs. The pandemic and preventive measures, such as lockdowns and limits on the mobility of people, have significantly

disrupted GVCs around the world by, for example, reducing available air cargo and containers and increasing the time and cost of trade processes, such as the unloading of shipments and physical inspection of goods (OECD, 2020[15]; UN, 2021[16]). The prolonged supply chain disruptions from COVID-19 may encourage multinational firms to consider reshoring some or all of their production from Southeast Asia to their home countries to reduce the risks of such events. These changes could lessen the skills demand in Southeast Asian countries.

#### *Skills implications of globalisation*

**Southeast Asian countries' position in GVCs depends on their available skills**. When Southeast Asian countries have a highly skilled workforce, this enables them to participate in the higher end of the global production chain, characterised by high-skilled activities (Chor, 2010[17]). Such high-skilled activities could, for example, be in technologically advanced manufacturing industries and sophisticated business services. To move towards the higher end of GVCs, Southeast Asian countries have been investing heavily in raising the education level of their populations, which has led to an overall rise in tertiary attainment levels. However, it is also important that the skills acquired in such education programmes align well with evolving labour market needs. Such alignment can be supported through high-quality vocational and professional education and training that includes a strong work-based learning component and policies that foster closer collaboration between employers, tertiary education institutions and research institutions (OECD, 2017[4]).

**Southeast Asian countries' performance in GVCs depends on how well their skills are being used**. Skills can enable countries to perform well within GVCs, but only if people work in firms and industries that are a good match and make the best use of their skills. Southeast Asian countries need to ensure that people are well matched to their jobs by providing career guidance services, developing comprehensive skills assessments, and promoting qualifications that reliably reflect individuals' skills. As the skills demands of firms in GVCs continuously evolve, workers also need to be able to move easily between jobs and careers. Countries can design employment protection legislation and regulate non-compete clauses that balance the flexibility and security of workers (OECD, 2017[4]). Firms in Southeast Asia, in particular small- and medium-sized enterprises (SMEs), should be provided with targeted management training to introduce effective management and workplace practices that make the best use of workers' skills and support workers in adapting to the procedures and processes of multinational companies.

**Skills policies can address the potential negative impacts of participation in GVCs**. As Southeast Asian countries move up GVCs over time, this could mean that lower-end production processes pursued until then could be relocated elsewhere. While such transitions can create higher skills demands, they could lead to job losses for some workers in the short term. Workers at risk of such displacement are often individuals with lower education levels, older individuals and individuals performing routine intensive tasks (OECD, 2017[4]). It is thus critical to provide such individuals with sufficient opportunities to continuously develop their skills, so that they can evolve with the changing skills requirements of their jobs or transition to new jobs at the higher end of GVCs. Participation in such skills development opportunities can be facilitated through subsidising or completely covering the cost of participating in such programmes and guiding such individuals in identifying the programmes most suitable for them.

### *Technological progress*

Like the impact of globalisation, the way individuals learn, work, communicate and consume is also being transformed by advances in technological progress. New technologies, such as artificial intelligence (AI), automation, robotics and machine learning, bring numerous opportunities and new challenges. While technological advances help workers improve their productivity and create new job opportunities, they are also changing the types of skills required in the labour market. As governments go digital to improve the effectiveness and efficiency of services, people also need increasingly digital skills to access basic public

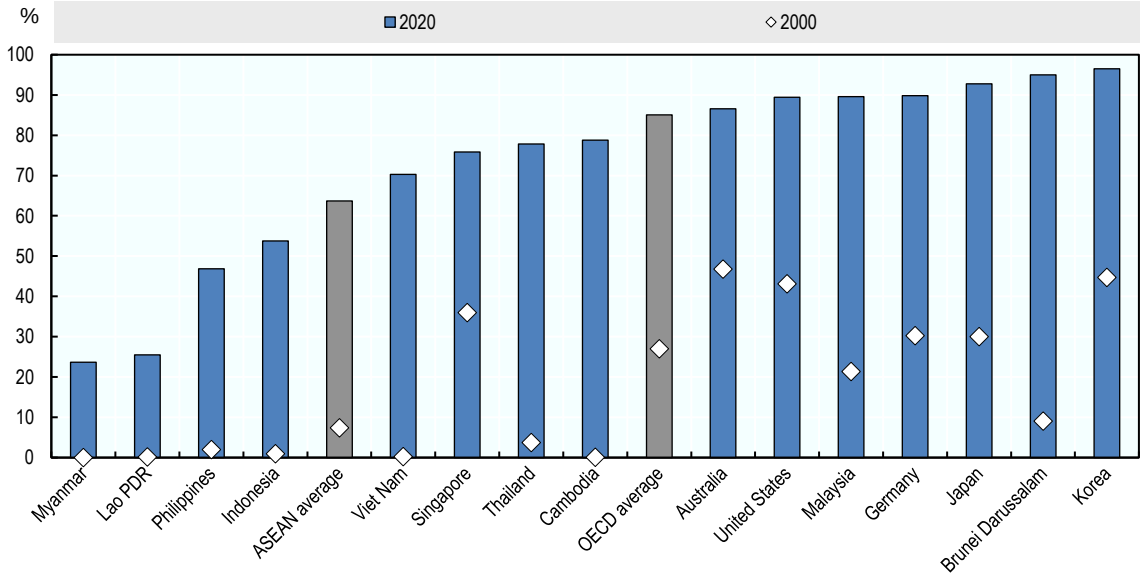
services. This transition creates demand for new sets of skills, such as those for non-routine tasks and digital skills, while making certain sets of skills obsolete, such as those for routine tasks (OECD, 2019[18]). Individuals, firms and countries that can harness this new wave of technological progress stand to benefit greatly, as it enriches lives, boosts productivity and makes learning easier (OECD, 2019[18]). However, those who fail to harness such changes may be left behind, resulting in widened inequalities.

New technologies are spreading rapidly throughout Southeast Asian countries. Many Southeast Asian countries attract new technologies to accelerate industrialisation and economic development. The region is projected to be one of the world's fastest-growing data centre markets in the next few years, exceeding the growth in North America and the rest of Asia-Pacific (ASEAN Secretariat and UNCTAD, 2019[10]). The market for AI in ASEAN countries is expected to grow at about 8% per year from 2019 and reach USD 5 billion by 2025 (ASEAN Secretariat and UNCTAD, 2021[11]). The use of industrial robots used to be confined to manual tasks but are now increasingly used for cognitive tasks, including in Southeast Asia (ADB, 2019[19]), being used in the automotive, electronics and metal and machinery industries (ASEAN Secretariat and UNCTAD, 2021[11]).

The COVID-19 pandemic has accelerated the shift towards digitalisation and the adoption of new technologies and platforms in Southeast Asia. The adoption of new digital solutions and the use of digital skills had already been on the rise before the pandemic (Figure 2.3), but it has increased rapidly since then. The fear of the spread of the virus and the implementation of social-distancing measures have made online interactions at work and in everyday life more common. In 2020 alone, 40 million new Internet users were added, bringing the region's online population to 400 million (63.7%) (Figure 2.3). In a survey recently conducted in Southeast Asia by EY, only 15% of respondents would prefer to work from the office full time, 32% would prefer to work anywhere, 29% would prefer to work remotely full time, and 23% would prefer to work in a hybrid work arrangement (i.e. mix of in-office and remote working) (EY Indonesia, 2021[20]).

## Figure 2.3. Connectivity among individuals in Southeast Asia and selected OECD countries, 2000 and 2020

Individuals using the internet (% of population)




Note: Due to lack of data, the latest available year was used for the following countries: Myanmar (2001); Australia, Lao PDR, Myanmar (2017); Brunei Darussalam, Japan, OECD countries, the Philippines and the United States (2019).
Source: World Bank (2021[14]), *World Development Indicators*, https://databank.worldbank.org/source/world-development-indicators.

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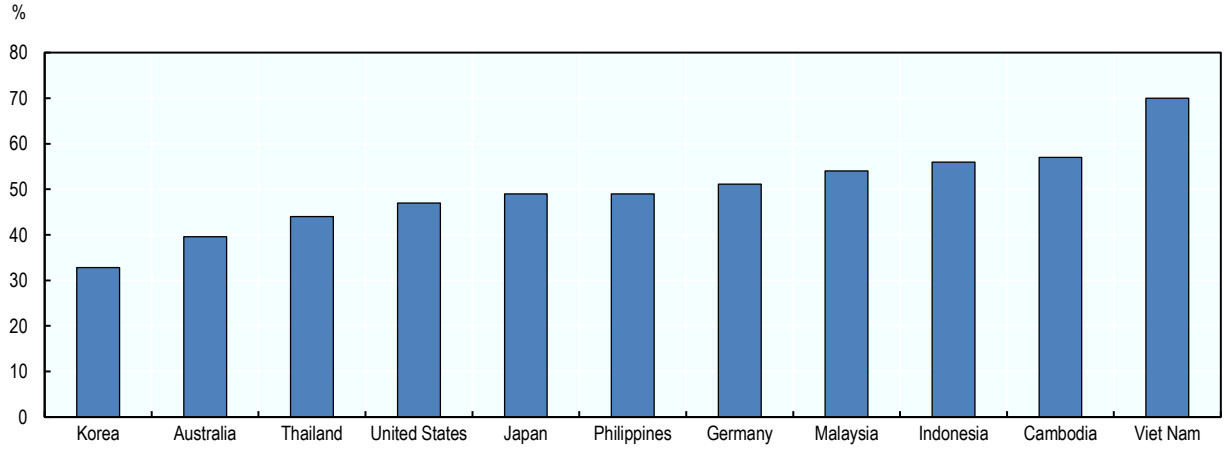
Compared to OECD countries, Southeast Asian countries have a greater share of jobs at risk of automation or significant change. The share of jobs at risk of automation or significant change is particularly high in Viet Nam (70%), followed by Cambodia (57%) and Indonesia (56%) (Figure 2.4). The sectors that are most highly affected by automation include manufacturing, construction, wholesale, retail, hotels and restaurants. Examples of impacted occupations include sewing machine operators in Cambodia and Viet Nam, food service attendants in Thailand, shop assistants in the Philippines and office clerk workers in Indonesia (ILO, 2016[21]). The probability of being affected by automation is higher among low-skilled workers, women and workers in low-wage occupations, which may further increase disparities in the labour market.

## Figure 2.4. Share of jobs at risk of automation or with a probability of significant change in Southeast Asia and selected OECD countries, 2017




Note: The bars represent occupation-based estimates for the risk of automation, based on (Frey and Osborne, 2017[22]).
Source: OECD (2020[23]), *OECD Economic Surveys: Thailand: Economic Assessment*, https://doi.org/10.1787/ad2e50fa-en.

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However, the long-term repercussions of technological progress are uncertain. Many factors could limit technology adoption, depending on the relative price of, and attitudes towards, technology (Nedelkoska and Quintini, 2018[24]). While certain jobs may disappear, others will emerge. A sharp decline in overall employment is unlikely (OECD, 2019[7]). Job automation could also bring large benefits to the economy. For example, it can help achieve higher productivity, create new job opportunities, and improve working conditions as certain hazardous jobs can be automated. A study suggests that enhanced connectivity and application of technology are expected to generate about USD 150 billion in additional revenue potential across key industries (i.e. agriculture, services and manufacturing) for ASEAN countries by 2025, which could lead to substantial job creation in such industries (ASEAN Secretariat and UNCTAD, 2019[10]). Furthermore, technological progress could also help overcome labour shortages in the face of an ageing population (OECD, 2020[23]). The extent to which Southeast Asian countries can benefit from technological progress will depend on their skills policies.

### *Skills implications of technological progress*

**Skills allow workers to adapt to changing labour markets due to technological progress**. In order for workers in Southeast Asia to thrive in a world undergoing rapid technological change, they will need not only digital skills but a broad mix of skills, including transferrable cognitive skills (e.g. problem solving) and socio-emotional skills (e.g. communication, teamwork) (OECD, 2019[18]). Additionally, critical thinking

skills are equally important to develop, as they would allow individuals to make informed decisions about vast amounts of information in an increasingly digital world of work (Cunningham et al., 2022[25]). Skills development opportunities that focus on developing these skills are essential to allow workers to transition from jobs at high risk of being automated to new and higher-quality jobs, including those higher up the GVC (as discussed above). As labour markets evolve in response to technological progress, governments in Southeast Asia need to find the right balance between policies that support labour market flexibility enabling transitions across jobs and those that support job stability protecting vulnerable workers who cannot easily transition across jobs.

**Furthermore, skills play an important role in bridging the digital divide**. Due to technological progress, there is an increasing trend of job polarisation. On the one hand, individuals who are more highly skilled are increasingly more in demand, as they can benefit more from the changes brought about by technological progress, with their skills (e.g. skills for non-routine tasks) being complementary to technology. On the other hand, individuals with lower levels of skills are more likely to work in jobs at risk of automation, are less likely to be able to adapt to new technologies and working practices, and have fewer opportunities to acquire the necessary skills (OECD, 2019[3]). Similarly, many SMEs in Southeast Asia struggle to adopt and use digital tools compared with larger companies (ERIA, 2020[26]). Skills policies targeting individuals with lower skill levels and those working in SMEs can ensure that all individuals are able to benefit from technological progress.

**Technological progress can lead to a higher sense of well-being if individuals possess the relevant skills**. Digital skills allow individuals to benefit from new technologies in spending their leisure time, finding information, participating in political processes, buying goods and services, interacting with others and learning. All these activities can lead to a higher sense of well-being. A good level of cognitive and socio-emotional skills increases individuals' likelihood of protecting their privacy and security on line, navigating effectively through online platforms and knowing how to interpret information from online sources (OECD, 2019[18]). Without such skills, individuals could be more likely to be exposed to online bullying and harassment or become trapped in digital echo chambers. The level of skills individuals possess directly impacts the extent of such activities and their well-being outcomes (Scheerder, van Deursen and van Dijk, 2017[27]).

### *Demographic changes*

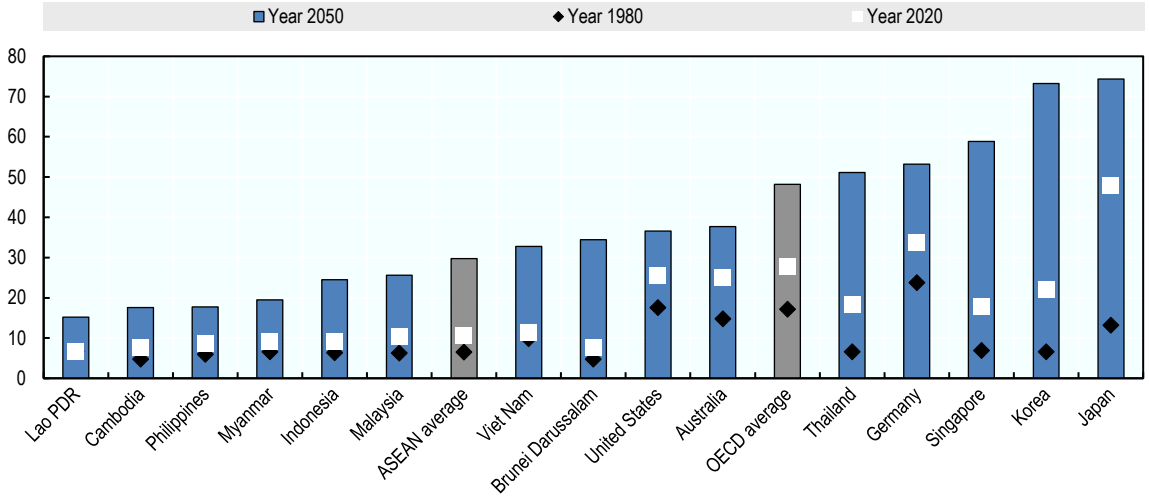
While technological progress is about changes of the context people live in, demographic changes are about the age-related changes of the people themselves. Demographic changes result from declining fertility rates and increasing life expectancy. Older people tend to have lower employment rates than younger people, so an ageing society means that the total size of the labour force is decreasing. To maintain or grow an economy further, a smaller labour force needs to be offset by an increase in productivity. Therefore, in countries with ageing populations, it will be even more important to invest in the skills of both the current and future workforce, especially in skills that promote productivity and innovation. However, as population ageing requires higher investment in healthcare and pension systems, it can create financial pressure on other policy areas, such as those relating to education and active labour market policies (OECD, 2019[3]). Demographic changes also impact consumption and, by extension, skills demand, investments and job opportunities. Consumption will likely shift from durable goods, such as cars, towards services, such as healthcare and leisure (UN DESA, 2020[28]), increasing skills demand related to those sectors. As the service sector often requires high social and interpersonal skills, acquiring such skills becomes increasingly important (OECD, 2019[3]).

Southeast Asian countries continue to experience significant demographic changes, albeit at different speeds. The speed of population ageing from a global perspective is fastest in East and Southeast Asia, which are projected to have the largest increase in the size of the older population (aged 65+) between 2020 and 2050 (UN DESA, 2019[29]). The dependency ratio, which is the ratio of older people

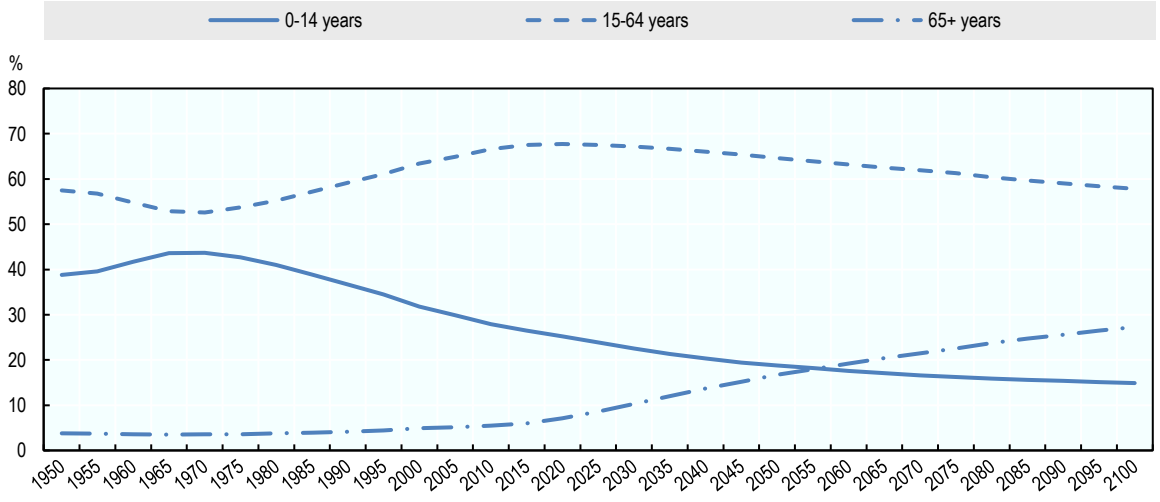
(aged 65+) over the working-age population (aged 16-64), is projected to at least double in all Southeast Asian countries during the period, with some countries, such as Singapore, Thailand and Brunei Darussalam, increasing exceptionally fast (Figure 2.5, Panel A). This trend is projected to accelerate over the next decades. The share of older people over 65 in total population is projected to be over 27.3% in Southeast Asia by 2100 (Figure 2.5, Panel B).

## Figure 2.5. Demographic changes over time in Southeast Asia and selected OECD countries

**A. Old-age dependency ratio, 1980 vs. 2020 vs. 2050**




**B. Historical data and projections of Southeast Asia population share, by age group, 1990-2100**




Source: UN Department of Economic and Social Affairs (2019[30]), *World Population Prospects 2019*, https://population.un.org/wpp/.

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The age structure of the population varies substantially across Southeast Asian countries. Singapore and Thailand, and to a lesser extent Brunei Darussalam and Viet Nam, have a relatively higher share of older populations and are expected to face the challenges of an ageing society in the coming decades (UN DESA, 2019[29]). In these countries with rapidly ageing populations, labour shortages may arise as the number of retiring older workers rises relative to the number of younger people entering the labour market (OECD, 2020[23]). In contrast, countries like the Philippines and Indonesia remain at an early stage of this demographic transition. These countries could potentially still benefit from a demographic dividend over the next decades. Greater investment in the skills of youth in these countries can dramatically improve their skills profiles, increasing their productivity and competitiveness, and, by extension, help them move up the GVC in the longer term.

*Skills implications of demographic changes*

**As individuals work and live longer due to increased life expectancy and improved health, it is critical to support lifelong learning opportunities allowing all individuals to continuously upgrade their skills**. Providing a strong skills foundation early in life is critical and will pay dividends across the whole lifecycle, especially for those from socio-economically disadvantaged backgrounds, who require closer and targeted policy attention in order to facilitate their access to skills development opportunities that would allow them to succeed in work and life (OECD, 2021[31]). Since firms may be less willing to invest in older workers due to lower expected returns over an older worker's remaining career, governments have an important role to play to either provide financial incentives for firms to provide older workers with training or offer alternative skills development options for older workers. Continuously upgrading skills in later life also matters for participating fully in society. For example, older individuals who lack basic digital skills may face barriers to accessing basic commercial services for daily life (e.g. online shopping, telemedicine), connecting with others and benefiting from government services, which are increasingly provided on line.

**As populations age, further economic growth will depend increasingly on more people making their skills available in the labour market**. Southeast Asian countries need to ensure that more individuals, particularly women and older individuals, make their skills available in the labour market by participating in the labour force. Women with children could be incentivised to participate in the labour market through expanding early childhood and care options and part-time and flex-time work options. Older individuals could also be incentivised to stay longer in the labour market by raising the retirement age and introducing flexible retirement transitions allowing the combination of part-time work with pension receipt before or after the standard retirement age. Women and older individuals should also receive sufficient guidance and counselling about possible labour market opportunities, so that they can be best matched with the jobs for which they possess the necessary skills (Adalet McGowan and Andrews, 2015[32]). Increasing the labour supply by attracting and retaining migrants could be another option, as discussed further in the next section.

**Besides increasing labour market participation, it is also critical to use the skills of workers more effectively so they can become more productive**. Firms can raise the use of their workers' skills – and by extension, productivity levels – through introducing and disseminating productivity-enhancing technologies and innovative ways of working (Hanushek and Woessmann, 2010[33]), such as high-performance workplace practices. These include a wide variety of workplace-based measures, such as a flexible work environment, knowledge-sharing activities with colleagues, participation in professional development and performance-based incentives (Belt, Giles and CIPD, 2009[34]; Posthuma et al., 2013[35]; Sung and Ashton, 2005[36]). Management skills also play an important role in raising productivity, as managers can either be enablers or bottlenecks affecting how fully workers use their skills. Effective management practices include goal setting, providing incentives, regular monitoring and resolving conflict. These practices also increase worker satisfaction and reduce worker turnover (Criscuolo et al., 2021[37]).

### *Migration*

Like demographic changes, migration is an important factor affecting the supply of skills in countries. Migrants increase the supply of skills and can contribute to economic growth in their host country if their skills are well used. Migrants can fill important niches in fast-growing sectors, where educating and training the required workers nationally would either take too much time or not be enough to meet labour market demand. Migrants can also fill niches in declining sectors by temporarily providing the required skills and in areas where national skills development efforts would not be worthwhile due to the lack of long-term prospects (OECD, 2019[3]).

Migration also has important implications for the origin countries. When individuals with high skills emigrate, this can be a loss to the origin country, as the investment in educating them cannot be recuperated, and this might increase labour shortages in important sectors. When individuals with low skills emigrate, this may alleviate unemployment pressures in the origin country. If the emigrants return to their origin country at some point, they may bring back useful know-how, skills and networks that can spur innovation and economic growth in their origin countries (OECD, 2019[3]).

Southeast Asian countries are major sources of both migrant inflows and outflows. Migration, both within and outside of the Southeast Asia region, is substantial and increasing over time. Remittances constitute a significant portion of the economy of some Southeast Asian countries. For example, the Philippines is one of the world's top five remittance-receiving countries, where remittances amounted to USD 35.2 billion in 2019, nearly 10% of GDP. Remittance accounted for a significant share of GDP in 2020 in many other Southeast Asian countries, such as Viet Nam (5%), Cambodia (5%), Myanmar (3%) and Thailand (1.6%). In 2019, about USD 78 billion were sent as remittances to eight Southeast Asian countries with available data (World Bank, 2017[38]). The remittances can be an important source for families to finance access to basic services and skills development opportunities.

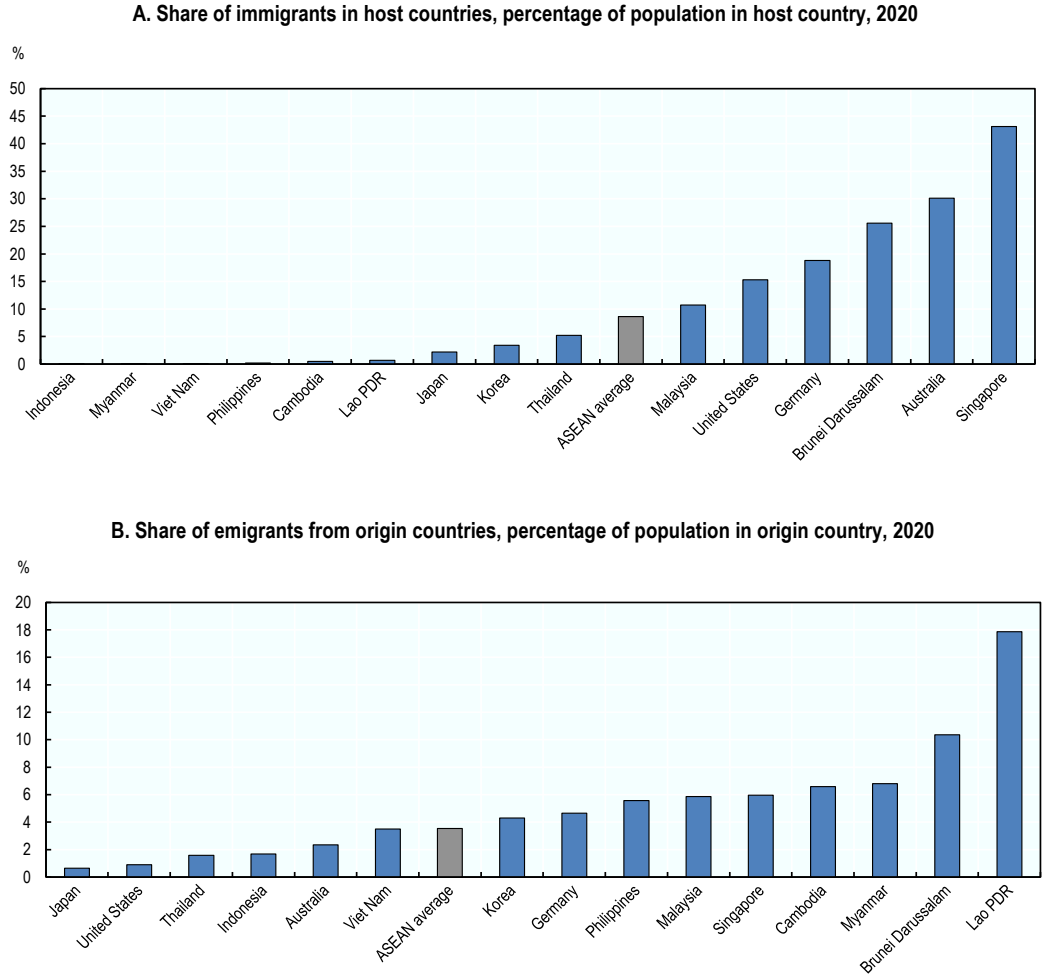
There is substantial variation across Southeast Asian countries in the share of immigrants and emigrants to the countries. Brunei Darussalam, Malaysia, Singapore and Thailand are countries with net migrant inflows, while Cambodia, Indonesia, the Lao People's Democratic Republic (hereafter "Lao PDR"), Myanmar, the Philippines, and Viet Nam have net migrant outflows (Migration Policy Institute, 2020[39]). Singapore is a host to many foreign residents (43.1% of its population), followed by Brunei Darussalam (25.6%) and Malaysia (10.7%). The share of immigrants in the population varies significantly across countries (Figure 2.6, Panel A). The share of emigrants in comparison to the total population of the origin country is relatively high in Lao PDR (17.9%), Brunei Darussalam (10.4%) and Myanmar (6.8%) (Figure 2.6, Panel B). The top destination regions for Southeast Asian emigrants outside of Southeast Asia are North America, the Middle East, East Asia and Europe. Some of the labour gaps produced by emigrating Southeast Asian workers are filled by immigrants mainly from South Asia (e.g. Bangladesh, Nepal and Pakistan).

Intra-regional migration across Southeast Asia increased substantially over recent decades. It tripled from 2.1 million in 1995 to 6.8 million in 2017, turning Malaysia, Singapore and Thailand into regional migration hubs, receiving 6.5 million migrants – 96% of the total number of migrant workers in Southeast Asia (ADB, 2019[19]). Labour mobility within Southeast Asia is concentrated within the Greater Mekong Subregion (GMS) – migrants from Cambodia, Lao PDR and Myanmar to Thailand – as well as from Indonesia to Malaysia and Malaysia to Singapore (ILOSTAT, 2018[40]; Statista, 2019[41]). The Philippines, one of the largest migrant source countries globally, plays a very limited role in migration flows within Southeast Asia. The share of migrants from Viet Nam is also small and declining. Most migrants from the Philippines and Viet Nam live and work outside Southeast Asia, primarily in the United States, the Middle East, and other Asian countries and economies (ADB, 2019[19]).

Most immigrants in Southeast Asia have relatively low skill levels and are compelled to search for economic opportunities, mainly in the construction, plantation and domestic services sectors. While higher-wage jobs

may be available in the region, many immigrant workers cannot take advantage of these opportunities due to their insufficient skill levels. There is a growing interest within the region to facilitate and foster mobility of more highly skilled labour, which has become more important as many Southeast Asian countries aim to pursue more high-value-added manufacturing and transform themselves into knowledge-based economies (ADB, 2019[19]; World Bank, 2017[42]).

## Figure 2.6. Migration to and from Southeast Asian countries, 2020




Source: UN Department of Economic and Social Affairs (2019[43]), *International migrant stock 2019*, www.un.org/en/development/desa/population/migration/data/estimates2/estimates19.asp; Migration Data Portal (2020[44]), *International migrant stock as a percentage of the total population at mid-year 2020*, www.migrationdataportal.org/international-data?i=stock_perc_&t=2020; UN Population Division (2019[30]), *World Population Prospects 2019*, https://population.un.org/wpp/DataQuery/.

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Migration slowed considerably during COVID-19, but countries have begun to open their borders. Nationwide lockdowns, border entry restrictions (e.g. enhanced border surveillance, the suspension of visas, the interruption of international flights and extensive testing and quarantines) and a relatively slow vaccine roll-out in Southeast Asian countries have affected migration flows. Many countries have been slow to reopen borders due to the fear of the virus spreading and the global economic downturn, which depressed demand for skills. Some countries were more affected by the pandemic than others. For example, in Singapore, where reported cases of infection were high, especially among migrant workers,

the decline in the number of migrant workers was significant, falling by more than 5% (70 000 fewer migrant workers) in the first half of 2020. The decline was greatest (8.5%) among work permit holders in jobs other than domestic work and construction (ADB Institute, OECD and ILO, 2021[45]). As of the third quarter of 2022, border entry restrictions have been either fully or partially lifted in all Southeast Asian countries, depending on the vaccination status of migrants. Moreover, countries such as Indonesia and Malaysia have begun to offer new labour migration policy options, such as a nomad visa programme, to attract labour migrants – especially those who are highly skilled – into the country and simultaneously boost local tourism industries (Bangkok Post, 2022[46]).

### *Skills implications of migration*

**Effective skills policies are needed to allow migrants to smoothly enter the education system and labour market**. Migrant adults and their children benefit from effective skills assessment and recognition procedures, which make it possible for their formal education received so far, any acquired foreign qualifications, and informally acquired skills to be formally recognised (OECD, 2017[47]). Formal recognition in the host country can open doors in fulfilling admission requirements for further studies and, in the case of adults, enhance employment chances. The results of migrants' skills assessments can also be used to develop tailor-made skills development programmes for different migrant groups. For example, the methods, materials and content used in language training may differ depending on a migrant's mother tongue, level of literacy in the mother tongue and cultural background. Afterwards, for a smooth transition into the labour market, migrants require guidance and counselling to identify jobs that match their skills, information about documents to prepare in an application and how to participate in an interview. Where migrants want to start a business, they would benefit from entrepreneurial support, such as connecting migrants with a business network, giving legal advice in registering a firm, providing guidance in meeting regulatory requirements, helping develop and execute a business idea and providing access to investment, among others (OECD, 2010[48]).

**Skills policies are also essential to support migrants' integration into society**. Migrants, who sufficiently speak the host country's language and have the necessary cultural skills, are able to benefit from a variety of services (e.g. government services, healthcare), fulfil basic requirements to acquire the nationality of the host country and are more likely to be well integrated into society. Well-integrated migrants may participate in a variety of forms of civic engagement (e.g. volunteering and participating in political parties and religious groups) and leisure activities (e.g. sports and recreational groups, reading books). These activities allow migrants to continuously develop and use their skills in informal ways and build a broad network of personal relationships. Well-integrated migrants are more likely to feel part of the host society, have a greater sense of belonging and enjoy higher levels of life satisfaction. Adult migrants' successful integration into society also positively affects their migrant children. Such migrant parents can support their children in adjusting to the new education system, cultivating a broad circle of friends, exposing them to diverse cultural activities, and guiding them in their lives and career choices (OECD, 2018[49]).

**Given the cross-border nature of migration, it needs to be carefully managed across countries**. Countries in Southeast Asia would benefit from strengthened labour migration governance that makes the flow of workers regular and safer. Cross-border partnerships on migration are needed to support formal employment, reduce exploitative and discriminatory labour practices, promote access to benefits (e.g. social security benefits, skills development opportunities), facilitate tax collection and simplify remittance procedures (OECD/European Union, 2014[50]). As each Southeast Asian country has different demographic profiles, with the size of workforces growing in some and declining in others, more circular migration in the region could benefit all. In addition, managing migration better can boost workers' welfare and accelerate economic integration.

### *Climate change*

Besides the megatrends covered so far, climate change, noticeable through an increasing number of natural hazards and extreme temperatures, also has important skills implications. Available data shows that millions of people were affected by natural hazards in Southeast Asian countries in 2019 alone. Myanmar, the Philippines and Indonesia suffered particularly severe losses, with hundreds to thousands of lives lost to natural hazards. Natural hazards are leading to significant displacements of people, with 4.1 million new displacements in the Philippines, 463 000 in Indonesia and 270 000 in Myanmar in 2019 (Internal Displacement Monitoring Centre, 2020[51]). The closure of schools or workplaces, damages to relevant infrastructure (e.g. roads and bridges to commute), and the relocation of families due to climate change impacts interrupt skills development and skills use (UNICEF, 2019[52]). The demand and supply of skills also change as people move away from regions damaged by extreme weather events into bigger cities, increasing supply in those areas (ADB, 2017[53]). Many countries in Southeast Asia are expected to experience severe coastal degradation due to climate change, affecting the livelihoods and skills usage of communities dependent on marine ecosystems and marine tourism.

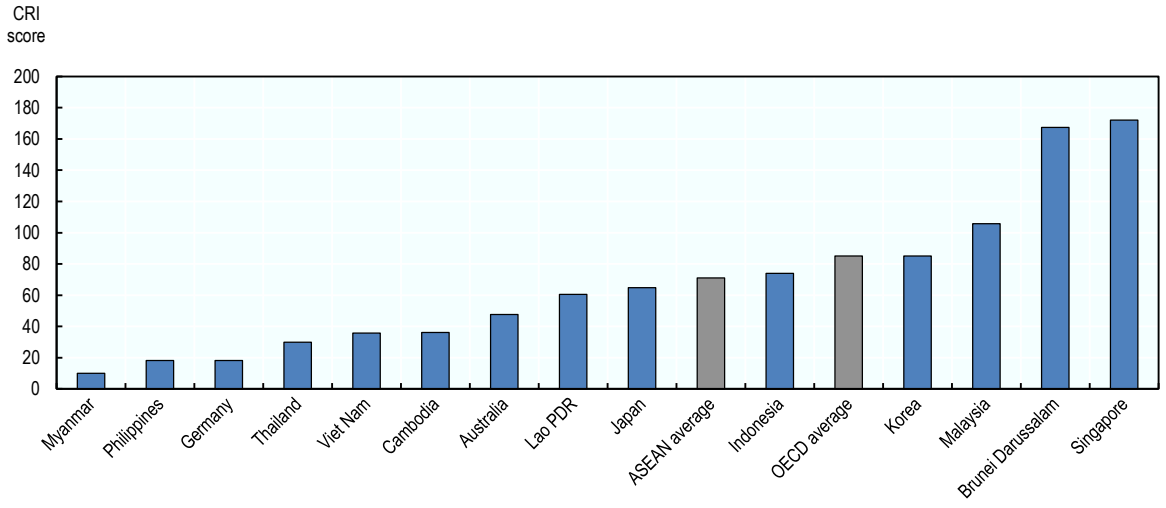
Climate change affects public health and raises the burden of disease in Southeast Asia, affecting economic productivity and individuals' well-being. Skills development is disrupted due to the onset of various health issues among communities, as climate change exacerbates under-nutrition due to adverse effects on agricultural output and increases infectious disease outbreaks due to higher transmission rates in warmer climates (ADB, 2017[53]; Horvath and Borgonovi, 2022[54]). The additional deaths of, and health burdens on, children due to under-nutrition are estimated to be even greater, posing major consequences for future educational and productivity outcomes among the Southeast Asian workforce (ASEAN, UNICEF and WHO, 2016[55]; WHO, 2014[56]). Projections show that climate change will lead to an additional 800 deaths in Southeast Asia by 2030 caused by diarrheal diseases alone (Horvath and Borgonovi, 2022[54]).

Some Southeast Asian countries are particularly vulnerable to climate change due to poor infrastructure and lower coping capacity (Eckstein, Künzel and Schäfer, 2021[57]). According to the Global Climate Risk Index, Myanmar, the Philippines and Thailand are among the top ten countries most affected by extreme weather events between 2000 and 2019 among 180 countries analysed (Figure 2.7). Viet Nam, Cambodia, Lao PDR and Indonesia are also found to have relatively higher risks and vulnerability than the OECD average. In many cases, these vulnerable Southeast Asian countries also need further strengthening of their natural hazard preparedness and risk reduction strategies, which would allow them to mitigate infrastructure and human losses caused by extreme weather events. On the other hand, other countries in the region, namely Singapore, Brunei Darussalam and Malaysia, are relatively resilient to climate shocks (Figure 2.7).

Evidence suggests that many Southeast Asian economies would suffer economically due to climate change (Figure 2.8). The projected adverse impacts on GDP due to climate change are relatively high in Southeast Asian countries, where GDP is projected to fall by 3.13% by 2047 on average. In contrast, it is projected that OECD countries, in general, would not experience any adverse impacts of climate change on their economic growth and even slight, positive impacts of 0.03% growth on average. The fall in GDP is projected to be particularly high in the Philippines (-4.1%), followed by Indonesia (-4%), Cambodia (-3.8%), Malaysia (-3.6%) and Lao PDR (-3.3%). This highlights the economic consequences that climate change has on vulnerable countries in Southeast Asia, particularly through falling incomes, lower consumption and employment cuts associated with GDP falls. These raise serious policy concerns in countries in the region, many of which already have sizeable proportions of socio-economically vulnerable groups to begin with. Climate-change-induced drops in GDP severely affect the ability of ASEAN member states to sustainably develop individually and as a collective block (Christian Aid, 2021[58]).

## Figure 2.7. Global Climate Risk Index, 2021

Global Climate Risk Index (CRI) score

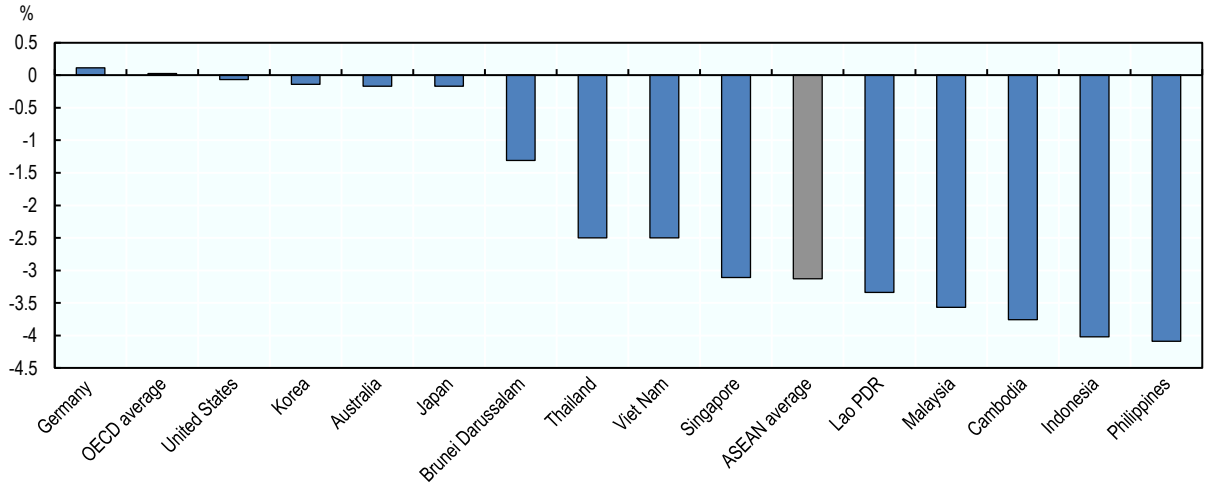



Note: The Global Climate Risk Index indicates a level of exposure and vulnerability to extreme weather events, such as storms, floods and heatwaves. The index reflects the death and economic losses due to hazardous climate events. A lower CRI score indicates higher vulnerability.
Source: Eckstein, Künzel and Schäfer (2021[57]), *Global Climate Risk Index 2021*, www.germanwatch.org/sites/default/files/Global%20Climate%20Risk%20Index%202021_2.pdf.

StatLink https://stat.link/2w7fjk

## Figure 2.8. The projected effect of climate change on GDP by 2047 in selected OECD and ASEAN countries

Percent change in GDP compared to baseline, 2017 and 2047




Note: Computations use the value of GDP in 2017 from the International Monetary Fund as the baseline year.
Source: Adapted from Kompas, Pham and Che (2018[59]), *The Effects of Climate Change on GDP by Country and the Global Economic Gains from Complying with the Paris Climate Accord*, https://doi.org/10.1029/2018EF000922.

StatLink https://stat.link/ngj5vm

Southeast Asian countries are making efforts to respond effectively to climate change. For example, ASEAN member countries issued a joint declaration in 2016, committing to promoting green jobs to ensure inclusive and sustainable growth. The declaration promotes technical and vocational education and training in developing skills for green jobs and active labour market policies in supporting the transition of workers to green jobs. The declaration also emphasises the need to collaborate with relevant stakeholders to identify the demand and supply of green skills and encourage inter-sectoral collaboration in developing and using green skills (ASEAN, 2016[60]).

### *Skills implications of climate change*

**Climate change has significant negative impacts on how skills are being developed**. Exposure to air pollution and high temperatures can impair the central nervous system, cognitive acuity and attentional and behavioural processes. In addition, the exacerbation of respiratory and other illnesses from air pollution may lead to increased school absences for students. To minimise negative impacts on skills development due to climate change, it would be important to consider a variety of actions ranging from system-level policies to classroom-level adaptations to reduce the impact of temperature extremes and air pollution on learning and cognitive development. These include, for example, installing clean energy-powered air filtration, air purifying systems and air conditioning units in schools, homes and the workplace, re-organising school curriculums and pedagogical formats to avoid exposure, and ensuring equal access to environmental information (Horvath and Borgonovi, 2022[54]).

**Climate change also affects the types of skills that are increasing in demand**. All ASEAN member states have established macroeconomic development plans that integrate climate change concerns and signal a shift towards greener industries (ASEAN and ILO, 2021[61]). As countries implement these economic plans, the introduction of market and regulatory changes seeking to preserve or restore the environment will influence investment decisions, production processes and the adoption of technology, which together lead to changing skills needs (OECD, 2021[31]). There will be increasing interest and skills demand for green economy and sustainable technologies, while demand for environmentally destructive activities, such as mining and logging, may decrease. A variety of sectors would be affected by rising climate concerns, including manufacturing, construction, environmental services, transportation, energy, and agriculture, among others.

**Sufficient skills development opportunities are necessary to support the green transition.** Green skills are all the skills individuals need to adapt products, services and processes to climate change and the related environmental requirements and regulations. The development of green skills needs to be integrated into the wider skills development programmes, as green skills are needed across sectors and at all levels of the workforce. The private sector plays a significant role in shifting towards greener modes of production and providing work-based opportunities for acquiring green skills. For individuals who are in declining sectors, they need support to acquire the necessary skills for transitioning to rising sectors in the green economy (ILO, 2019[62]).

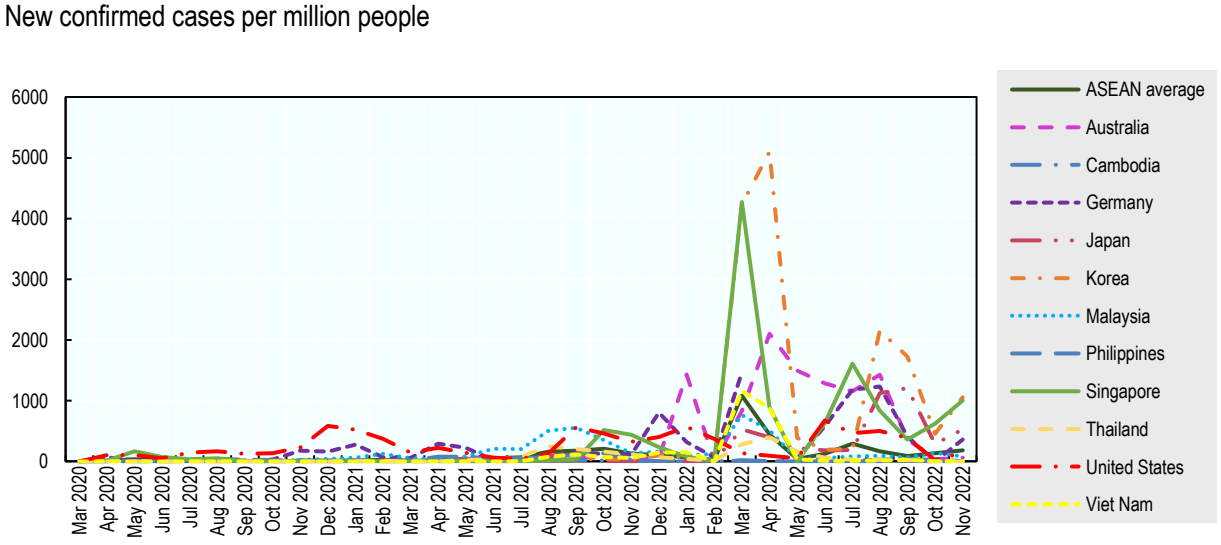
## COVID-19

**The COVID-19 pandemic has had a significant impact on Southeast Asia, with widespread impacts on economic development, education systems and the welfare of people**. It has strained healthcare systems, resulted in millions of deaths globally, and caused the most severe economic recession since the 1920s. In addition, the pandemic and its preventive measures (i.e. social distancing) have significantly impacted the development and use of skills in work and society.

**At the beginning of the pandemic, many Southeast Asian governments adopted effective responses to the initial spread of COVID-19, and the spread of the virus was relatively slow in 2020**. However, since mid-2021, with the emergence of COVID variants and particularly B.1.617.2 (Delta)

variant, the situation has drastically changed, and COVID cases have risen rapidly in the region (Figure 2.9). Vaccination against COVID-19 has been a game-changing tool to effectively control the spread of the virus in some countries. Vaccination rates in Southeast Asia have grown rapidly since the start of the vaccine roll-out, with countries such as Brunei Darussalam, Cambodia, Malaysia, Singapore, and Viet Nam having fully vaccinated (defined as having received the last dose of the primary series) more than 80% of their populations as of November 2022. However, countries such as Indonesia and the Philippines have fully vaccinated only over 60% of their populations, and Myanmar only about 50%, which may have implications on the ability of countries to fully resume learning and work activities even after over two years of adapting to the pandemic (WHO, 2022[63]).

## Figure 2.9. Daily new confirmed COVID 19 cases per million people in Southeast Asia and selected OECD countries, March-November 2022




Note: Data were taken for the first day of each month. Due to limited testing, the number of confirmed cases may be lower than the actual number of cases. Cases reported follow the definition and testing strategies in the affected countries. The figure may not depict the accurate evolution of the epidemic due to the limited data availability and different testing policies per country.
Source: Our World in Data (2022[64]), *Coronavirus Pandemic (COVID-19)*, https://ourworldindata.org/coronavirus.

StatLink https://stat.link/4257uk

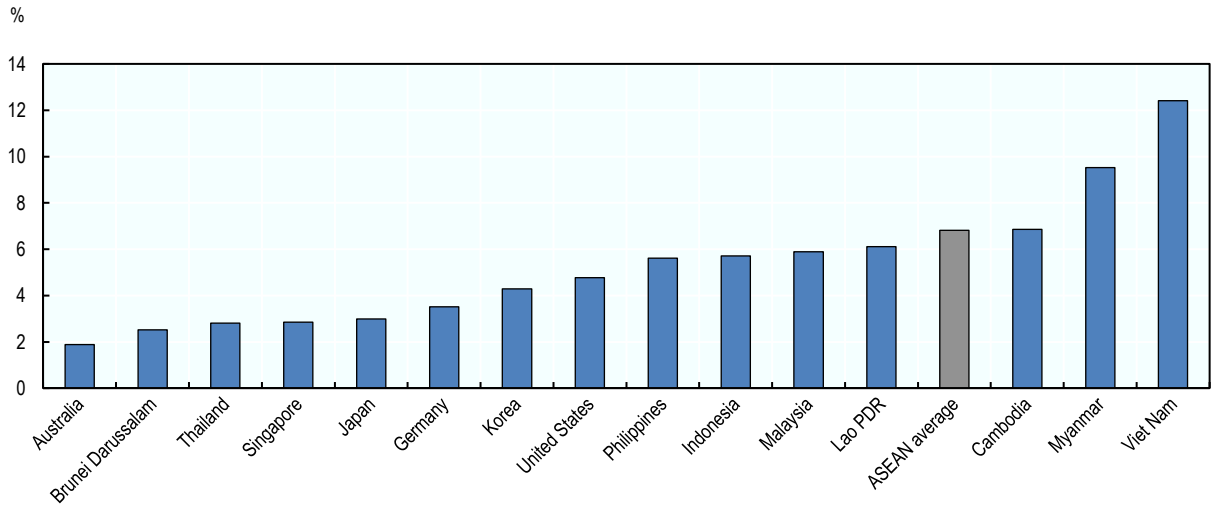
**The pandemic has greatly affected how skills are developed in Southeast Asia** (Chookajorn et al., 2021[65]). School shutdowns and social-distancing measures have significantly increased the amount of learning taking place on line, making the effectiveness of learning for students dependent on the home environment and levels of parental engagement. Students without access to reliable and fast Internet, digital devices and conducive home learning environments were exposed to a greater risk of falling behind. This could exacerbate inequalities in learning opportunities. Moreover, the provision of work-based learning programmes, such as internships and apprenticeships, was reduced as they were often more difficult to provide and assess at a distance. Adult learning, especially non-formal education and informal learning on the job, suffered setbacks, as employers historically cut back on training during economic recessions (OECD, 2020[66]). However, as of the third quarter of 2022, governments have begun to lift restrictions on mobility, facilitating the resumption of skills development activities. For instance, schools have started to gradually resume cross-country exchange programmes (Teng, 2022[67]), while companies are offering reskilling and upskilling opportunities to prepare their employees for re-entry into the

workplace. Furthermore, more flexible working arrangements are allowing workers to enjoy extra uninterrupted time to learn new skills (Chan, 2022[68]).

**COVID-19 has also disrupted the extent to which people's skills are being used**. Due to the restrictions on mobility, factory closures, disrupted supply chains and depressed demand in the economy, many firms have had to furlough or lay off workers. Engaging in social activities also became more difficult due to social-distancing measures and increased pressure associated with people needing to work and study from home. Recent data show a significant share of working hours was lost in 2021 across many Southeast Asian countries, particularly in Myanmar and Viet Nam (Figure 2.10). According to International Labour Organization (ILO) estimates, working-age populations worked about 14.5% fewer hours in Myanmar, and about 8% fewer in Cambodia and Viet Nam in 2021, compared to pre-pandemic time. The loss is relatively high in most Southeast Asian countries compared to OECD countries with available data, including Australia, Germany, Japan and Korea. It is concerning as employment is expected to continue lagging behind the economic recovery. It means skills use can be disrupted for a longer period in Southeast Asia.

## Figure 2.10. Working hours lost due to COVID 19 in Southeast Asia and selected OECD countries, 2021

Percentage of hours lost




Note: The indicator measures the percentage of working hours lost compared to the baseline (the latest pre-crisis quarter, i.e. the fourth quarter of 2019, seasonally adjusted), adjusting for population aged 15 to 64.
Source: ILOSTAT (2021[69]), *COVID-19 and labour statistics*, https://ilostat.ilo.org/topics/covid-19/.

StatLink https://stat.link/exbdqh

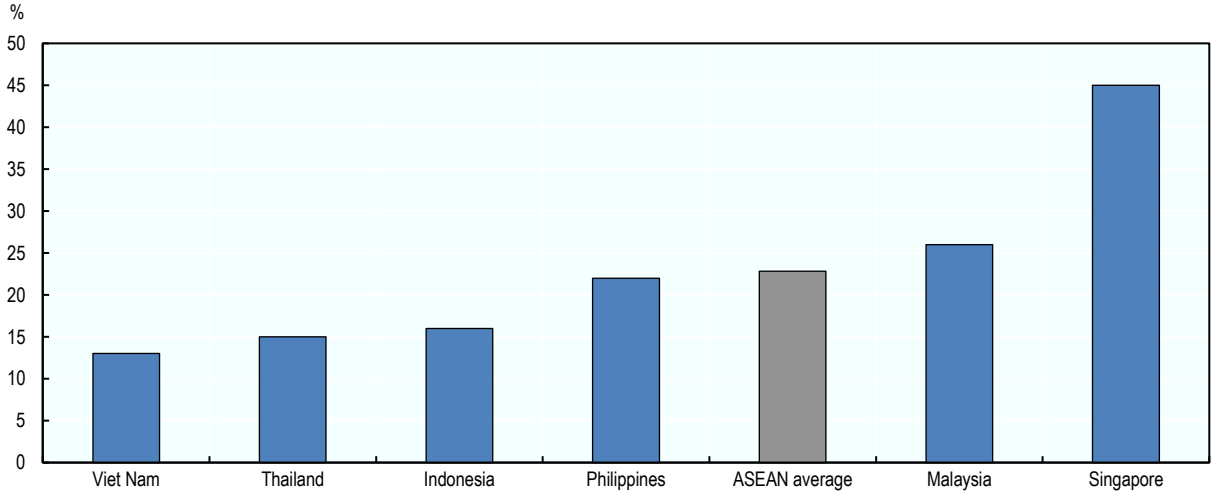
**The pandemic has also changed how skills are used and the intensity of skills use**. Evidence suggests that potentially some 47.8 million people are able to possibly switch to remote working since 2020 across six Southeast Asian countries analysed (Indonesia, Malaysia, Singapore, the Philippines, Thailand and Viet Nam) (Deloitte Singapore, 2020[70]). Singapore (45%) and Malaysia (26%) have a particularly high share of the workforce potentially able to work remotely (Figure 2.11). While teleworking has the potential to increase productivity, improve work-life balance and reduce emissions, its overall impact is ambiguous (OECD, 2020[71]). For example, employees in Japan reported a mixture of positive and negative impacts of teleworking on productivity experienced during the pandemic. Four out of five teleworkers highlighted not needing to commute as a key benefit, but only 14% of respondents felt that teleworking makes it easier

to generate new ideas. Around one-third of respondents reported difficulty consulting and communicating within the company and with partners as key challenges of teleworking during the pandemic. There is some evidence that teleworking can be associated with longer working hours and more frequent work in the evening and during weekends (Eurofound and ILO, 2017[72]; Messenger, 2019[73]), which may negatively impact employees' well-being (and potentially their productivity).

**The ability to effectively respond to and recover from COVID-19 depends on available financial resources, but relatively high government debt levels in some Southeast Asian countries may be a constraint** (Figure 2.12). It would be important to prioritise budget allocation to policies that help prompt recovery from COVID-19 and provide sufficient government financial support to concerted health policies, vaccination campaigns and responsive skills policies. Effective skills governance arrangements are also essential to achieve the best outcomes. They require collaboration across relevant ministries, across levels of government, and with a wide range of stakeholders, such as employers, unions, academics and non-governmental organisations, among others. Such strong skills policies are more crucial than ever, as economic recovery from the COVID-19 pandemic has been reversed by the Russian Federation's invasion of Ukraine, slowing down global growth and increasing inflation. Global GDP is stagnating more than expected, and annual growth is projected to decline to 3% in 2022 before further slowing down in 2023 to just 2.2% (OECD, 2022[74]).

## Figure 2.11. Potential workforce transition to remote working arrangements among ASEAN countries, 2020

Percentage of workforce

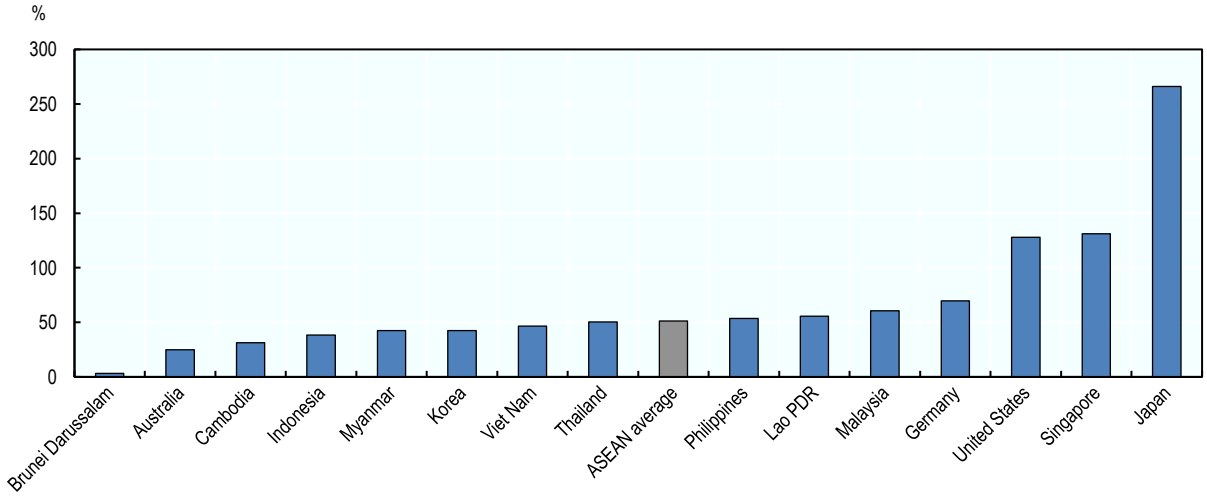



Note: ASEAN figures account for jobs where teleworking is feasible.
Source: Deloitte Singapore (2020[70]), *Remote work: A temporary bug becomes a permanent 'feature'*, www2.deloitte.com/content/dam/Deloitte/sg/Documents/human-capital/sg-hc-remote-work.pdf.

StatLink https://stat.link/sidjoa

## Figure 2.12. Government debt levels in Southeast Asia and selected OECD countries, December 2020

Percentage of GDP




Source: Trading Economics (2020[75]), *Government Debt to GDP*, https://tradingeconomics.com/country-list/government-debt-to-gdp.

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