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BETTER POLICIES FOR BETTER LIVES

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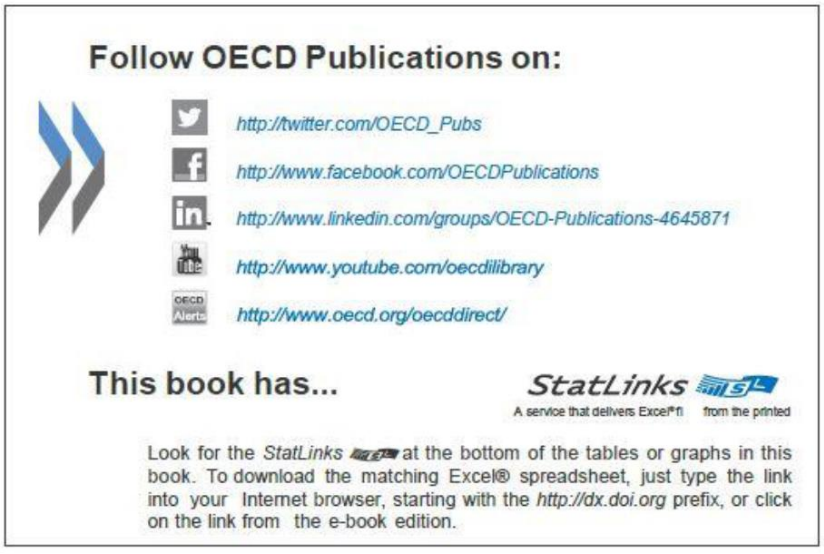
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This is the first Economic Assessment of Thailand.

Information about the latest as well as previous Surveys and more information about how *Surveys* are prepared is available at http://www.oecd.org/eco/surveys.

BASIC STATISTICS OF THAILAND, 2019*

(Numbers in parentheses refer to the OECD average)**

LAND, PEOPLE AND ELECTORAL CYCLE					
Population (million)	69.6		Population density per km² (2018)	135.9	(38.0)
Under 15 (%)	16.8	(17.9)	Life expectancy at birth (years, 2018)	76.9	(80.1)
Over 65 (%)	12.4	(17.1)	Men (2018)	73.2	(77.5)
International migrant stock (% of population, 2015)	5.8	(9.7)	Women (2018)	80.7	(82.8)
Latest 5-year average growth (%)	0.3	(0.6)	Latest general election	March-2019	
ECONOMY					
Gross domestic product (GDP)			Value added shares (%)		
In current prices (billion USD)	544.4		Agriculture, forestry and fishing	8.0	(2.6)
In current prices (billion THB)	16 875.9		Industry including construction	33.4	(26.8)
Latest 5-year average real growth (%)	3.4	(2.2)	Services	58.6	(70.5)
Per capita (000 USD PPP)	19.2	(48.3)			
GENERAL GOVERNMENT					
Per cent of GDP					
Expenditure (2018)	21.6	(40.4)	Gross financial debt (2018, OECD: 2017)	42.1	(108.9)
Revenue (2018)	21.4	(37.5)			
EXTERNAL ACCOUNTS					
Exchange rate (THB per USD)	31.00		Main exports (% of total merchandise exports)		
PPP exchange rate (USA = 1, 2018)	12.37		Machinery and transport equipment	40.7	
In per cent of GDP			Food and live animals	13.2	
Exports of goods and services	59.8	(54.2)	Manufactured goods	12.9	
Imports of goods and services	50.6	(50.5)	Main imports (% of total merchandise imports)		
Current account balance	7.0	(0.3)	Machinery and transport equipment	35.0	
Net international investment position (2017)	-7.1		Manufactured goods	17.3	
			Mineral fuels, lubricants and related materials	15.7	
LABOUR MARKET, SKILLS AND INNOVATION					
Employment rate (aged 15 and over, %)	66.5	(57.5)	Unemployment rate, Labour Force Survey (aged 15 and over, %)	0.7	(5.4)
Men	75.0	(65.6)	Youth (aged 15-24, %)	4.2	(11.7)
Women	58.6	(49.9)	Long-term unemployed (1 year and over, %)	0.05	(1.4)
Participation rate (aged 15 and over, %)	67.0	(61.1)	Tertiary educational attainment (aged 25-64, %, 2016, OECD: 2019)***	19.1	(38.0)
Mean weekly hours worked	42.3	(37.6)	Gross domestic expenditure on R&D (% of GDP, 2017, OECD: 2018)	1.0	(2.6)
ENVIRONMENT					
Total primary energy supply per capita (toe, 2017, OECD: 2018)	2.0	(4.0)	CO2 emissions from fuel combustion per capita (tonnes, 2017, OECD: 2018)	3.5	(8.6)
Renewables (%, 2017, OECD: 2018)	20.0	(10.5)	Renewable internal freshwater resources per capita (1 000 m³, 2014)	3.3	
Exposure to air pollution (more than 10 µg/m³ of PM 2.5, % of population, 2017)	99.7	(58.7)			
SOCIETY					
Income inequality (Gini coefficient, 2018, OECD: latest available)	0.364	(0.332)	Education outcomes (PISA score, 2018)		
Poverty gap at $USD3.10 a day (2011 PPP, %, 2013)	0.12		Reading	393	(487)
Public and private spending (% of GDP)			Mathematics	419	(489)
Health care (2017)	3.7	(12.5)	Science	426	(489)
Education (% of GNI, 2018)	4.2	(4.5)	Share of women in parliament (%)	16.2	(30.7)
			Net official development assistance (% of GNI, 2017)	0.03	(0.4)

* The year is indicated in parenthesis if it deviates from the year in the main title of this table.

** Where the OECD aggregate is not provided in the source database, a simple OECD average of latest available data is calculated where data exist for at least 80% of member countries.

*** For Thailand, data refers to aged 25 and over.

Source: Calculations based on data extracted from databases of the following organisations: OECD, International Energy Agency, International Labour Organisation, International Monetary Fund, World Bank.

Executive summary

COVID-19 has abruptly interrupted Thailand's socioeconomic progress

Thailand made impressive economic and social progress over the past decades, thanks to its strong policy framework, friendly business climate, and attention to citizens' well-being. However, the COVID-19 crisis has interrupted this progress, and a severe recession will occur in 2020, like in most other countries. The economic recovery will be slow, and achieving high-income country status will require more policy reforms focused on productivity growth and human capital accumulation. Together with environmental protection and inclusive growth, these goals are at the centre of the government's "National Strategy 2018-2037".

Growth will contract sharply in 2020, before bouncing back in 2021 (Table 1**).** The government has managed the COVID-19 outbreak well and rapidly flattened the curve of new cases and deaths. Nevertheless, the lockdown measures to contain the outbreak have severely affected domestic demand. Tourism has been hit particularly severely. Macroeconomic policies have been supportive, but risks are nonetheless tilted to the downside due to high uncertainties about the future course of the outbreak. Investments to strengthen the healthcare system and to prepare for a second wave, with sufficient protective and testing capacity, would help to bolster confidence.

Table 1. Activity is projected to contract, before bouncing back in 2021

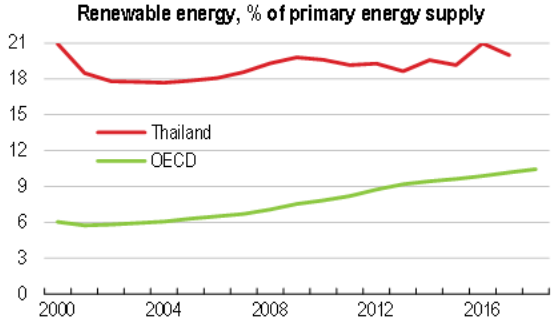
	2018	2019	2020	2021
Real GDP	4.2	2.4	-6.9	3.5
Private consumption	4.6	4.5	-3.2	3.3
Exports	3.3	-2.6	-19.2	6.0
Imports	8.3	-4.4	-16.4	5.2
Inflation (CPI)	1.1	0.7	-1.1	1.8
Federal government fiscal balance[1]	-2.2	-2.6	-7.8	-6.8
Public debt, gross[1]	41.8	41.2	49.8	55.8
Current account balance[1]	5.6	7.0	4.5	4.9

Note: 1) % of GDP.
Source: OECD calculations.

Vulnerable workers are being hit hard. Even before the outbreak, labour informality was widespread despite the rapid eradication of extreme poverty. Informal workers lack access to sufficient social protection, including training opportunities, weighing on overall productivity. Together with targeted formalisation measures, particularly for women, the emergency supports need to be gradually transformed into structural measures to up- and re-skill vulnerable workers, thus making the post-outbreak economy more inclusive and productive.

Low oil prices risk undermining efforts to mitigate climate change during the post-COVID recovery. Instead, further investments in renewables energy capacity could be key levers for a sustainable economic recovery (Figure 1). The tourism industry also needs to become greener and more productive in the recovery phase by adopting digital technology, especially in rural areas. In addition to preserving the country's rich natural and cultural assets, a better management of local environments, including water and waste, would shore up the whole attractiveness of the region.

Figure 1. The share of renewable energy supply is high



Source: IEA, IEA World Energy Statistics and Balances Database.
StatLink https://stat.link/ukwclv

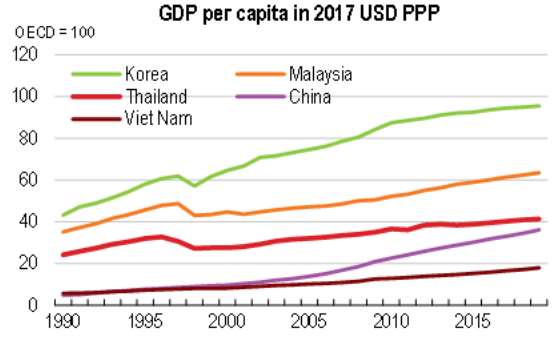
Macroeconomic support is needed

Thanks to its sound macroeconomic policy framework, Thailand was well placed to respond rapidly to the sharp economic downturn. Monetary policy has been quick to inject liquidity and support credit, while fiscal policy has cushioned the loss of income and helped struggling companies.

Inflation has dropped sharply, not only due to low energy prices, but also to weak demand, raising concerns about deflation and fast-deteriorating economic prospects. The Bank of Thailand has reacted quickly, cutting its policy rate to a record low level. If downside risks materialise, the Bank could ease its monetary stance further. The use of additional policy tools should also be considered if space to lower its policy rate becomes insufficient.

Fiscal policy has focused on providing financial relief to affected households and enterprises. The size of the fiscal measures included in the various packages (14.8% of GDP) has been sizable. This has been made possible by ample fiscal space, thanks to its past prudence, and measures to contain the deficit and public debt prior to the crisis. After the exit from lockdown measures, fiscal resources should be reallocated to boost public investment and foster the long-term growth potential (Figure 2).

Figure 2. The catch-up with advanced countries has slowed down



Source: World Bank, World Development Indicators Database.
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The tax and transfer system has little impact on the distribution of income. Revenue collection remains low, and relies strongly on VAT, which is not progressive. In the long term, rapid population ageing will put pressure on fiscal sustainability. Higher tax revenue will be needed to strengthen social and healthcare expenditure.

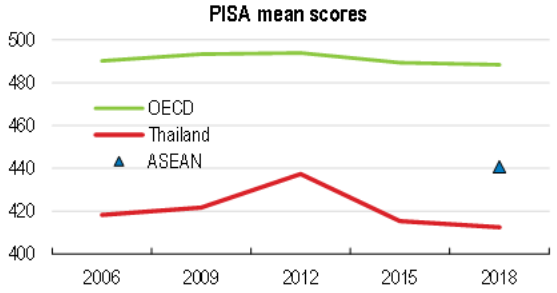
Getting the right skills for prosperity

Thailand has made remarkable progress in expanding access to education. Participation in general education in Thailand is high, particularly at the primary level, with access to primary education nearly universal.

The number of out-of-school children has fallen since the turn of the century, though many students from the poorest families still do not attend school, and the rates of exclusion are higher in rural areas and among various ethnic and linguistic communities. Consequently, students of the age 15 achieve lower scores in reading, science and mathematics, on average, than OECD countries and Asian peers (Figure 3).

The share of highly educated workers has nonetheless increased significantly and many young graduates hold degrees in engineering and manufacturing, social sciences and ICT. Although the wage premium for university degrees remains strong, it has declined relative to, for example, lower secondary qualifications. The rapid expansion of tertiary education has not always been matched with job opportunities for graduates. High-quality career guidance services, together with policies stimulating the demand for higher-level skills in the labour market, will be essential.

Figure 3. PISA scores are low



Source: OECD (2019), PISA 2018 Results (Volume I).
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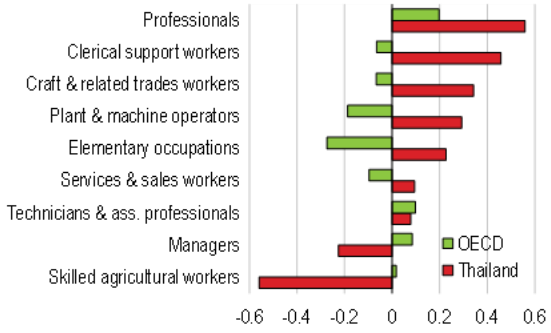
Because of skills mismatches, substantial labour shortages prevail in a range of occupations and industries. The largest shortages are found in professional and office support occupations, but also in more technical occupations, like crafts and related trades, machine operators and assemblers (Figure 4).

This situation makes it important to improve the matching of demand and supply of skills. Thai employers could greatly benefit from a more thorough analysis of the type of skills that they need to hire, and should be involved more actively in the formulation of vocational education and training programmes. Efforts are being made to provide high-quality career guidance, and this could be further expanded.

Figure 4. Skills shortages are substantial

Shortage (+) and surplus (-) intensity, 2018 or latest



Source: OECD, Skills for Jobs Database.

StatLink https://stat.link/09bq7u

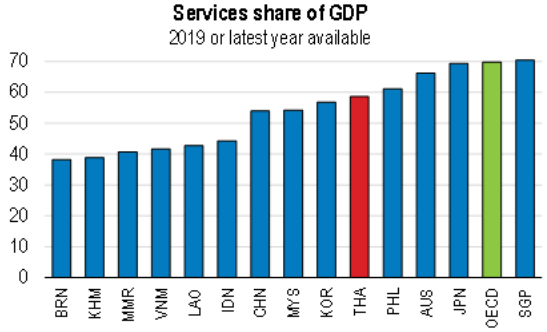
Expanding foreign trade in services

The services sectors have become important (Figure 5**) and essential to international trade.** Compared to its very large tourism sector, the sector of high-end services remains small. As the COVID-19 pandemic has severely affected international tourism, nurturing other services exports would make the Thai economy more resilient. As IT and information, and professional services are traded indirectly through value chains and are now crucial elements of manufacturing, strengthening these services would benefit Thailand in reconfiguring its participation in global value chains and enhance the competitiveness of its manufacturers.

The expansion of services sector is hindered by tight regulations. Liberalising these sectors would restore their competitiveness and boost productivity not only in the services sectors themselves, but also in manufacturing sectors that rely on these services as input. The government recognises its importance, but there are still a number of barriers, notably in international mobility of skilled workers and FDI.

As goods and services trades are intertwined, barriers to both must be addressed in a coherent manner. Thailand has committed to trade integration, but can benefit more from service-oriented Preferential Trade Agreements (PTAs). PTAs that contain ambitious regulatory reforms "behind the borders", such as the Regional Comprehensive Economic Partnership (RCEP) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CP-TPP), could provide the Thai manufacturers with better access to more efficient services providers.

Figure 5. Services sectors are important



Source: World Bank, World Development Indicators Database.

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Foreign direct investment is essential to expand exports of services. Restrictions on inward FDI have been eased in manufacturing, but not sufficiently in services. Eliminating FDI restrictions would not only spur employment and exports, but also benefit consumers.

As trade integration would entail job displacement and wage adjustment, policies will need to be put in place to mitigate the impact on affected workers. In addition, since opening markets would stimulate demand of the manufacturing sector for more sophisticated business services, it would increase the demand for highly skilled workers, exacerbating the existing skills imbalances. To maximise the benefits of services trade integration, Thailand needs to step up policies to re- and up-skill workers and make the labour market more flexible. Particularly, given the significant regional disparities and a large share of agriculture employment in Thailand, facilitating labour force adjustment among different sectors and occupations is crucial.

MAIN FINDINGS	KEY RECOMMENDATIONS
Macroeconomic policy, fiscal sustainability	
The COVID-19 outbreak has severely hit economic activities, and growth is expected to be negative in 2020 and remain weak, while there is the high risk of a second wave of the pandemic.	Extend the emergency support measures to vulnerable households and SMEs, if the situation worsens. Strengthen the capacity of public health system including testing.
As high uncertainty about the future course of the outbreak and weak employment prospects weigh on confidence of businesses and households, the recovery will be slow, which would have a scarring effect on long-term productivity.	In the short run, maintain employment and stimulate demand. As the recovery becomes steady, boost the productive capacity of the economy by gradually shifting from income and employment supports to structural measures including the up- and re-skilling of workers.
Although the government's fiscal position has been healthy, spending needs will increase further if the COVID-19 outbreak worsens.	In case further spending is required, use the available fiscal space within the fiscal constraints, and ensure cost-effectiveness and transparency.
Inflation has dropped sharply and is expected to be negative in 2020 before bouncing back to the lower bound of the target in 2021, with risks titled to the downside.	Keep monetary policy very accommodative, and if downside risks materialise, reduce the policy rate further. Consider additional monetary policy tools, if interest rate cuts further narrow policy space.
Boosting productivity, tackling inequality and informality and narrowing gender gaps	
Whistle-blower protection is partially covered by separate laws.	Consider developing a single dedicated law to protect whistle-blowers.
Labour informality is high and female workers are concentrated in the informal sector, including as domestic workers.	Lower the costs of formalisation by reviewing the stringent employment protection policies and preparing customised policy measures to the targeted people with enhanced awareness among vulnerable people. Reach out to female informal workers and make formalisation measures more in line with their needs.
Greening growth	
The share of renewable energy production is growing, but still lower than in other regional peers.	To attain a sustainable high growth path, invest in green infrastructure, particularly strengthen the capacity of renewable energy production.
Mass tourism and narrow stakeholder involvement have caused degradation of tourism resources, while the overall productivity level of the tourism industry has been low.	Encourage further digitalisation of the tourism industry, especially in rural areas and the reduction of its environmental footprint. Involve wider local communities to retain broader environmental resources, including the management of water and waste.
Getting the right skills for future prosperity	
Skill needs in the Thai labour market are not assessed in a regular and systematic way.	Develop robust tools to regularly assess skill needs at the national, regional and sectoral level.
Student achievement is low by international standards and regional inequalities are large.	Consolidate the implementation of school curricula and improve education infrastructure in rural areas.
Despite a slight decline in recent years, the wage benefit to university degrees is strong.	Pair skills policies with policies that stimulate the demand for high-level skills in the labour market by lowering barriers to entry for firms, intensifying efforts to boost technology adoption levels and actively promoting entrepreneurship through professional and educational channels.
Data collection and analysis of participation of adults in training and employers' provision of training are lacking.	Sufficiently use labour market information to develop relevant policies and promote adult learning programmes.
Workers going though structural changes do not have sufficient labour market information and access to necessary trainings.	Promote targeted support (e.g. career guidance and trainings on skills in high demand) for workers in jobs with high risk of significant changes.
Making the best of international trade in services	
Services sector markets in Thailand are more strictly regulated than in other Asian countries.	Remove barriers in restricted sectors, particularly regarding the international mobility of skilled workers by expanding the coverage of Smart Visa.
Restrictions of FDI tend to be stricter in the services sectors.	Remove obstacles to FDI by relaxing the rules on capital thresholds and listed sectors.
Thailand has concluded preferential trade agreements (PTAs), some of which contain services elements.	Pursue PTAs that contain ambitious regulatory reforms beyond the current commitments under the General Agreement on Trade in Services (GATS).

1 Key policy insights

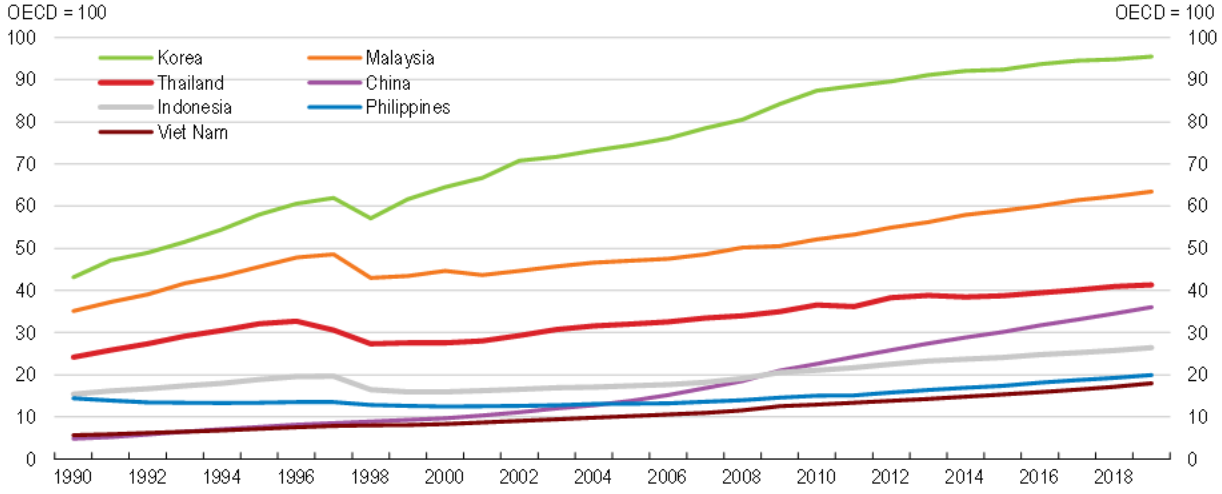
Despite successful economic and social progress in the past decades, new challenges are emerging, not least those that result from the COVID-19 outbreak and its socioeconomic consequences. To achieve a high-income status, returning to “business as usual” is no longer sufficient. Implementing substantial structural reforms, while maintaining macroeconomic stability and improving inclusiveness, is more than ever a prerequisite to re-boost economic growth. This chapter discusses policies to regain productivity and tackle social imbalances, both of which would further improve the wellbeing of Thailand’s population.

Re-boosting growth after the COVID-19 outbreak

Until the outbreak of the COVID-19 pandemic, Thailand had achieved successful economic and social progress. After the Asian Financial Crisis of the late 1990s, which severely hit the economy, a series of structural reforms restored growth at a pace robust enough to achieve resiliency when hit by the Global Financial Crisis in 2008-09 and to become an upper-middle economy (Figure 1.1). The transformation from an agrarian economy to an export-oriented manufacturing regional centre in past decades has created higher-wage jobs and significantly reduced poverty. Progress was also made towards universal education and social security, thus improving people's welfare considerably.

Figure 1.1. Thailand's economy was performing well until the COVID-19 crisis

GDP per capita relative to the OECD average, computed at 2017 USD PPP



Source: World Bank, World Development Indicators Database.

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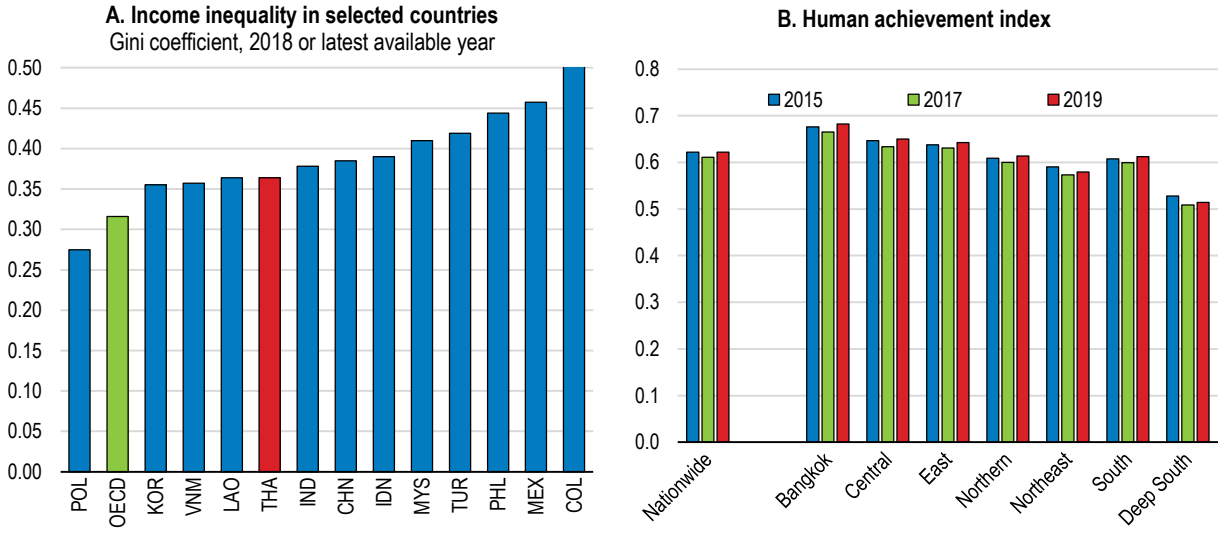
Integration into the global economy brought economic prosperity. Thailand has benefited from being located at the geographical centre of the Association of South East Asian Nations (ASEAN) and Asian regions, making it an attractive place to invest and trade. One of Thailand's ports, Laem Chabang, is the world's 21st largest container port and the fourth largest in ASEAN, after Singapore and two Malaysian ports. From the outset of its development in the 1960s, Thailand promoted openness and investment. Building on a friendly business environment, Thailand has been successful in attracting large inflows of foreign direct investment (FDI). Its manufacturing sectors, particularly in automobiles and electronics, are deeply connected to global value chains (GVCs). Lessons have been learnt from natural disasters, such as the floods that disrupted manufacturing production in 2011, thus making the value chains more resilient.

However, progress towards higher economic and social levels has been suddenly interrupted by the COVID-19 outbreak, despite the good management of the sanitary situation by the government. A severe recession is projected for 2020, with a sharp contraction of activity and employment, like in most other countries, and the recovery will be slow. A second wave of the pandemic in Thailand or in other countries would further postpone the return to growth. The crisis will delay the achievement of high-income country status and will require an adequate macroeconomic policy response and structural reforms focused on productivity growth and human capital accumulation.

Thailand was in a sound macroeconomic situation when it was hit by the crisis, with a strong fiscal position and low inflation. However, trade tensions had already weakened growth before the recession, while competitiveness had deteriorated in the manufacturing sector. International trade disputes and political uncertainties have damaged the dynamism of trade among Asian countries, and this is likely to persist in the future, with supply chains accelerating their relocation to low-wage Asian countries, such as Viet Nam and Cambodia. On the other hand, as the health emergency has revealed, digitalisation and new technologies are likely to provide significant opportunities, which Thailand should seize to thrive. An export-oriented services sector is emerging, which could take up the slack left behind by the manufacturing sector. A successful strategy to expand sectors of high value-added services, such as information and professional services, and digital industries, will require large improvements in the quality of education, which is considered as insufficient by both the OECD PISA scores and the World Bank's Human Capital Index. Getting the right skills will lift not only overall productivity but also the welfare of current and future generations.

Sharing growth more equally and ensuring that no large groups of people are left behind will also be important. Based on the international poverty line of USD 1.90 (2011 PPP) per day, extreme poverty was eradicated in 2011, but according to the poverty line used for upper-middle income countries (USD 5.5 in 2011 PPP), 8.6% of households still lived below the poverty line in 2018. Moreover, the national average conceals large disparities across regions, notably in terms of income and health status, and a divide persists between rural and urban areas (Figure 1.2). About half of workers employed in the informal economy do not benefit from social protection and their wages are low. In addition to strengthening social protection, accumulating further human capital would help to achieve higher quality of life.

Figure 1.2. Inequality between regions is significant



Note: The Gini coefficient refers to disposable income for OECD countries and to consumption or income for non-OECD countries. The NESDC human achievement index is calculated based on 32 indicators covering 8 sub-indices including health, education, employment, income, housing and living environment, family life and community, transport and communication, and participation.
Source: World Bank, World Development Indicators Database; OECD, Income Distribution Database; and NESDC.

StatLink https://stat.link/a2d8vf

The government recognises the importance of these challenges and its National Strategy 2018-2037 provides a comprehensive policy framework to achieve ambitious governance reforms. The implementation of this framework should involve all stakeholders with the goal to attain sound and

sustainable growth through materialising efficient and effective resource allocation, nurturing new industries and boosting innovation. Improving the business environment is crucial to this end, in particular achieving high standards in terms of public sector integrity through combatting corruption.

In line with the government's strategy, the main messages of this Economic Assessment are:

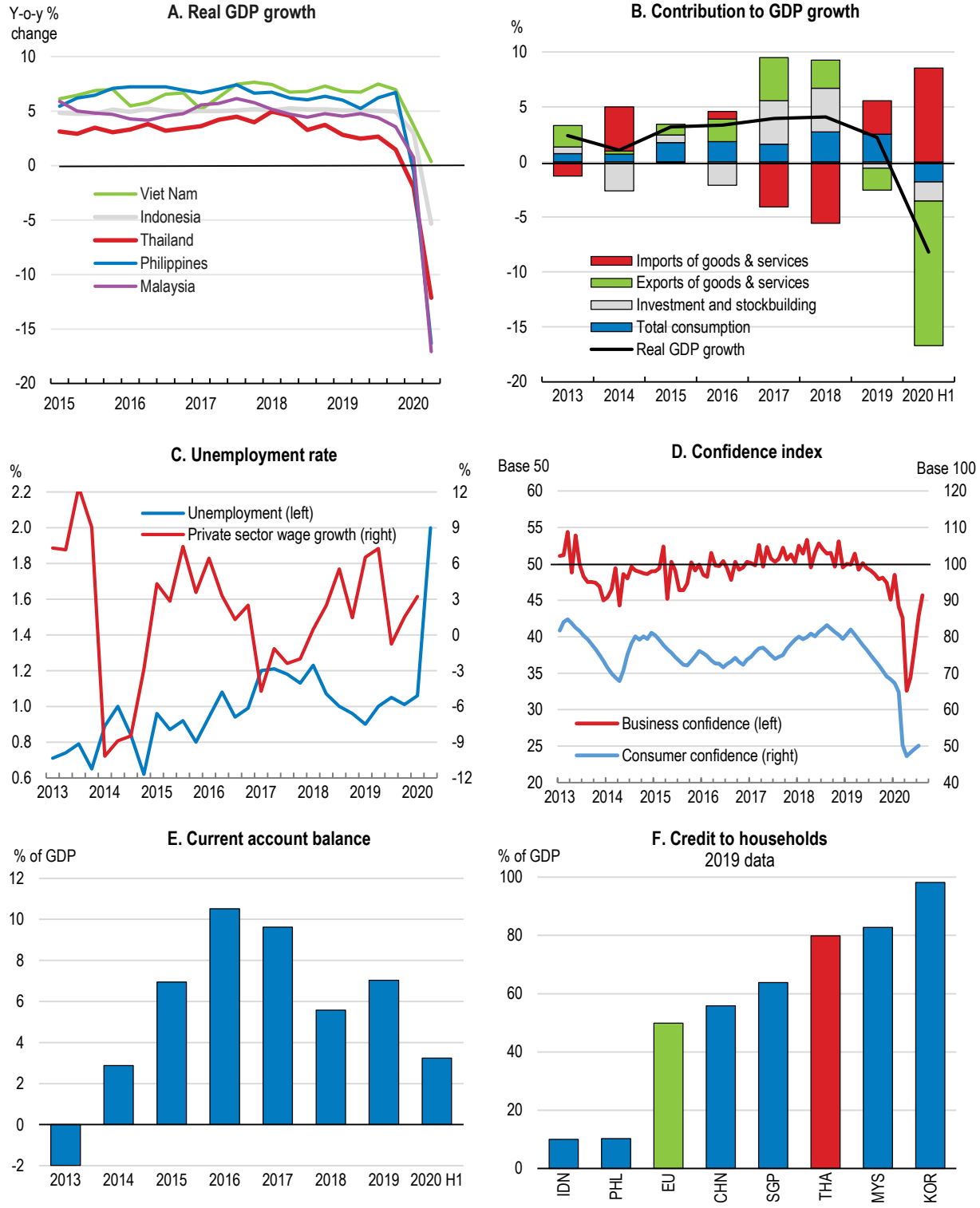
- Re-boosting growth rapidly after the COVID-19 crisis is essential to avoid the scarring effect of joblessness and widespread corporate bankruptcies. Monetary and fiscal support should continue until the recovery becomes sustainable, and further actions might be needed if a second wave of contamination hits Thailand and the world. The crisis highlights the importance of further enhancing resiliency to prepare for future shocks, with a rebuilding of fiscal buffers after the return to normal.
- The prolonged crisis will trigger a large-scale labour reallocation, with sectors such as tourism likely to experience a downtrend while digital industries will probably expand. Investing more in human capital to facilitate this labour force allocation will help avoid persistent joblessness. To this end, Thailand needs to provide more up- and re-skilling opportunities throughout people's lives and strengthen the quality of education.
- Strengthening services sectors to move up the ladder of global value chains by opening up services markets more to foreign firms and workers and by achieving a friendlier business climate through regulatory reforms would help to stimulate innovation and to prepare the business sector for becoming a new growth engine in the post-COVID environment.

The COVID-19 outbreak struck an already slowing economy

Before the COVID-19 outbreak occurred, Thailand's economic activity had already moderated to a slower pace than that in regional peers (Figure 1.3, Panel A). Despite low interest rates, subdued inflation and stable labour market conditions, private consumption remained weak (Figure 1.3, Panels B and C). The government introduced two consumption-boosting stimulus packages in 2019, worth THB 460 billion or approximately 2.7% of GDP. However, the positive impact of this fiscal package was mitigated by the sharp decline in purchases of durable goods, notably passenger vehicles. Likewise, private investment moderated from late 2019, as uncertainties in both domestic and external economic environments continued to dampen business confidence (Figure 1.3, Panel D). Moreover, the below-average rainfall in 2019 has caused one of the worst droughts in the past decades since the beginning of 2020, damaging the agriculture sector severely.

The contribution of foreign trade to growth has deteriorated and the current account surplus has narrowed, even though it remains at a healthy level (Figure 1.3, Panel E). The trade tensions between the United States and China, Thailand's largest export markets (Figure 1.4), reduced Chinese exports to the United States, leading to a decline in China's imports from Thailand, such as computer parts, integrated circuits and printed circuits. On the other hand, Thailand benefited from trade diversion – exports to the US market seeking to avoid the new import tariffs by China – although less so than in peer countries of the region (Figure 1.5).

Figure 1.3. Recent economic developments



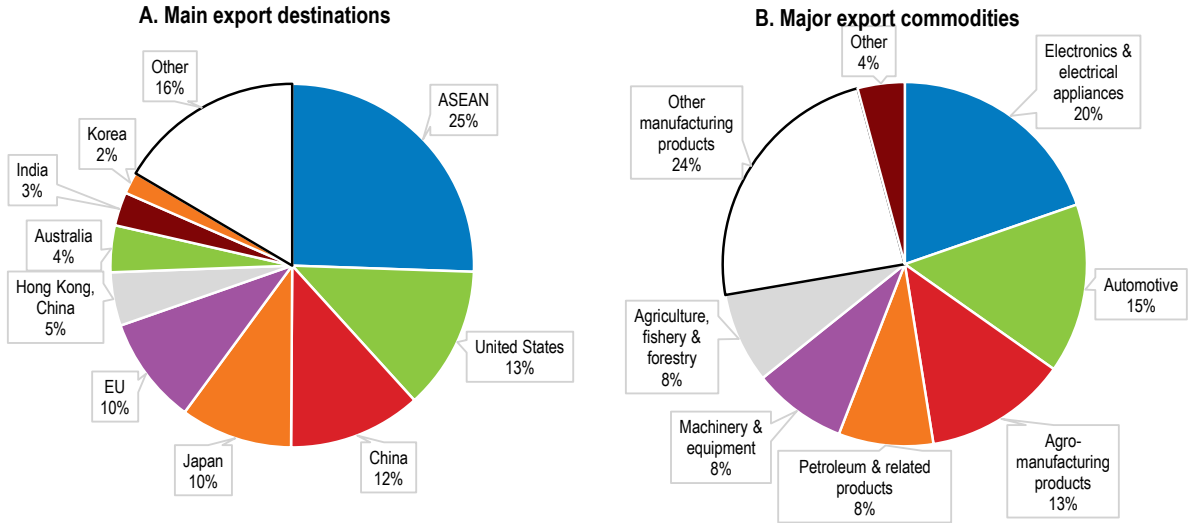
Note: The business confidence index varies from the minimum value of 0 to 100, an index above 50 means that business sentiment has improved and an index below 50 means a deterioration. The consumer confidence index is ranged between 0-200. An index equals 100 suggests that consumer confidence is stable.

Source: CEIC; NESDC; Bank of Thailand; and Refinitiv.

StatLink https://stat.link/0zkw9c

Figure 1.4. Exports of goods by market and commodity

Share of total exports, 2019

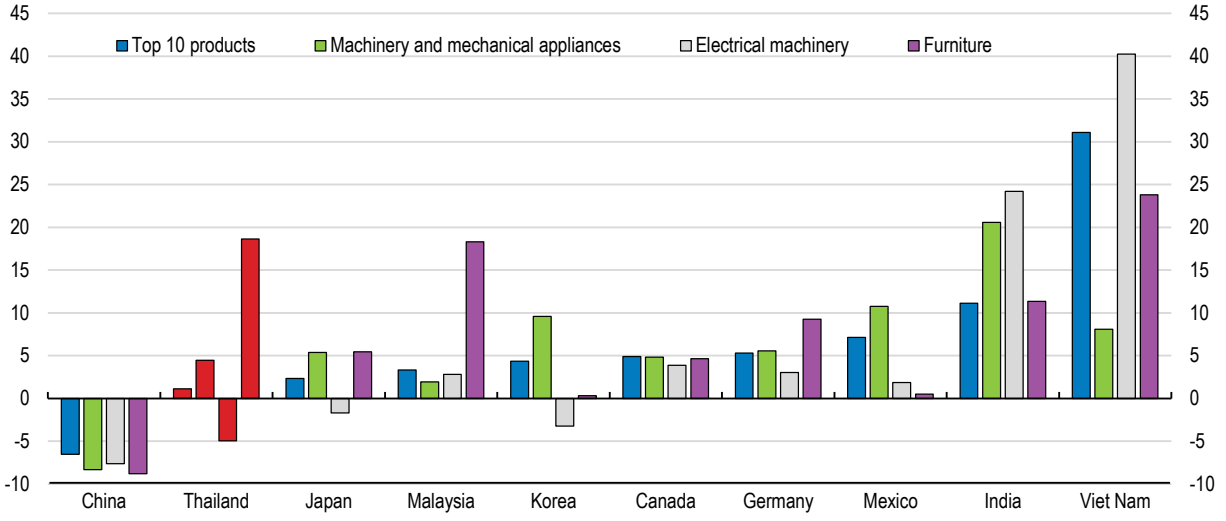


Source: Bank of Thailand.

StatLink https://stat.link/bpscuh

Figure 1.5. Thailand benefited less from trade diversion than its peers

Annualised growth of US imports, 2017 - 2019

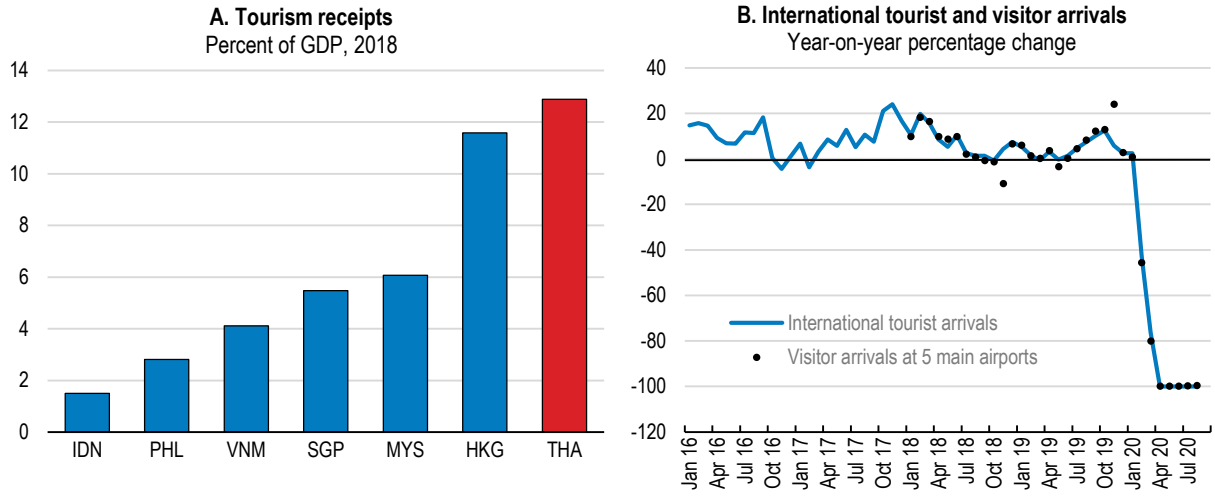


Note: Countries are ranked by the "Top 10 products" category. Products are based on the HTS2 classification. The top 10 products accounted for 68.8% of total US imports in 2019. These products include nuclear reactors, machinery and mechanical appliances, electrical machinery, vehicles, mineral fuels, pharmaceutical products, optical and medical instruments, furniture, plastics, precious stones and metals.
Source: United States International Trade Commission.

StatLink https://stat.link/bcd63y

The global outbreak of COVID-19 has severely affected the economy since early 2020. As it ranked 9th in 2018 for international arrivals (see Chapter 3), Thailand was one of world's most popular tourist destinations. This has, however, resulted in a severe hit by the sharp decline of international travel (Figure 1.6, Panel A). It was also one of the largest beneficiaries of the boom in Chinese tourism among the ASEAN countries, with 11 million Chinese tourists visiting the country in 2019, contributing to about a third of total international tourist arrivals. Starting from China's ban of outbound group tours in late January 2020, restrictions on international travel imposed by many other countries including Thailand's own border restriction have hit the Thai tourism sector significantly (Figure 1.6, Panel B). Moreover, as many countries imposed shutdown measures, external demand deteriorated rapidly at an unprecedented scale, leading to a sharp contraction of private investment.

Figure 1.6. The sharp drop of international tourists affects Thailand significantly



Note: The five main airports are: Suvarnabhumi, Don Mueang, Phuket, Chiang Mai, Hat Yai.
Source: World Bank, World Development Indicators Database; CEIC.

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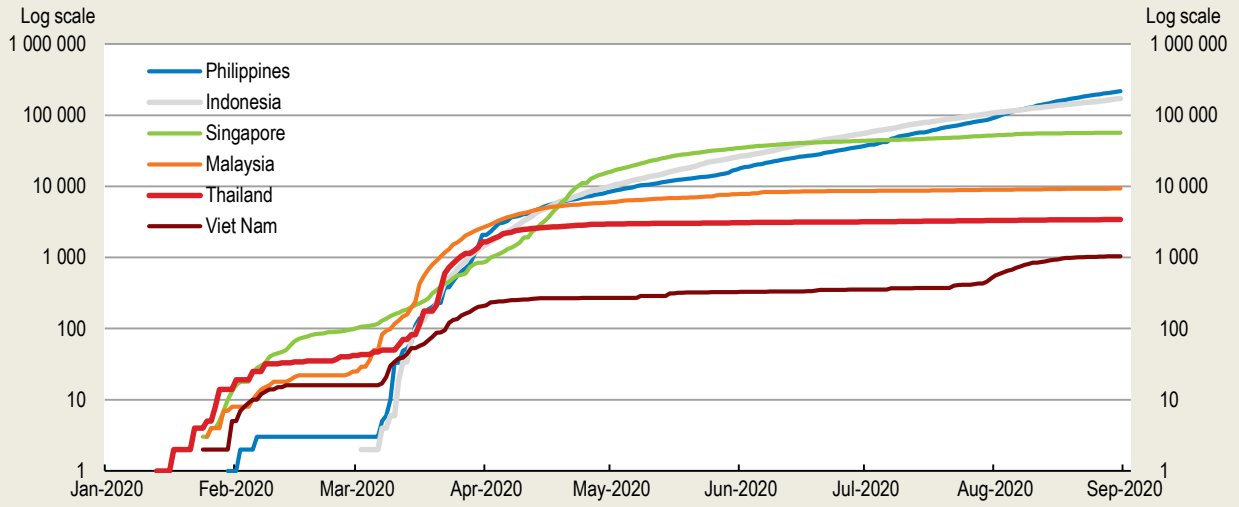
Although Thailand has prevented a severe outbreak, the restrictions on business and people's activities have severely affected domestic sectors. After a gradual step-up of the restrictions on business and social activities, such as the closure of public parks, the government tightened the restrictions in late March to suspend non-essential businesses and people's inter-provincial travel because of the spike in confirmed cases (Box 1.1). Although the rules were less tight than in neighbouring peers (staying-at-home was mandatory only during night time and factories were able to operate), they have dragged down economic activity significantly since March (Figure 1.8). The government promptly adopted a series of relief measures amounting to 14.8% of GDP altogether to support the income of vulnerable households and to provide liquidity to affected businesses, notably SMEs (Table 1.2). As the number of newly confirmed cases declined to single digits, the restrictions had been relaxed gradually since early May, and were removed mostly at the end of June.

Box 1.1. South-East Asia's public health policy reactions to counter the COVID-19 outbreak

On 13 January 2020, Thailand became the first country that confirmed a COVID-19 case (a Chinese tourist) outside of China. In South-East Asian countries, as the number of confirmed cases started accelerating from mid-March (Figure 1.7), the governments have stepped up the efforts to contain an outbreak.

Figure 1.7. The COVID-19 outbreak intensity varies in the region

Cumulative number of COVID-19 cases



Source: https://ourworldindata.org/coronavirus-source-data.

StatLink https://stat.link/7q3ybf

Except for the Philippines and Viet Nam, where the confinement measures were introduced at a much earlier stage due to their weak public health capacity, most other countries imposed their confinement measures from mid-March to early April at almost the same phase of the outbreak, though the restrictiveness of the measures differs among countries (Table 1.1). Almost simultaneously, most South-East Asian countries shut borders to ban foreign visitors' entry (Thailand restricted most of international visitors' entry from 26 March).

Nevertheless, the situations have diverged since then. It is premature to detect which factors have contributed to it, but the past severe experiences would help some countries.

Viet Nam, which has moved swiftly to contain the COVID-19 outbreak through thorough quarantine and district-level isolation measures, experienced a number of outbreaks of zoonotic and infectious diseases in the past decades, such as severe acute respiratory syndrome (SARS) and avian influenza A (H5N1) to name a few. The government adopted in 2007 the Law on Prevention and Control of Infectious Diseases that provides a framework to specify the responsibilities of government agencies and their coordination. The law forbids concealing information related to diseases, and emphasises the importance of public mobilisation and information dissemination.

Thailand, which also has past experience of a Middle East respiratory syndrome (MERS) outbreak, has prevented a rapid increase of cases. After experienced a few cases of Middle East respiratory syndrome outbreak, the government decided in 2016 a National Strategic Plan for Emerging Infectious Diseases 2017-2021. According to the Global Health Security Index 2019 (Johns Hopkins Center for Health Security, NHI and The Economic Intelligent Unit, 2019[1]), Thailand was in the 6th place out of 195 countries, with its robust health capacities. It also has a universal healthcare system.

As the number of new confirmed cases declined or stabilised, countries started easing the restrictions to resume economic activities. In Thailand, the night curfew was removed on 15 June, and most of the domestic restrictions on social and economic activities, including the school closure, were relaxed on 1 July. Nevertheless, Thailand has extended several times the state of emergency. Like other countries, Thailand had not yet relaxed the border restrictions fully in September, although the entry of a very limited number of foreigners, such as business people and medical tourists, has been partially allowed. While daily cases in Thailand has been subdued since then, some countries continue to see the rise of infections and others have been faced with a resurgence of new cases. (as of 7 September)

Table 1.1. An overview of South-East Asia's confinement measures

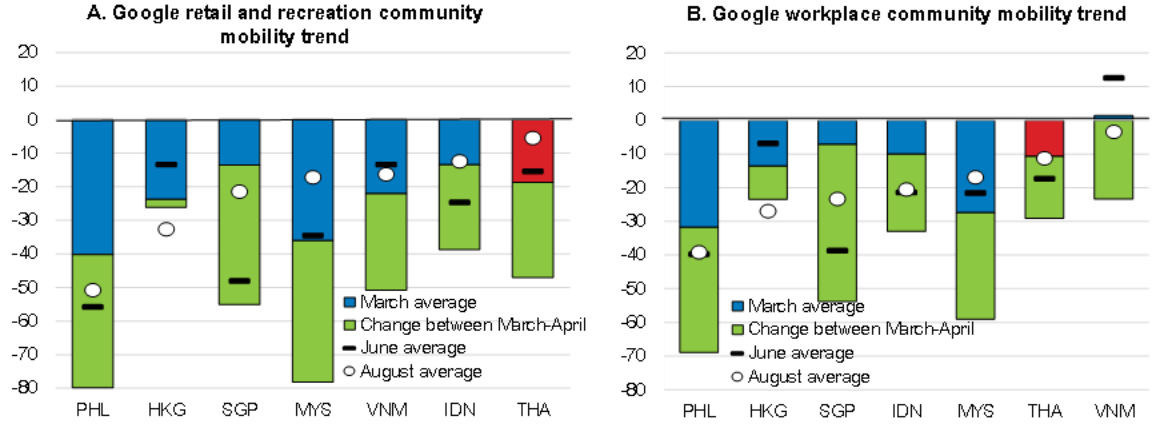
	Thailand	Indonesia	Malaysia	Philippines	Singapore	Viet Nam
Confinement measures	State of Emergency	Large-scale social distancing	Movement Control Order	Enhanced Community Quarantine	Circuit Breaker	Social distancing campaign
Stay-at-home restrictions	√	-	√	√	√	√
Business activity suspension	√	√	√	√	√	√
Regional coverage	Nationwide	Nationwide[1]	Nationwide	Luzon island[2]	Nationwide[3]	Nationwide
Start day of confinement measures	26 March[4]	3 April	18 March	17 March	7 April	1 April
Number of new confirmed cases at the start day of confinement (accumulated)	111 (1 045)	196 (1 986)	120 (673)	45 (187)	66 (1 375)	9 (212)
Start day of partial easing	3 May	-	4 May	15 May	12 May	23 April
Number of new confirmed cases at the start day of partial easing (accumulated)	3 (2 969)	- (-)	122 (6 298)	258 (11 876)	486 (23 822)	0 (268)

1. Indonesia introduced on 3 April a restriction scheme that allows the state governments to impose containment measures. Before that, Jakarta had imposed its own restrictions on business activities and people's movement since 20 March. The confinement measures started in most of the regions by mid-April. Some provinces eased the restrictions from early June.
2. The Philippines changed the regional coverage of the restrictions on 23 April.
3. Singapore eased the international travel restrictions from a certain countries, which include short-term non-business purposes, from 1 September.
4. Thailand started a night curfew from 3 April.

Source: World Health Organisation, national sources.

Figure 1.8. Economic activity hit by lockdown orders has shown a slight rebound

Percentage change from visits in period 3 January - 6 February 2020



Note: The monthly data are averages of available daily data. Countries are ranked by the August average.
Source: Google LLC, "Google COVID-19 Community Mobility Reports", https://www.google.com/covid19/mobility/ accessed on 3 September 2020; OECD calculations.

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Table 1.2. Relief measures were promptly introduced

An overview of the relief packages introduced by the Thai government

Announced packages (Date)	Amounts (% of 2018 GDP)	Major policy measures
Phase 1 stimulus package (10 March, 2020)	THB 400 billion (2.4%)	- Provision of low interest loans by the Government Savings Bank and Social Security Office to affected businesses - Extension of principal repayment periods and reduction of interest payment for those who are affected by COVID-19 - Reduction of withholding tax rate from 3% to 1.5% - 300% tax deduction for salary expenses of SMEs that keep employment from April to July 2020 - Reduction of water and electricity bills - Reduction of social security contribution of both employers and employees
Phase 2 stimulus package (24 March)	THB 117 billion (0.7% of GDP)	- Provision of cash handout of THB 5 000 per month to workers not covered by the social security system (from April to June 2020) - Emergency loan provision to affected people and SMEs by state-owned banks - Delayed personal income tax payment (from June to August 2020) - Postponing of corporate income tax payment - Exemption of import duties on medical products used for COVID-19 treatment - Exemption of personal income tax for medical staffs
Phase 3 stimulus package (7 April)	THB 1.9 trillion (11.6% of GDP)	- Loan payment holiday of six months for all SMEs - Provision of soft loans amounting to THB 500 billion with 2% interest to SMEs - Establishment of a THB 400-billion Corporate Bond Liquidity Stabilisation Fund (BSF) for the central bank to buy corporate bonds - Reduction of banks contribution to the Financial Institution Development Fund, a bailout fund - Enhancement of healthcare capacity (THB 45 billion) - Preparation of relief measures for those who are affected by COVID-19 (THB 555 billion) - Economic rehabilitation including infrastructure investment in rural areas and subsidies to boost domestic tourism (THB 400 billion)

Source: Ministry of Finance, Bank of Thailand.

Even though the first outbreak was contained in mid-2020 and a second wave has not occurred, the economy is projected to contract sharply by 6.9% in 2020, the largest since the Asian Financial Crisis, with a weak recovery in 2021 (Table 1.3) (Box 1.2). Private consumption declined in the first half of 2020 and is projected to remain weak throughout the year. Although the government's relief measures will buttress household incomes, including those of the most vulnerable, high uncertainty about the future course of the outbreak and weak employment prospects will weigh on consumer confidence. Continued health measures to prevent a second wave, such as distancing, will also hamper consumer services activities. The liquidity support in the emergency phase and measures to reduce insolvency risks in the private businesses, notably among SMEs, are expected to mitigate the deterioration of employment. Nevertheless, unemployment is projected to increase to levels unseen since the Asian Financial Crisis. Private investment is also expected to contract sharply in 2020 before rebounding in 2021 mostly in line with external demand and investors' sentiments. Moreover, the record hard drought from the beginning of 2020 will hinder the recovery of the agriculture sector and rural areas.

In addition to the additional government spending related to the COVID-19 outbreak, which is part of the fiscal stimulus packages, the Board of Investment (BOI) introduced several measures, including a 50% reduction of corporate income tax for three years to accelerate investment in the medical equipment manufacturing. Nevertheless, the government should further strengthen the capacity of the public health system, including protective and testing capacity to prepare for a possible second wave of the COVID-19 outbreak, which will help to improve confidence. In case of a new virus outbreak, the government needs to extend the targeted emergency support measures to vulnerable households and sectors. Particularly,

given the importance of SMEs in driving growth, it is essential to extend the support measures to SMEs if the situation worsens. As the crisis continues, policy support needs to shift from addressing liquidity constraints in the initial phase, such as soft loans, to reducing insolvency risks. In the short run, this requires reducing burdens of businesses, such as interest payments, while stimulating the severely weakened demand. Job retention subsidies would also be useful, although it would risk supporting non-viable firms, particularly if used a longer period. In this regard, a loan scheme with the option to convert loans in equity stakes would mitigate the burden of businesses, while helping restore their momentum. It is also crucial to facilitate structural adjustment through reducing excess capacity in less viable sectors and helping shift resources to sectors that are more promising. A number of countries have introduced structural measures for SMEs to transform their businesses amid the rapidly changing environment, such as subsidies to help find new or alternative markets and facilitate digitalisation, including teleworking (OECD, 2020[2]).

Table 1.3. Macroeconomic indicators and projections

Annual percentage changes unless specified[1]

	2017	2018	2019	2020	2021
Output and demand [2]					
Real GDP	4.1	4.2	2.4	-6.9	3.5
Consumption	2.4	4.1	3.8	-1.8	3.1
Private	3.1	4.6	4.5	-3.2	3.3
Public	0.1	2.6	1.4	3.2	2.7
Gross fixed investment	1.8	3.8	2.1	-5.9	5.1
Exports of goods and services	5.2	3.3	-2.6	-19.2	6.0
Imports of goods and services	6.2	8.3	-4.4	-16.4	5.2
Net exports [3]	0.1	-2.5	-0.7	-3.2	0.7
Inflation and capacity utilisation					
Consumer price inflation	0.7	1.1	0.7	-1.1	1.8
Unemployment (% of labour force)	1.2	1.1	1.0	2.9	2.5
Output gap (% of potential GDP)	-1.7	-0.4	0.2	-8.1	-5.7
Public finances (% of GDP)					
Central government fiscal balance	-3.0	-2.2	-2.6	-7.8	-6.8
Expenditures	18.2	17.5	17.8	22.0	20.7
Revenues	15.2	15.3	15.2	14.2	13.9
Public debt[4]	41.1	41.8	41.2	49.8	55.8
External sector and memorandum items					
Oil price (spot market, Brent, USD per barrel)[5]	54.2	71.0	64.2	40.2	40.5
World trade growth (volume)[5]	5.8	3.7	1.0	-9.7	6.1
Trade balance (% of GDP)	7.2	4.4	4.9	7.1	4.6
Current account balance (% of GDP)	9.6	5.6	7.0	4.5	4.9
Gross official reserves (end-year, USD billion)	202.6	205.6	224.3	…	…
Total external debt (% of GDP)	36.7	35.5	34.3	…	…
Money market rate, average, in %	1.5	1.5	1.6	…	…
Ten-year government bond yield, average, in %	2.1	2.7	2.6	…	…
Household debt (% of GDP)	78.3	78.6	79.1	…	…
Nominal GDP (USD billion, at the market exchange rate)	459.2	501.8	539.6	525.9	526.3

1. Through 2019, published data from the Ministry of Finance and Bank of Thailand.
2. At 2002 chain prices.
3. Contribution to GDP growth (percentage points).
4. Based on the definition by the Ministry of Finance.
5. Based on OECD Economic Outlook 107 database.

Source: OECD, Economic Outlook 107 database; Bank of Thailand; Ministry of Finance; IMF, World Economic Outlook database.

As the initial strong recovery is expected to slow, policy needs to shift to supporting sustainable and inclusive growth in the long run. While, in the short run, propping up domestic demand is required, the government will need to shift to targeted measures aimed at shoring up long-term economic growth. To maximise the benefits of these measures, the government should focus its spending on activities that will help to build up the productive capacity of the economy, such as investment in green infrastructure, human capital and digitalisation. The government should also focus on the levels of household debt, which was already high before the outbreak and could become a threat to consumer spending once support measures are withdrawn. To address this concern, while stimulating demand to support employment during the initial recovery phase, it is crucial to create high-wage job opportunities by promoting investment in the growing services sectors, such as logistics, information and digital services, which have shown their resiliency during the outbreak, and by strengthening human capital to support these sectors. More attention needs to be paid to vulnerable groups. As new graduates will severely be affected by the deteriorating job market, to avoid long-term scarring effects for their human capital accumulation, in addition to placement services, provision of skills training and internship opportunities would be useful. While providing income support, the formalisation of informal workers, particularly immigrant workers, should also be advanced (see below).

The implementation of public-private partnership (PPP)-funded and public-funded infrastructure projects, in particular projects within the Eastern Economic Corridor (EEC) area, are expected to be the main driver of investment activities in the medium- and long-term horizon. The EEC is a government initiative under the Thailand 4.0 Plan to revitalise and enhance the eastern seaboard of Thailand. The EEC Act was enacted in 2018 to support the development of Thailand's Eastern regions. Dedicated tax and non-tax incentives have been provisioned to spur business investment in the Special Economic Promotion Zones within the 13 000 square kilometre EEC area (OECD, 2018[3]). Investment projects include two large seaports and a high-speed rail link between Suvarnabhumi and Don Muang International Airports in Bangkok, and U-Thapao International Airport in the EEC area.

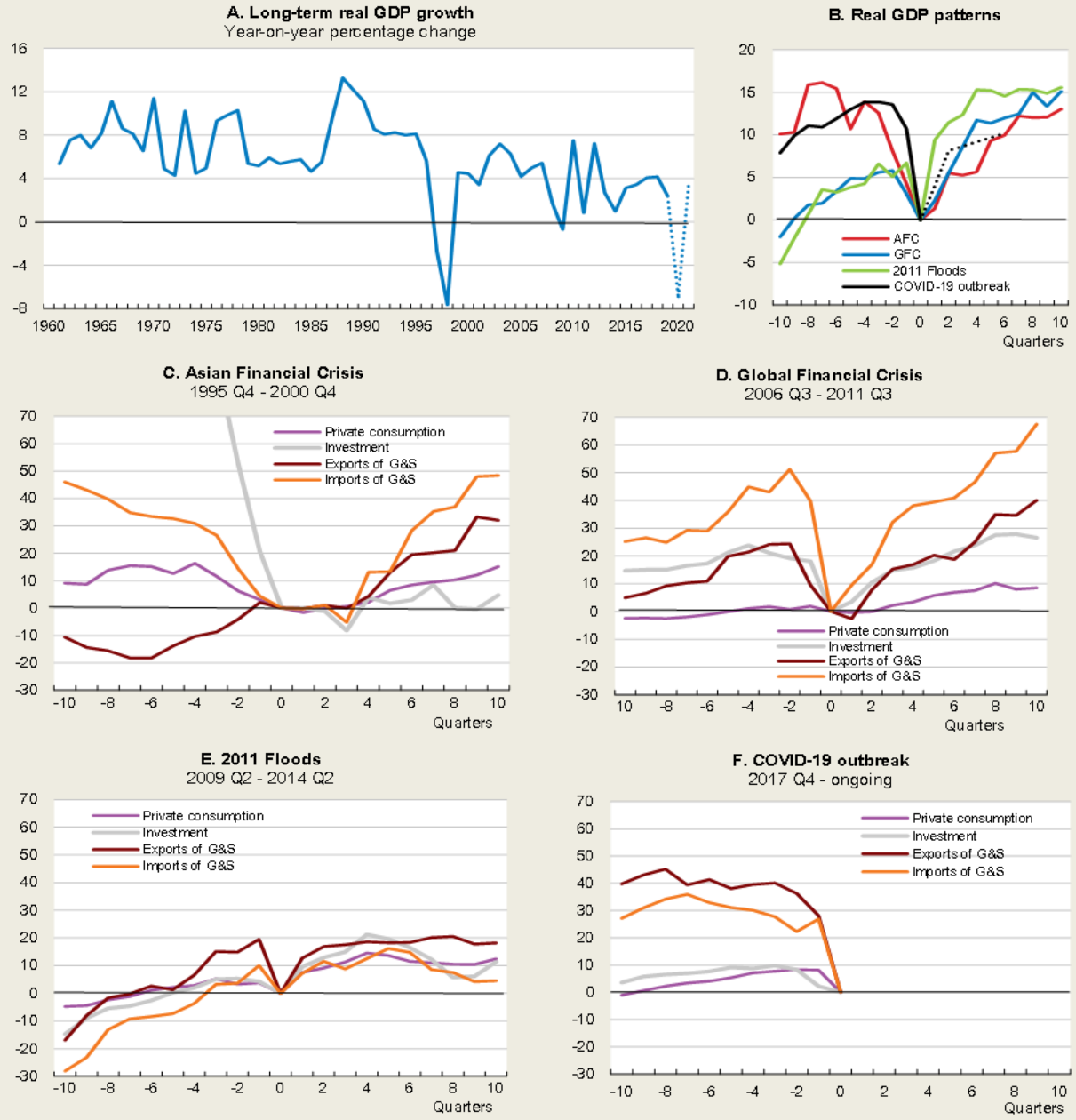
Nevertheless, overall business investment activities, including foreign direct investment, have also been affected by the COVID-19 outbreak. Application for investment promotion measures submitted to the Board of Investment (BOI) in the targeted ten sectors plummeted by 26% in H1 2020 compared with the same period of the previous year. While the medical treatment sector increased its investments by 123% thanks to the sector-specific stimulus measures (see above), the other sectors reduced their investments, except the aircraft sector that has a small share. The BOI has introduced additional measures to stimulate investment amid the COVID-19 outbreak. In May 2020, it strengthened the Thailand Plus package introduced in 2019, extending the period of corporate income tax reduction with additional five years and expanding the investment promotion zones to all provinces. In addition to short-term investment promotions, providing a more friendly business climate, including for the services sectors, would restore better long-term investment prospects (see below).

On the external front, the current account is projected to remain in surplus in 2020, even though it is expected to narrow significantly due to a sharp decline of exports. Sluggish global demand and uncertainties around the COVID-19 outbreak are likely to drag down export performance further before a gradual recovery in 2021. Even if border restrictions were lifted, inbound tourism would not be able to recover in the near future because of tightened health regulations – from quarantine at airports to distancing in various places – as well as the changes in people's behaviour and psychological fear of being infected. This calls for an overdue transformation of the tourism industry towards a greener and higher value-added sector in the recovery phase (see Chapter 3). The strong exchange rate will also affect the competitiveness of Thailand's exports and further drag down exports. According to the Bank of Thailand (BOT), a 1% appreciation of the real effective exchange rate would lower GDP growth by 0.02 percentage points. Merchandise imports are also expected to recover slowly on account of weak investment activities despite the strong baht.

Box 1.2. How did Thailand recover from the previous severe shocks?

Although the COVID-19 health crisis is unprecedented, revisiting previous crises can provide a useful perspective. In the past seven decades, Thailand experienced negative annual growth only three times: during the Asian Financial Crisis (AFC) in 1997 (-2.8%) and in 1998 (-7.6%) and during the Global Financial Crisis (GFC) in 2009 (-0.7%) (Figure 1.9, Panel A). The next lowest growth (+0.8%) was recorded in 2011, when the severe floods hit 65 out of 77 provinces in Thailand including Bangkok.

Figure 1.9. Thailand has experienced three severe shocks since 1960



Note: The curves in panel B to panel F show the percentage change of selected indicators relative to the trough (quarter 0) of each period crisis. Quarter 0 corresponds to 1998 Q2 for the Asian Financial Crisis (AFC), 2009 Q1 for the Global Financial Crisis (GFC), 2011 Q4 for the 2011 Floods, and Q2 2020 for the current crisis. G&S stands for goods and services.

Source: World Bank, World Development Indicators Database; NESDC; and OECD calculations.

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While the pickup of exports led the initial recovery from the two crises, GDP returned to the pre-crisis peak only when private consumption regained its previous peak level (Figure 1.9, Panels B-E) (Table 1.4). Moreover, though recovering together with exports, investment (private and public) restored the pre-crisis level much later than GDP. This was particularly the case for the Asian Financial Crisis, as massive overinvestment had accumulated before the crisis with huge capital inflows from abroad: until now, investment level has not yet exceeded the pre-AFC peak. On the other hand, despite the long spell of the floods from July 2011 to January 2012, the effect was rather short-lived amid robust external demand.

Table 1.4. Length to restore the pre-crisis peak level

Number of quarters from the bottom

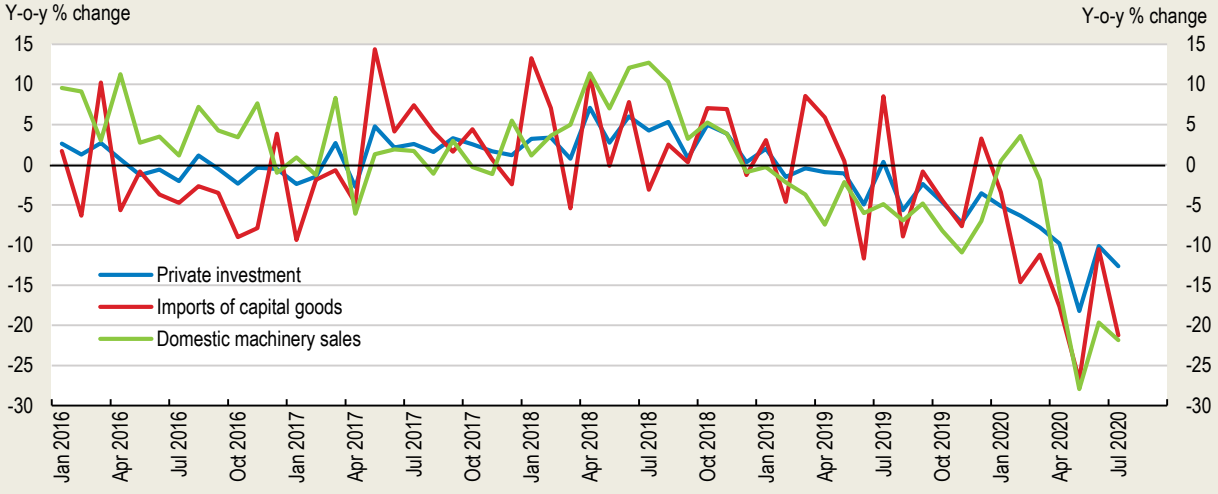
	GDP	Private consumption	Investment	Exports	Imports
AFC	13	12	Not yet	4	9
GFC	3	3	8	7	8
2011 Floods	1	1	1	7	2

Source: National Economic and Social Development Council of Thailand.

Previous episodes highlight three useful lessons for the current crisis:

- Sustaining private consumption is key to overall economic performance. Hence, during the exit from confinement, it will be essential to transition from emergency income support to longer term measures, such as skills upgrading of workers, though gradually (see Chapter 2).
- As investment tends to be weak after a crisis, structural reforms would facilitate the recovery with measures, such as creating new markets and business opportunities, in particular in the digital economy, is crucial. Public investment can also play a catalytic role.
- Foreign direct investment is also crucial for the recovery. The disruption in cross-border trade has pulled down foreign direct investment into Thailand, as estimated by imports of capital goods (Figure 1.10). Thus, securing smooth trade facilitation in the turbulent period would help to secure buoyant foreign direct investment (see Chapter 3).

Figure 1.10. Private investment has contracted with weakening imports of capital goods



Source: Bank of Thailand.

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Risks to these economic projections are tilted to the downside. A second wave of the pandemic, which might be already underway in some countries and could also hit Thailand, would be a huge strain and require further policy action. Downside risks also include the impact of escalating geopolitical tensions and heightened trade protectionism. Although the United States and China signed the phase-one trade deal in January 2020, uncertainties remain about its implementation and future negotiations to resolve other issues and to mend the relationship between the two largest economies in the world. On the domestic front, high household debt level could potentially curtail private consumption and financial sector stability. Low-probability vulnerabilities that could have a severe impact on economic growth are discussed in (Table 1.5).

Table 1.5. Low-probability vulnerabilities could hit the economy

Shocks	Potential impacts
Political instability	Political instability could affect the already-low market sentiment and weaken consumption and private investment further, in particular foreign direct investment.
Natural disasters	Extreme floods and droughts, large tsunamis and a high scale earthquake would severely affect the economy.
High-mortality pandemic	Outbreak of highly contagious diseases similar to COVID-19 would disrupt economic activities, especially in the tourism-related sectors.
Military confrontations	Escalating conflicts in the South China Sea destabilise economic activity in the region and undermine investors' confidence.

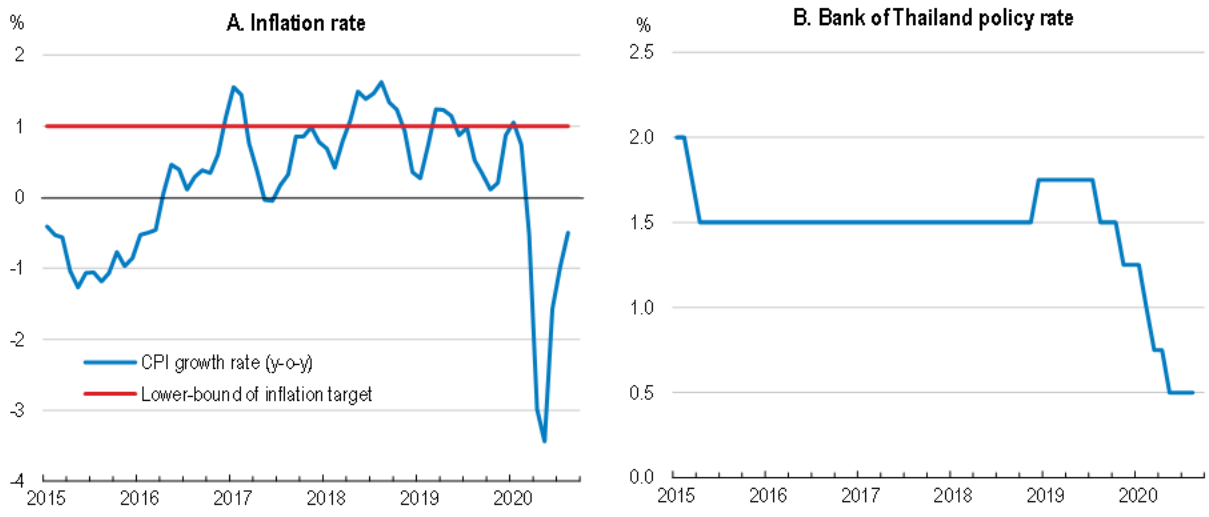
Monetary policy should remain very accommodative

Since 2000, the Bank of Thailand (BOT) has conducted monetary policy under a flexible inflation targeting framework with the objectives of ensuring price and financial stability as well as stable and sustainable economic development. The BOT replaced the core inflation target with a headline inflation target in 2015 to better reflect changes in people's cost of living, with food and energy components accounting for about a third of the household consumption basket. The monetary policy target is now anchored on a yearly headline inflation with a target range approved by the Cabinet.

In recent years, inflation was subdued mainly due to a moderation of wage growth and a decline in energy prices, especially domestic retail prices. Between January 2015 and December 2019, headline inflation was within the current target range of 1% to 3% only during 13 out of 60 months (Figure 1.11, Panel A). In addition, the strong appreciation of the Thai baht from late 2018 to the end of 2019 contributed to low inflation. The low inflation environment provided room for the BOT to pursue an accommodative policy stance, and therefore support economic growth. The central bank had kept its policy rate below 2% since March 2015, and reduced it twice in 2019, to 1.25% (Figure 1.11, Panel B).

Since early 2020, as the COVID-19 outbreak started affecting domestic and external economic activities, the BOT has acted decisively, cutting its policy rate three times to a record low level of 0.5%. Inflation has dropped sharply since April 2020, not only due to low energy prices, but also to weak demand, raising concerns about deflation and fast-deteriorating economic prospects. According to OECD projections, before bouncing back to the lower bound of the target range in 2021, headline inflation is expected to be negative in 2020. Despite the government's stimulus packages, significant uncertainty around the future course of the COVID-19 outbreak will weigh on business prospects. Monetary policy should therefore retain its very accommodative stance and reduce its policy rate further if downside risks materialise. Since room for further rate cuts is becoming smaller, additional monetary policy tools should be considered (Box 1.3). As part of the government's stimulus package, the BOT has introduced a corporate bond purchase programme to provide a liquidity backstop. It also conducted outright purchases of government bonds in March 2020 to address market dislocations. Nevertheless, in case of new downside risks, the BOT should be bold enough to introduce new policy measures.

Figure 1.11. Policy reaction has been prompt when inflation turned negative



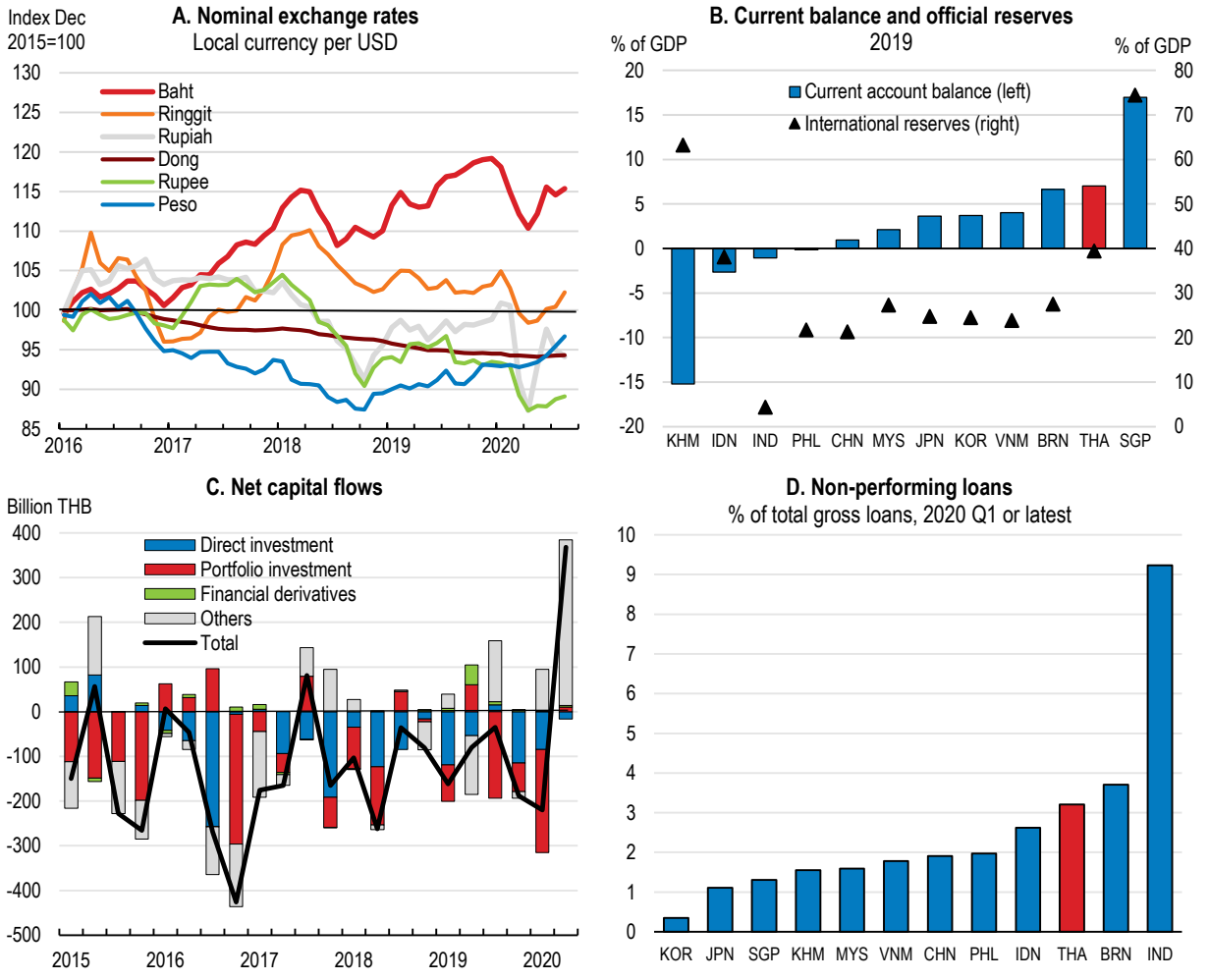
Source: CEIC and Bank of Thailand.

StatLink https://stat.link/ylbpa3

The strong exchange rate has weighed on the competitiveness of Thailand's exports and contributed to lower inflation. In 2019, the Thai baht outperformed many currencies in the Asian region, including Japan's, on account of a strong external position characterised by a high current account balance and high international reserves (Figure 1.12, Panels A and B). Attracted by Thailand's sound economic framework, and in an environment of low interest rates in advanced economies, significant inflows of non-resident capital have been recorded since May 2019 (IMF, 2019[4]) (Figure 1.12, Panel C). In addition, the greater stability in political developments following the formation of the new coalition government in June 2019 and the increased weighting of Thai equities in Morgan Stanley Capital International (MSCI) Emerging Markets Index also led to greater capital inflows. The Thai baht has rebounded again since April 2020, after depreciating together with other Asian currencies at the outset of the COVID-19 outbreak.

The BOT has taken various measures to mitigate the rapid appreciation of the Thai baht. For instance, a new measure was introduced in July 2019 to contain the impact of short-term speculative flows. This measure reduced the ceiling on non-resident baht-account holdings from THB 300 million per non-resident to THB 200 million and strengthened the reporting requirements for non-resident holdings of debt securities, with an obligation to report the final beneficiaries of all non-residents' holdings of Thai debt securities. Since November 2019, the BOT has introduced additional measures to contain inflows, relaxing the limit on export proceeds kept overseas indefinitely. The BOT also relaxed rules to facilitate capital outflows, i.e. allowing retail investors to invest up to USD 200 000 in foreign securities without going through a Thai financial intermediary; making transfer funds abroad more freely for businesses and individuals; and allowing gold trading in foreign currencies.

Figure 1.12. Thai Baht appreciated more than other currencies in the region



Source: CEIC; Bank of Thailand; IMF, International Financial Statistics and Financial Soundness Indicators Databases.

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Box 1.3. The pandemic has expanded central bank's toolkit in emerging market economies

As the economic consequence of the COVID-19 pandemic is unprecedented, central banks, not only in advanced countries, but also in emerging market economies, have introduced new policy measures. In the past, central banks in emerging market economies used the adjustment of short-term interest rates as a main policy tool. Nevertheless, at this juncture, a number of central banks in emerging market economies have already adopted local currency bond purchasing measures to mitigate market dislocations, in some cases without specifying its size (Table 1.6). Studies suggest that these measures have stabilised markets (Arslan, Drehmann and Hofmann, 2020[5]), (Hartley and Rebucci, 2020[6]).

Table 1.6. Bond purchasing measures in Asia's emerging market economies

Country	Measures (announcement date, in 2020)	Size, % of GDP
India	- Outright purchases of government bonds (13 and 20 March) - Swap operation of government bonds (23 April)	0.2%
Indonesia	- Outright purchases of government bonds (1 April)	-
Korea	- Outright purchases of government bonds (19 March and 9 April)	0.1%
Philippines	- Outright purchases of government bonds (10 April)	-
Thailand	- Outright purchases of government bonds (19 and 22 March) - Outright purchases of corporate bonds (7 April)	0.6%

Source: (Arslan, Drehmann and Hofmann, 2020[5]).

It has been argued that central banks in emerging market economies with a sound macroeconomic framework could utilise quantitative easing (QE) (Bruegel, 2020[7]). Thailand is in a good position in this regard. It pursues a flexible exchange rate regime and inflation expectations are well anchored thanks to its flexible monetary policy. Most sovereign bonds are issued in the local currency, while the share of foreign bondholder is smaller (below 20%) than in other emerging countries.

Expanding QE together with a large fiscal expansion without a credible fiscal target should be avoided, as it would harm the well-established credibility of Thailand's macroeconomic policy framework. Nevertheless, enhancing the central bank's policy options is urgently required as the main policy interest rate is approaching the zero lower bound. The already introduced measures, lending operation expansions and bond purchases programmes, could be further enhanced. Besides, some other measures, including forward guidance and yield curve control, could also be considered. Clear communication and transparent policy decision-making are crucial elements for the effective implementation of these new policy tools. A strong collaboration and coordination between government agencies are also important to mitigate their side effects and ensure their effectiveness.

The financial sector appears sound, but risks are rising

Thanks to strong financial system oversight, the banking sector in Thailand has been sound, with limited systemic and contagion risks stemming from interlinkages (IMF, 2019[8]). The BOT has implemented three main forms of macroprudential policies to increase the resilience of the financial system and contain the build-up of systemic vulnerabilities: loan-to-value (LTV) ratios, dynamic loan loss provisioning; and maximum credit limits on credit cards and personal loans.

Although the banking sector has been considered to be well capitalised, with capital adequacy at 19.2% in Q2 2020, well above the Basel III requirement, it is under severe pressure due to the COVID-19

outbreak. Non-performing loans, which have a relatively high share compared with other countries in the region (Figure 1.12, Panel D), have edged up (NPL ratio: from 2.98% in Q4 2019 to 3.09% in Q2 2020), and higher provisioning expenses put downward pressure on banks' profitability. To alleviate the burden, the BOT reduced banks' contribution to a bailout fund, the Financial Institution Development Fund (FIDF), from 0.46% to 0.23% of deposits as part of the government's relief packages (Table 1.2). Moreover, to strengthen the capital buffer, the central bank asked commercial banks to suspend dividend payments and repurchases of their shares (announced in June 2020). Particularly, the emergency liquidity support measures to SMEs should be prudently withdrawn to avoid the increase of business defaults, which would deteriorate banks' loan quality. The tourism industry, which is severely affected, will likely increase nonperforming loans. To address the solvency issues, in addition to mitigate current spending burdens of these businesses, a better coordination with fiscal policy that can directly support vulnerable firms is essential (see above).

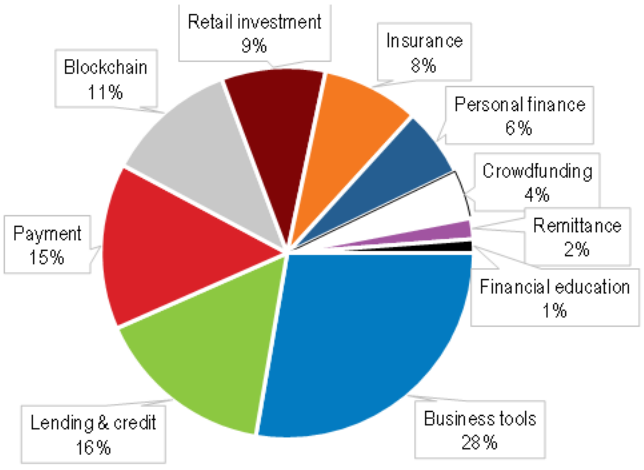
Moreover, household debt is relatively high compared to other countries in the region, even though macroprudential policies helped to contain it (Figure 1.3, Panel F). The BOT has considered household debt as a risk to the financial system and a vulnerability for households, especially those with weak financial conditions. It has also posed a threat to economic growth as higher debt service would limit the ability of households to consume. To mitigate the impact of the COVID-19 outbreak on the debt burden, the BOT adopted emergency debt relief measures, which include delayed loan repayment of households. Besides, a couple of relief measures have been introduced for a recovery phase covering from July 2020 to December 2021, which include the reduction of interest rates charged on credit cards balances and on personal loans and the conversion of loan's term structure. Nevertheless, going forward, it is crucial that the BOT continues to address household debt issues, especially if the economic recovery is delayed, as it affects the solvency of vulnerable households.

Despite a high penetration of financial services, whereby 98.7% of households have access to financial services, a further promotion of financial inclusion remains important to the social development in Thailand. According to a survey conducted by the BOT, 1.3% –equivalent to about 316 000 households – requested, but did not obtain access to financial services in 2018. The situation is more severe for low-income households because 4.4% of them were excluded from formal financial services.

The rise of technology adoption and digitalisation is transforming the financial sector. Advanced and innovative digital applications for financial services, or Fintech, are being adopted to change the way financial services providers interact with consumers and make it more efficient (OECD, 2018[9]). Fintech companies can provide financial services or products through digital platforms that are easily accessible to consumers without face-to-face interaction. Therefore, Fintech can be an important enabler to promote greater and effective access to formal financial products and services to Thai people.

Fintech development in Thailand is one of the fastest in the region with more than 160 Fintech companies registered as of 2019, the fourth largest in terms of number in ASEAN, after Singapore, Indonesia and Malaysia (CCAF, ADBI and FinTechSpace, 2019[10]). Fintech companies comprise of start-ups as well as initiatives launched by a broad range of services providers, from financial institutions, regulators to academic institutions, both in private and public sectors (World Bank, 2019[11]). These Fintech companies are mainly dominant in business services, lending & credit, and payment system business models (Figure 1.13). Given the high penetration rates for mobile phone subscriptions, at 105% (in 2018, ITU), and a strong ecosystem that is supported by a good regulatory framework (Table 1.7), there is a huge potential for Fintech to continue flourishing in Thailand. The on-going regulatory reforms, which aims for a better business environment, should support this development. Nevertheless, Fintech activities warrant vigilance due to its unknown risks and consequences that could potentially threaten financial stability.

Figure 1.13. Fintech companies in Thailand are mainly in corporate finance, lending & credit and payment system



Source: Thailand Economic Monitor, July 2019; World Bank.

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Table 1.7. Regulatory framework for Fintech in Thailand is in line with the regional best practices

Country	P2P Lending	Equity Crowdfunding	Digital Payments	ICO/Crypto	InsurTech
Indonesia	Regulated under bespoke regulation	Regulated under bespoke regulation	Regulated under bespoke regulation	Regulated under existing legislation	Regulated under existing legislation
Malaysia	Regulated under bespoke regulation	Regulated under bespoke regulation	Regulated under bespoke regulation	Regulated under bespoke regulation	Regulated under existing legislation
Philippines	Regulated under existing legislation	Unregulated but not prohibited	Regulated under bespoke regulation	Regulated under existing legislation	Regulated under existing legislation
Singapore	Regulated under existing legislation	Regulated under existing legislation	Regulated under bespoke regulation	Regulated under existing legislation	Regulated under existing legislation
Thailand	Regulated under bespoke regulation	Regulated under bespoke regulation	Regulated under bespoke regulation	Regulated under bespoke regulation	Regulated under existing legislation
Viet Nam	Unregulated but not prohibited	Regulated under existing legislation	Regulated under bespoke regulation	Unregulated but not prohibited	Regulated under existing legislation

Source: The ASEAN Fintech Ecosystem Benchmarking Study, (CCAF, ADBI, FinTechSpace, 2019).

Fiscal management is sound, but could be more flexible

The fiscal framework is transparent

Fiscal management has been prudent, especially in the aftermath of the Asian Financial Crisis 1997-1998. Among others, the fiscal sustainability framework introduced self-imposed fiscal rules, and the Public Debt Management Office, established in 1999, oversees public debt management operations in an efficient manner. Fiscal management was further strengthened recently with the enactment of the Fiscal Responsibility Act (FRA) in 2017 and the adoption of Medium-term Fiscal Framework in 2018. The FRA introduced a set of binding fiscal rules to ensure fiscal discipline through a more transparent public spending practices and better governance of overall fiscal management (Table 1.8).

Table 1.8. Selected fiscal rules under the Fiscal Responsibility Act

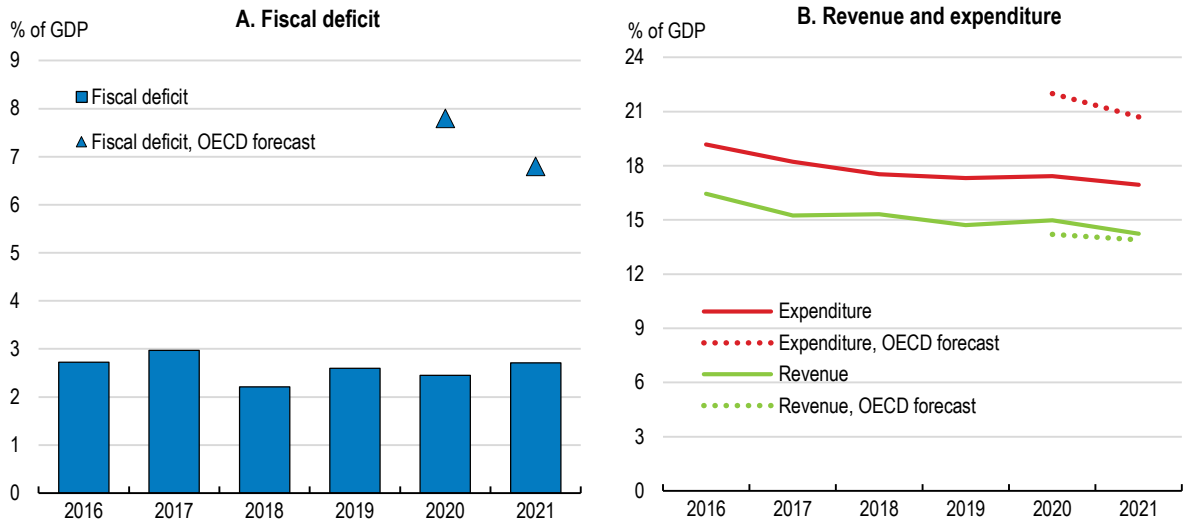
Fiscal rules	Threshold	Status as of December 2019
Public debt	< 60% of GDP	41.2
Debt service	< 35% of revenue	27.16
Foreign currency debt	< 10% of public debt	3.59
	< 5% of exports of goods and services	0.21
Capital expenditure	> 20% of annual budget and no less than FY budget deficit	20.5%[1]
Principal repayment	2.5-3.5% of annual budget	3.0%[1]

Note: 1) 2021 Budget.
Source: Public Debt Management Office and Fiscal Policy Office, Ministry of Finance Thailand.

The government's fiscal position has been healthy with the fiscal deficit decreasing significantly to 2.2% of GDP in 2018, thanks mainly to stable revenue collection amid lower government expenditure (Figure 1.14). The share of external debt is low and declining. Prudent fiscal management in past years has provided the government with ample policy space to react to the COVID-19 outbreak. To finance the phase 3 stimulus package, the government decided to borrow an additional THB 1 trillion (6.1% of GDP in 2018), which is expected to raise public debt to 55.8% of GDP in 2021. Moreover, in August 2020, the government made it possible to borrow an additional THB 214 billion for the fiscal 2020, which ends in September 2020, amid the weaker-than-expected revenue prospect. In case further spending is required due to the resurrection of a severe pandemic, using the available fiscal space would be warranted and would remain within the fiscal constraints, but cost-effectiveness and transparency must be ensured. Moreover, although expenditure has been prudent so far, the decline in the deficit is unlikely to continue as revenue is also declining – a trend that should be reversed in the medium term.

Government spending has been prudent in recent years. However, the quality of the spending mix has deteriorated, as government expenditure growth was largely driven by current spending. Although the government has been complying with the fiscal rule of allocating at least 20% of the annual budget to capital spending since 2017, actual capital spending was much lower (Figure 1.15). Therefore, capital spending needs to be increased to strengthen the long-term economic potential. Given the sound fiscal position and the robust fiscal management framework, the fiscal medium-term trajectory should be made more flexible to allow for more capital spending to improve the economy's growth prospects, particularly in the recovery phase from the current economic downturn.

Figure 1.14. The central government's fiscal deficit has narrowed, but is expected to rise sharply



Note: Data from 2019 are targets set under the Medium-Term Fiscal Framework.
Source: Fiscal Policy Office, Ministry of Finance; Bank of Thailand; and OECD calculations.

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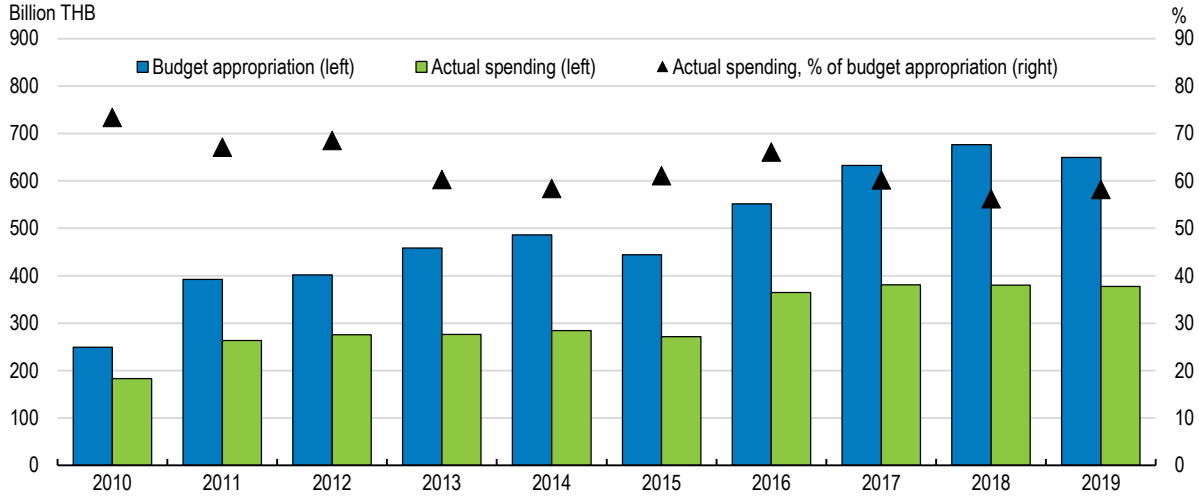
Figure 1.15. Disbursements of public capital spending allocations have declined



Source: Government Fiscal Management Information System.

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Tax revenue can be increased and made more progressive

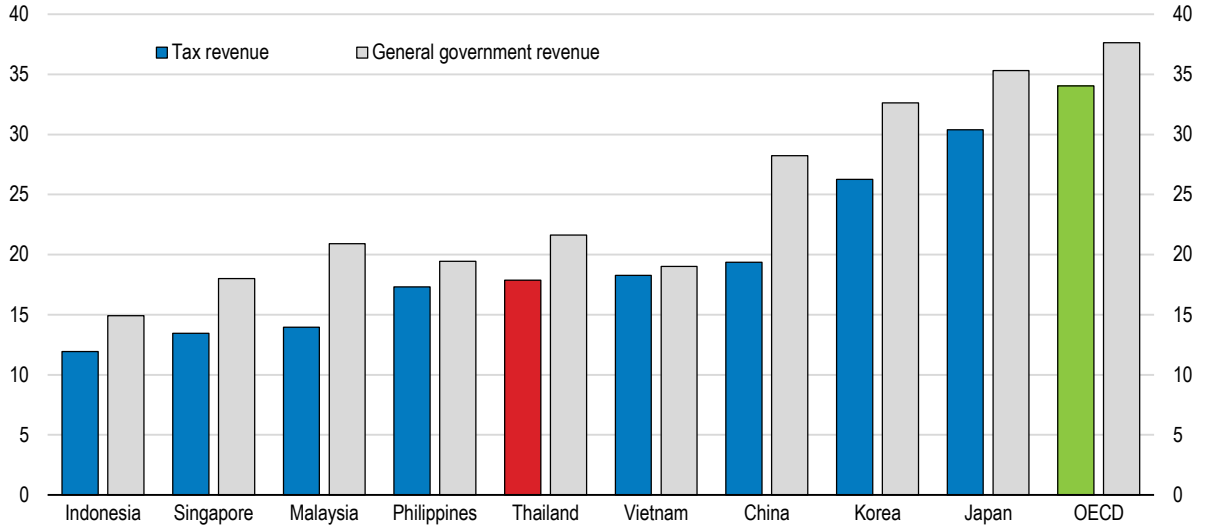
In Thailand, tax revenue collection in terms of its ratio to GDP is relatively low compared to OECD countries (Figure 1.16), partly reflecting the narrow tax base and the high degree of informality, with about 54% of employment in the informal sector in 2019 (National Statistical Office of Thailand) and about 28 million

people unregistered in the income tax system (Pitidol, 2018[12]). Moreover, revenue collection from value added tax (VAT) accounted for almost a quarter of total revenue in 2019 (Figure 1.17).

Although income inequality in Thailand has improved over the past four decades, the tax and transfer system has played a limited role in income redistribution (Figure 1.18) The structure of tax receipts is significantly less progressive than in many OECD countries as Thailand, like many other developing countries, relies heavily on regressive taxes, notably VAT (Matsumoto, 2018[13]). VAT should continue to be an important and stable revenue source in the long run. Nevertheless, while improving its weak social transfer system, overall tax revenue could be strengthened in a more progressive manner.

Figure 1.16. Thailand's tax revenue collection is still low compared to OECD countries

As a percentage of GDP, average 2014-18



Source: OECD, Global Revenue Statistics and Economic Outlook Databases; IMF, Global Revenue Statistics and World Economic Outlook Databases; IMF (2019), Viet Nam - IMF Country Report, No. 19/235.

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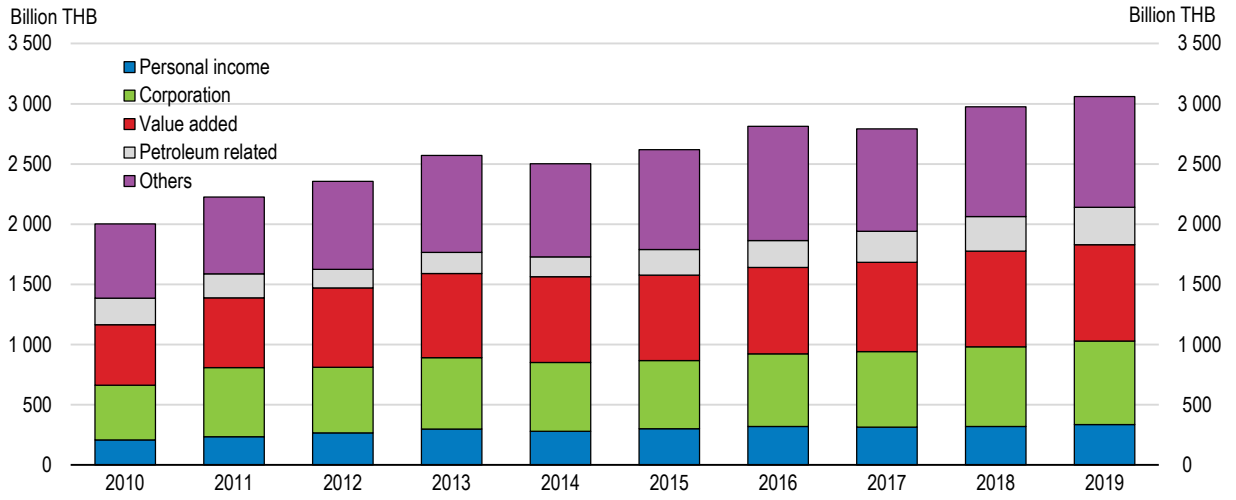
Figure 1.17. The value added tax accounts for almost a quarter of total revenue



Note: The item "Others" includes non-tax revenue and all other taxes not shown in the figure such as excise tax, import-export duties.
Source: Fiscal Policy Office, Ministry of Thailand.

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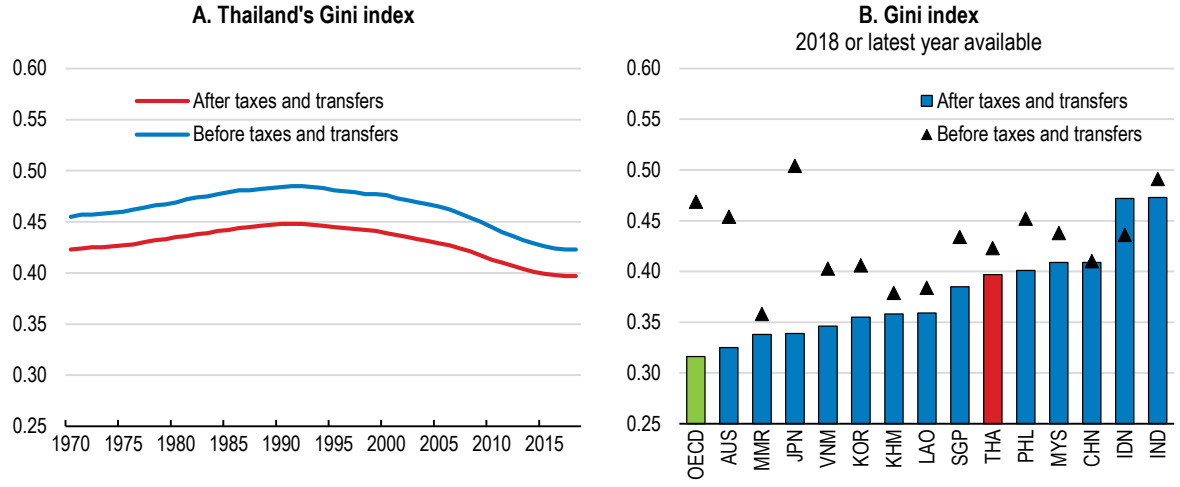
Figure 1.18. The overall level of inequality has declined but the tax-and-transfer system still plays a rather limited role in redistributing incomes



Source: OECD, Income Distribution Database; F. Solt (2019), "The Standardized World Income Inequality Database, Version 8", https://doi.org/10.7910/DVN/LM4OWF, Harvard Dataverse, V4.

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The Thai government has made many efforts to improve tax compliance in recent years. These include the introduction of an automatic risk-based corporate income tax auditing system (World Bank, 2018[14]) as well as an enhanced online platform to facilitate the filing of taxable corporate income (World Bank, 2019[15]). To further enhance its tax base, the Thai government has introduced a new recurrent tax on immovable property under the Land and Building Act 2019, effective from 1 January 2020. The new

property tax will widen the tax base from the previous regime that taxed only the earnings from renting or leasing of properties (Mahanakorn Partners Group, 2019[16]). In addition, it will also help to reduce income inequality as the property owners, which are typically the high-income bracket households, will pay higher taxes on their properties. The new tax is a property tax and replaces the income tax levied on certain income from immovable property. Taxes are levied on individuals or companies that own or possess immovable properties, i.e. land and buildings, including condominiums, based on values appraised by the government and not on earnings from renting or leasing out of these assets. It is essential that the value of property sufficiently reflects the market value and its use (Jangratsameekan and Phijaisanit, 2018[17]). To mitigate the impacts of the COVID-19 outbreak, the enforcement of the new tax was delayed by four months and the tax rates have been reduced by 90%. Nevertheless, the government could fully implement the new tax when overall economic activity will have recovered.

Given the low number of registered personal income taxpayers, only about 30% of total employment, the government should also focus on increasing the collection of personal income taxes, including using technology to increase personal income tax compliance. Currently, the share of personal tax returns filed electronically is about 55%, which is below the OECD average of above 70% (OECD, 2019[18]). International experience with applications of behavioural insights may also help to increase tax compliance. Behavioural insights help to understand the root-causes of non-compliant behaviour and coupled with insights of effective nudges for changing taxpayers' behaviour to increase tax compliance at minimal cost. For instance, by adding a locality specific profiling to tax debt letters, the UK tax authority has successfully increased payments by up to 15 percentage points (OECD, 2019[18]). In Poland, behaviour design was adopted in communicating with taxpayers and all behavioural letters have contributed to higher tax payments (Hernandez Hernandez et al., 2017[19]).

In addition, the implementation of the VAT reform needs to be accelerated to capture VAT revenues on rapidly expanding e-commerce. Thailand has one of the fastest growing e-commerce markets in ASEAN, with its online retail market is expected to increase from USD 2 billion in 2015 to USD 10-15 billion by 2020 (Export.gov, 2019[20]). Existing VAT rules present a number of challenges to securing effective VAT collection on these online sales, particularly where goods, services and digital products are acquired by private consumers from suppliers abroad. As regards the online sale of goods, the volume of imports of low-value goods continues to rise, presenting VAT collection challenges under the traditional customs procedures. These challenges may not only lead to considerable VAT revenue losses but also create unfair competitive pressures on domestic businesses. To address these challenges, the OECD has developed standards and solutions that have been implemented and/or are being implemented worldwide (OECD, 2017[21]), (OECD, 2019[22]). Thailand is planning to introduce measures to tax online sales of digital services by foreign suppliers. Thailand is strongly encouraged to implement reform for the effective collection of VAT on online sales of goods, services and digital products in line with the internationally agreed standards developed by the OECD in the context of the OECD/G20 BEPS Project. These standards were included in the 2015 BEPS Action 1 (Digital Economy) Report and in the detailed implementation guidance that has been developed since then.

The healthcare and social protection systems need to be put on a more sustainable footing

The social protection system in Thailand has evolved over time and now provides a basic level of health care protection and income security to vulnerable households, including a cash transfer that covers a large number of informal workers in the agricultural sector. The main programmes under the social protection system include the Government Officials' Pension System, Government Pension Fund, Civil Servant's Medical Benefit Scheme, Workmen's Compensation Fund, Social Security Fund (SSF), Universal Coverage Scheme, and National Saving Fund. These programmes serve different purposes that safeguard the quality of life of the targeted groups, namely the elderly, women and children, the disabled and disadvantaged. As such, Thailand's social protection system is more comprehensive than those of its peers

and as comprehensive as those of advanced countries (Table 1.9). Nevertheless, there is still room to improve the effective coverage of the system.

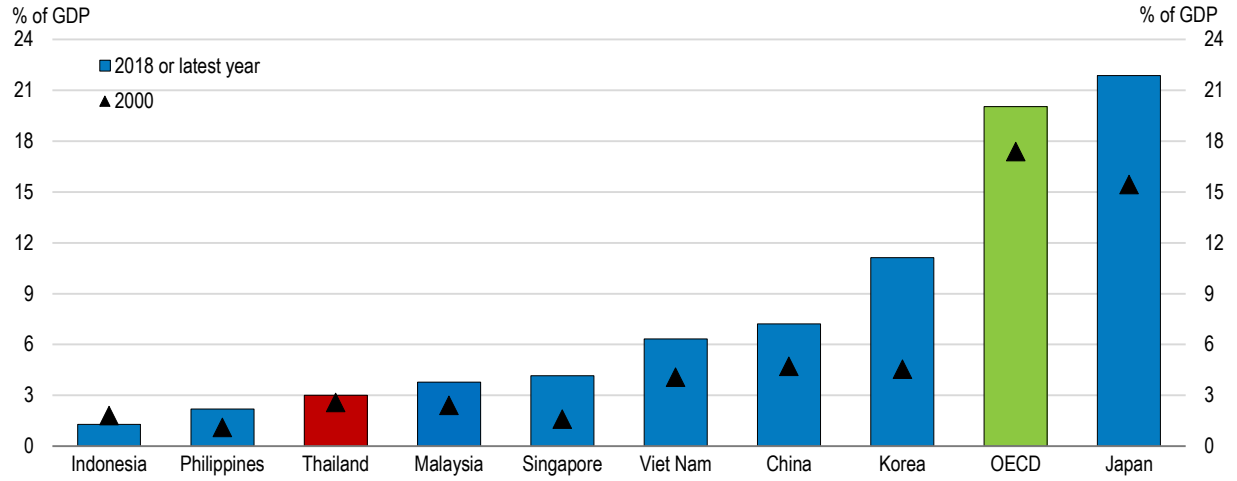
Due to budget constraints, the social protection system only provides a low level of benefits and has a limited impact on narrowing income inequalities (ILO, 2017[23]). For instance, the monthly allowance of THB 600 for a 60-year-old person is only 2.8% of the average monthly household expenditure in 2018 and 22% of the national poverty line of THB 2 710. Therefore, despite its comprehensive coverage, public social protection expenditure in Thailand is one of the lowest in the region and far below the OECD average (Figure 1.19). Given the huge impacts of the COVID-19 outbreak compared with the low level of its social protection system, the government has adopted various measures in the fiscal stimulus packages. Particularly, as unemployment insurance set up in 2004 only covers private sector employees under the Social Security Fund, a direct income support scheme targeted to temporary and self-employed worker (16 million people are eligible) and farmers (10 million households are eligible) was introduced. In the long run, Thailand needs to consider strengthening its social protection system to protect people from socioeconomic disruptions.

Table 1.9. Thailand's social protection is more comprehensive than other Asian countries

Country	Existence of a statutory programme[1]							
	Child and family	Maternity	Sickness	Unemployment	Employment injury	Disability/ invalidity	Survivors	Old age
Selected Developing and emerging countries								
Brunei Darussalam	None	****	**	None	****	****	****	****
Cambodia[2]	None	****	****	**	****	**	**	**
India	None	****	****	****	****	****	****	****
Indonesia	****	**	**	**	****	****	****	****
China	****	****	****	****	****	****	****	****
Malaysia	None	**	**	**	****	****	****	****
Philippines	None	****	****	**	****	****	****	****
Thailand	****	****	****	****	****	****	****	****
Viet Nam	****	****	****	****	****	****	****	****
Selected Advanced economies								
Australia	****	****	****	****	****	****	****	****
Japan	****	****	****	****	****	****	****	****
Korea	None	****	*	****	****	****	****	****
Singapore	****	****	****	None	****	****	****	****
United Kingdom	****	****	****	****	****	****	****	****
United States[3]	****	****	****	****	****	****	****	****

1. **** At least one programme anchored in national legislation, including employer-liability programmes based on mandatory risk pooling.
*** Legislation not yet entered into force. ** Limited provision (e.g. labour code only). * Only benefit in kind (e.g. medical benefit).
2. Currently only public servants receive pensions. A pension scheme for workers in the private sector is yet to be implemented.
3. Maternity and sickness: provisions at state level.
Source: World Social Protection Report 2017-2019, ILO.

Figure 1.19. Public social protection expenditure has much room to expand



Source: OECD, Social Expenditure Database; IMF, Government Finance Statistics Database; ILO (2017), The World Social Protection Report 2017-19, Table B.16, http://www.social-protection.org/gimi/gess/ShowWiki.action?id=594#tabs-3.

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The healthcare system in Thailand is also deemed one of the best in the world, ranked at 6th position out of 89 countries with the best healthcare systems (Ireland, 2019[24]). Thanks to the introduction of the Universal Coverage System (or UHC, universal healthcare coverage) in 2002, which covers 72% of total population, coupled with the Civil Servants' Medical Scheme, Social Security System's Medical Benefits and the Compulsory Migrant Workers' Health Insurance, every Thai citizen has access to essential health services at all life stages (Sumriddetchkajorn et al., 2019[25]) (Table 1.10). These schemes are financed predominately from the government budget and only requires minimum out-of-pocket expenditure by the patient. Therefore, the share of out-of-pocket expenditure to total healthcare expenditure in Thailand is one of the lowest in the region, and even lower than in many OECD countries (Figure 1.20, Panel A). Healthcare expenses related COVID-19, diagnosis, treatment and rehabilitation, are all covered by the Universal Coverage System.

The healthcare services are provided by a diverse mix of public and private institutions (public or private hospitals, private clinics, and public primary care centres). Among hospitals, 25% of them were run privately and public hospitals accounted for 75% in 2015 (one fifth of beds were in private hospitals) (Legido-Quigley and Asgari-Jirhandeh, 2018[26]). Most private hospitals are small with less than 100 beds, but large private hospitals focusing on profitable high-end services, which are also promoted as a medical tourism facility, tend to concentrate in urban areas. The difference in salaries and other benefits has been a cause of internal brain drain from the public to the private sector, particularly during the periods of high economic growth (Asia Pacific Observatory on Health Systems and Policies, 2015[27]). Nevertheless, the private hospital services could also have positive impacts, providing training opportunities, increasing competition, and shoring up the overall services quality through acquiring international accreditation (Lindelow, Hawkins and Osornprasop, 2012[28]). As the government has implemented a range of measures including financial incentives, the geographical distribution of health workers has been improved over the years, although the mandates and financing of the health services between the central and local governments are still fragmented (Lindelow, Hawkins and Osornprasop, 2012[28]).

While the Universal Coverage System is making good progress in ensuring affordable access to healthcare services, it comes with a significant fiscal burden. Like in many other countries in the Asia Pacific region, the growth of healthcare spending in Thailand outpaced that of real GDP during the period 2010-2015

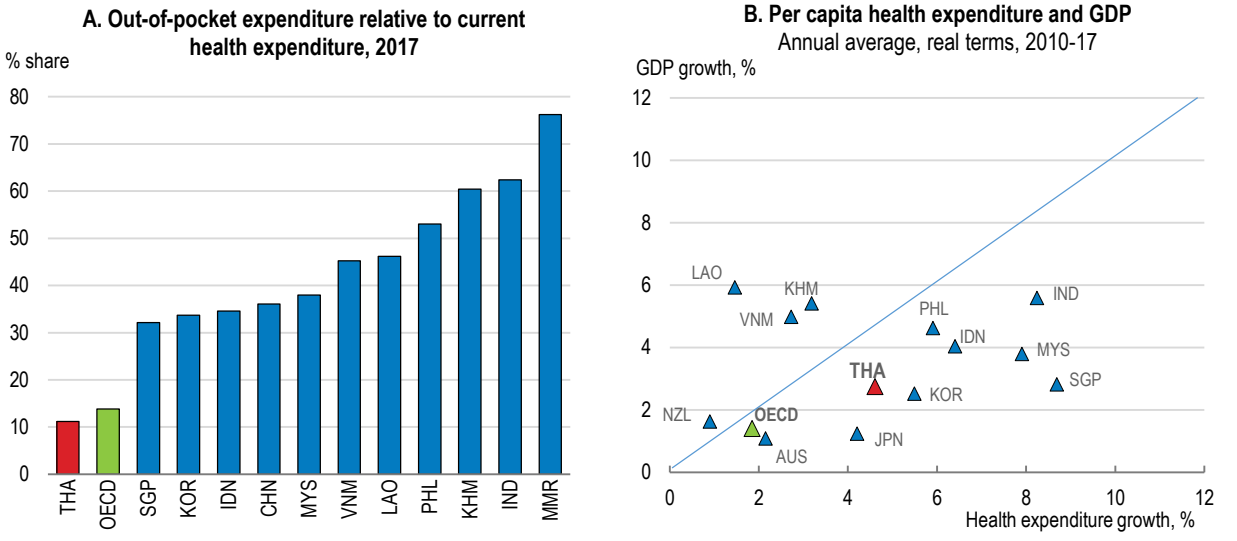
(Figure 1.20, Panel B), resulting in higher healthcare spending relative to GDP (OECD/WHO, 2018[29]). Although healthcare spending accounted for only 3.8% to GDP in Thailand in 2015, rising relative prices and demographic factors (Figure 1.21) such as ageing will contribute to higher healthcare spending in the future (OECD, 2013[30]). The government thus plans to undertake reforms to ensure inclusiveness and sustainability (NESDC, 2018[31]). Given the low out-of-pocket healthcare expenditure, a financing system that is not overly dependent on government funding needs to be considered. This includes introducing a more balanced cost-sharing mechanism. Nevertheless, this reform needs to be implemented in a way that ensures affordability and accessibility for low-income groups.

Table 1.10. Almost all Thai citizens are covered by healthcare programmes

Programmes	2005	2010	2013
Universal Health Coverage Scheme (million people)	47.34	47.34	48.61
Social Security System Medical Benefits (million people)	8.74	9.90	10.77
Civil Servants' Medical Benefit Scheme (million people)	4.15	4.92	4.98
Veterans/private school teachers (million people)	0.13	0.52	0.49
Local officials (million people)	-	-	0.10
Total eligible population[1] (million people)	62.81	63.47	65.04
Population with coverage (% of total population)	96.24	99.35	99.88

Note: 1) Not including displaced persons and the Thai diaspora.
Source: (Paitoonpong, Tasee and Waisuriya, 2016[32]).

Figure 1.20. Healthcare expenditure is rising fast



Source: World Bank, World Development Indicators Database.

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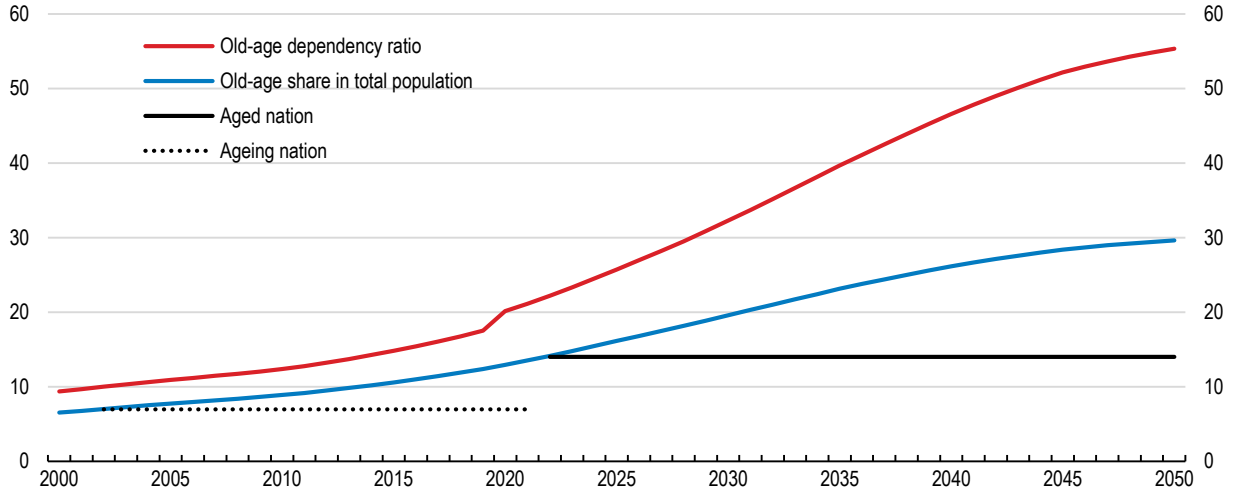
Figure 1.21. Thailand's old-age dependency ratio is expected to increase rapidly



Note: The old-age dependency ratio is defined as the number of persons aged 65 and over relative to the 20-64 years old population. A country is defined as an ageing nation (respectively aged nation) when the share of those aged 65 and plus over the total population exceeds 7% (respectively 14%).
Source: United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019, Online Edition. Rev. 1.

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The pension system needs to be made more inclusive

Thailand's pension system has evolved over the past decades. It now covers both formal and informal workers, including government officials, and has become a relatively comprehensive but fragmented system with a number of different schemes coexisting (OECD, 2018[3]). All private workers are eligible for the Old-age Allowance, a non-contributory pension from the age of 60. In addition, formal workers enrol in the Social Security Fund (SSF), a defined benefit scheme, to which employees, employers and the government contribute. The amount of pension is 20% of the average wage of the last 60 months and 1.5% per additional 12 months of contributions beyond 180 months (capped at 50%). On top of the SSF, the government plans to introduce a mandatory defined contribution scheme (currently, a few voluntary schemes are available). This would address the sustainability concerns of the SSF that have been identified by some studies (the SSF is projected to become unsustainable by 2050), and could pave the way for a comprehensive scheme that covers all private workers. Participation to voluntary saving schemes could also be further encouraged. For example, the coverage of one of the voluntary schemes, the Provident Funds, has increased, but remains low at 20%. While the pensionable age of government employees is 60, that of private workers' is 55. Raising the retirement age would be one option to improve the sustainability of the SSF. However, as the labour force participation of elderly people is already high (for male in 2016: 55-59, 87.7%; 60-64, 68.5%; 65+, 34.6% (ILO estimates)), it would not ameliorate the situation significantly.

Although informal workers are covered by the Old-age Allowance, the benefit is small and not sufficient (see above). Increasing the allowance to cover most of living costs would add considerable fiscal burden and discourage formalisation. Therefore, preparing a supplementary saving scheme to complement the Old-age Allowance is an appropriate approach. The government provides matching contributions to encourage informal workers to participate in voluntary schemes. However, the enrolment is still low. For example, in 2019, only 3.2 million people signed up for the Section 40 scheme of the SSF. Moreover, multiple schemes are run by different government agencies. Even though it is a voluntary scheme,

participating in the formal pension system is an important first step for formalisation. The government could strengthen information provision about the schemes for workers to make an appropriate decision.

Table 1.11. Past OECD Recommendations on fiscal policy

KEY RECOMMENDATIONS	MEASURES TAKEN SINCE MARCH 2018
Continue fiscal prudence and increase revenue to fund impending commitments by boosting tax efficiency, increasing compliance and relying more heavily on less distortive tax bases.	- The medium-term fiscal framework was adopted in 2018. - A new property tax under the Land and Building Act 2019 was introduced in 2019 (though effective from January 2020, the implementation was delayed in four months due to the COVID-19 outbreak). - An amendment to the Revenue Code to collect VAT on online sales of digital services by foreign suppliers was approved by the Cabinet in June 2020 and has been under the deliberations of the Parliament.
Make greater use of alternative financing sources such as infrastructure bonds priced in Thai baht.	- The Thailand Future Fund (TFFIF), an infrastructure fund, which had been established in 2016 to raise funds from domestic and foreign investors, was listed on the Stock Exchange of Thailand in October 2018. THB 44.7 billion was raised by the initial listing. The fund invests in the right to receive 45% of the net toll revenues from the Chalong Rat and Burapha Withi Expressways for 30 years.
Align PPP policies with the OECD's Principles for Public Governance of PPPs.	- A new Public-Private Partnership Act, B.E. 2562 (2019) was enacted in 2019. The law stipulates four principles for PPPs, namely, facilitation, alignment, streamlining and transparency of project procedures, and distinguishes 12 different types of infrastructure projects and public services, including hospitals and schools. It also defines the role of Public-Private Partnership Policy Committee that oversees PPP projects.

Box 1.4. Fiscal reform can ensure fiscal sustainability

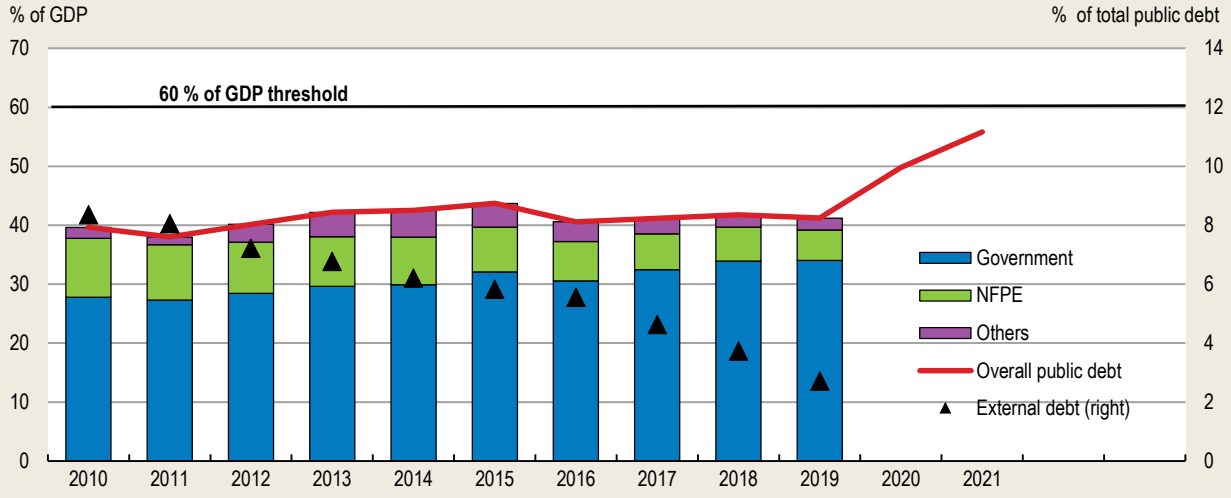
Thailand's public debt stood at 41.2% to GDP as of 2019 and is projected to increase to around 55.8% of GDP by 2021 due to the stimulus packages and lower revenue collections related to the COVID-19 pandemic (Figure 1.22). Nevertheless, public debt is projected to remain below the 60% of GDP binding threshold set under the Fiscal Responsibilities Act. The public debt is well managed. It is predominantly financed through long-term local currency-based debt instruments. This reduces the exposure to unexpected external shocks as well as short-term economic shocks. Moving forward, the debt sustainability is assessed based on the following macroeconomic and fiscal policy assumption (Figure 1.23):

- Real GDP growth: 2020-2021: -1.4% per annum; 2022-2037: 3.2% per annum; average annual growth rate for the period of 2011-2019
- Nominal GDP growth: 2020-2021, 0.2% per annum; 2022-2037, 5.0% per annum, average annual growth rate for the period of 2011-2019
- Nominal interest rate: 5-year average of 10-year bond yield: 2.2%

Four scenarios are considered as follows:

- **Baseline**: The debt-to-GDP ratio is expected to increase to 55.8% by 2021 due to higher borrowing to finance the three stimulus packages announced by the government. The ratio of the primary deficit to GDP is set at 1.3% in 2022 and increase gradually, reflecting the rapidly ageing population structure of Thailand. The debt-to-GDP ratio is projected to increase to 60.2% by 2037, slightly above the threshold of 60.
- **Fiscal reform**: The government undertakes tax reform to collect more revenue and the primary deficit is gradually narrowing until fiscal balance is achieved by 2026, as targeted by the Fiscal Policy Committee in December 2018. The public debt will be on a sustainable path, with the debt-to-GDP ratio declining to 43.3% by 2037.
- **Higher interest rate**: Under this scenario, the nominal interest increases by 100 basis points from 2020. The debt-to-GDP ratio will exceed the threshold and reach 68.3% by 2037.
- **Strengthened social protection**: This scenario assumes that the government further strengthens social protection starting from 2023. Public spending on old age is assumed to increase from 1.7% to GDP in 2019 to 5.7% of GDP by the end of the National Strategy period in 2037 – similar to the estimated potential spending for OECD emerging economies in 2030 (OECD, 2018[33]). The debt-to-GDP ratio increases substantially to 79.0% by 2037. This implies that, given the demographic changes with increased old-age dependency, further strengthening the social protection system without a fiscal reform to increase revenue collection would rather be challenging.

Figure 1.22. Public debt is on the rise, but still below the threshold set by the government



Note: Overall public debt for 2020 and 2021 are OECD forecast.
Source: Public Debt Management Office and Fiscal Policy Office, Ministry of Finance; and OECD calculations.

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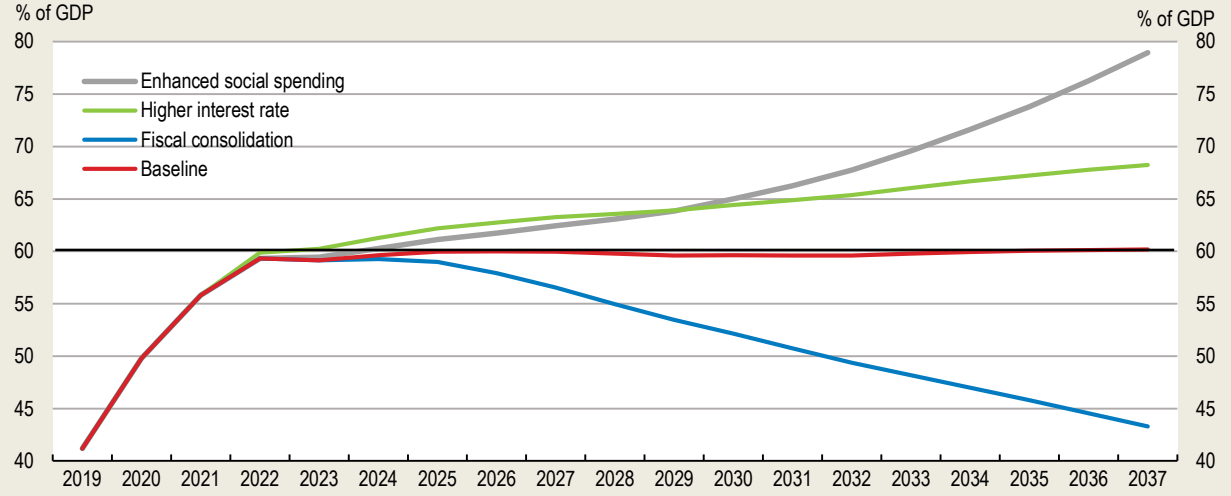
Figure 1.23. Public debt scenarios



Source: Fiscal Policy Office and Public Debt Management Office, Ministry of Finance; and OECD calculations.

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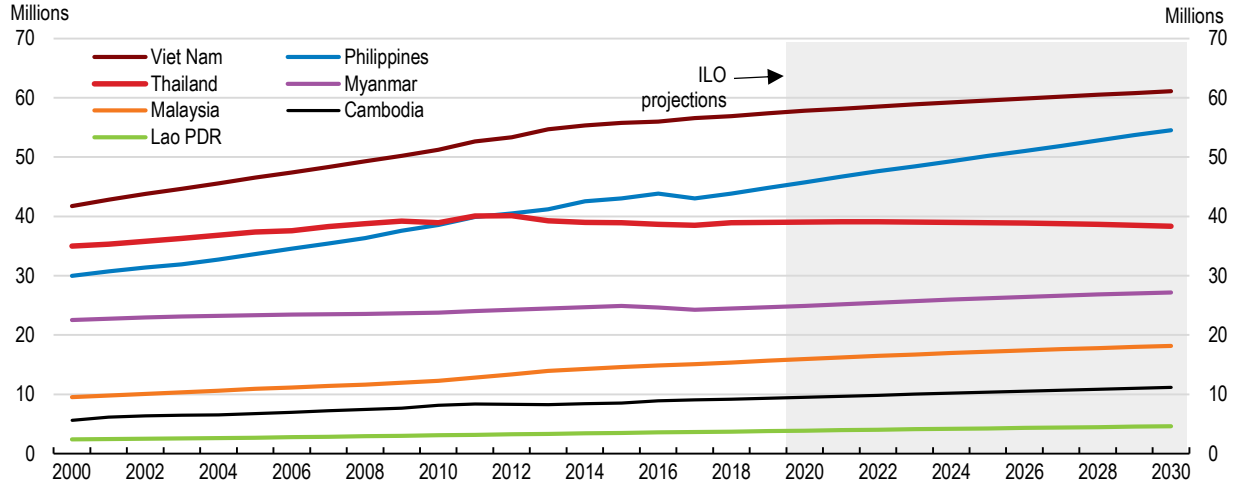
Reforms to boost productivity are required for future prosperity

Achieving a high-income country status against the headwind of the rapidly ageing society requires sustained high productivity growth. The size of the labour force already peaked in 2012, and is projected to continue declining (Figure 1.24), while, in contrast, neighbouring peers will benefit from steady increases in their working-age populations over the next decades. Although employment growth could be achieved by raising the statutory retirement age and increasing the number of migrant workers, future prosperity will depend crucially on boosting productivity. Between 2010 and 2017, Thailand's labour productivity growth was comparable to regional peers (Asian Productivity Organization, 2019[34]). Similar to the other ASEAN countries, the share of agriculture in employment is high at 32% in 2017, but only contributed 8% to GDP. Because productivity is considerably lower in agriculture than in other sectors, boosting the sector's productivity has been a longstanding policy agenda in Thailand, while labour force reallocation from agriculture to other industries would go a long way towards lifting overall productivity. Increasing productivity growth in the manufacturing sector is also needed, after its decline in the recent period. Moreover, the level of productivity remains low in several services sectors, such as the hospitality and restaurant industry, which have become important parts of the Thai economy (Figure 1.25). Empirical work suggests that an inefficient allocation of labour and capital hampers Thailand's growth potential, resulting in a significant gap in Total Factor Productivity (TFP) with the frontier level of the United States (Dheera-Aumpon, 2014[35]). In addition, weak investment drags down productivity growth (Figure 1.26). A recovery from the economic downturn caused by the COVID-19 outbreak should be considered as a good opportunity to put forward the necessary reforms to transform the economy.

Figure 1.24. Thailand's labour force has been declining



Source: International Labour Organisation, ILO modelled estimates.

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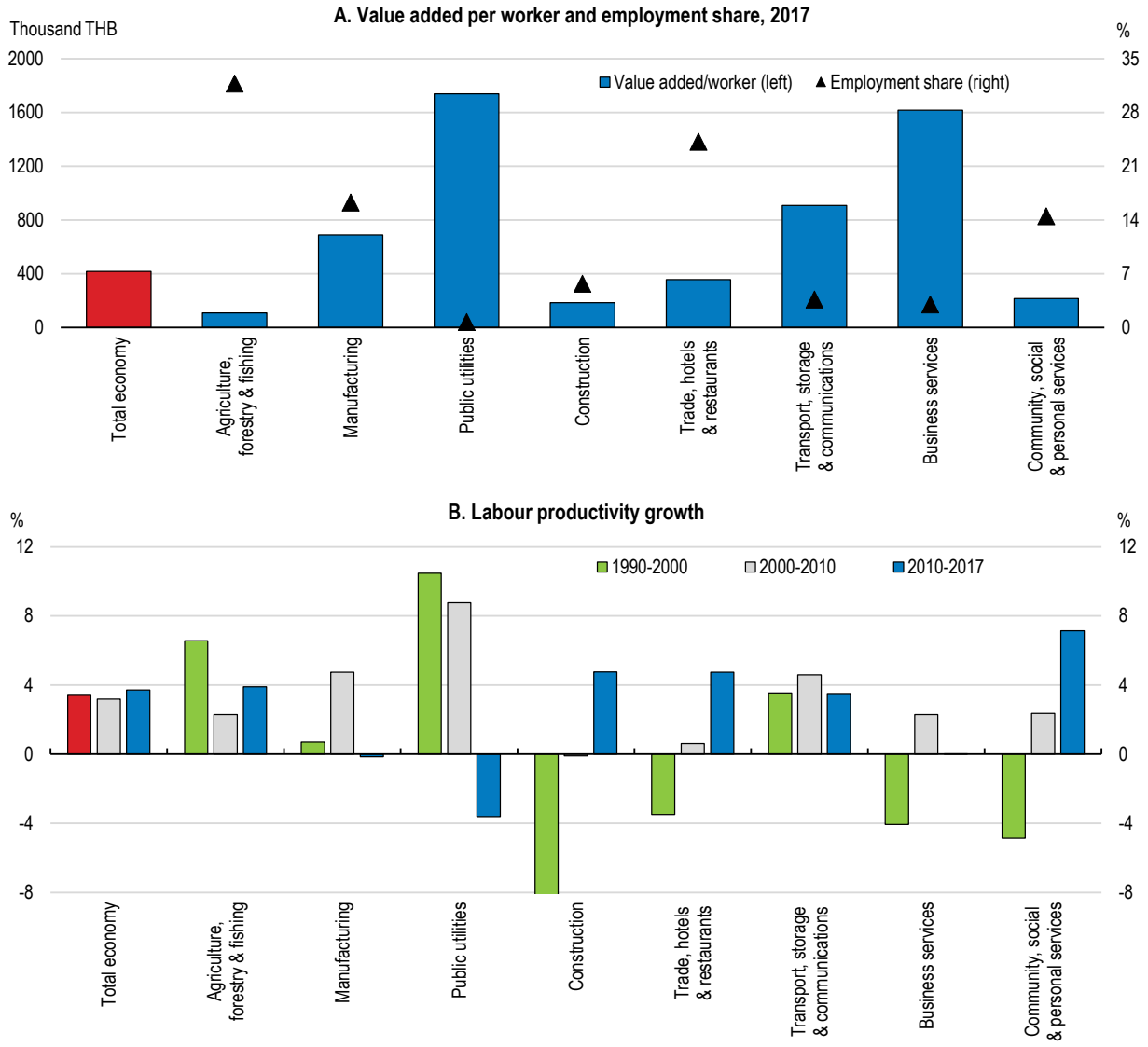
Figure 1.25. Productivity is weakening in some sectors, including manufacturing



Source: Asian Productivity Organisation, APO Productivity Database 2019.

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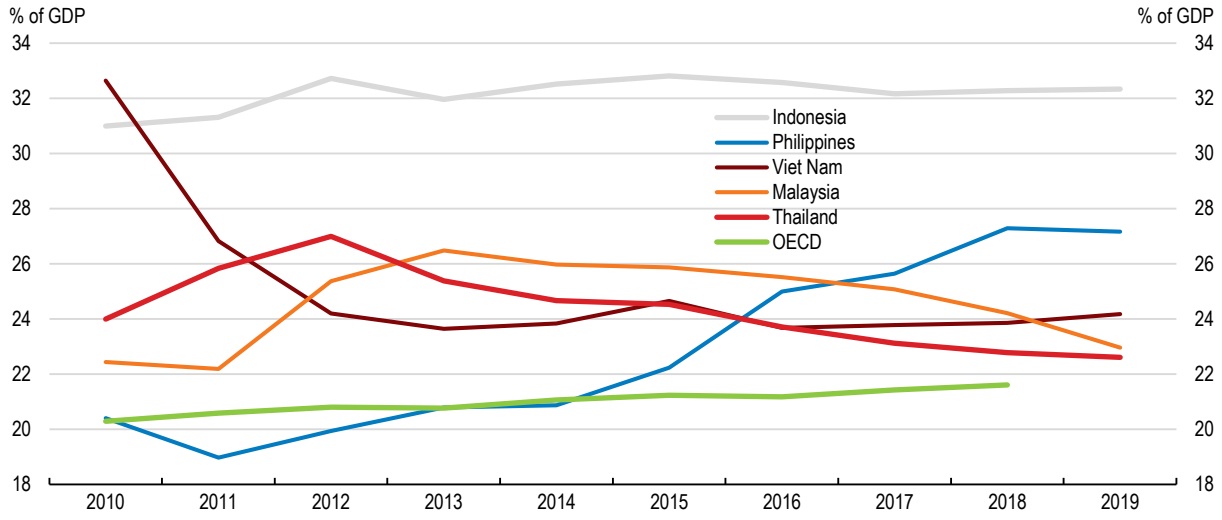
Figure 1.26. Investment in Thailand is low relative to regional peers

Gross fixed capital formation



Source: World Bank, World Development Indicators Database.

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Thailand's manufacturing sector succeeded in strengthening its competitive edge in international markets, and created plenty of jobs. Particularly, active participation in global value chains from the mid-1990s helped Thailand's machinery industry to concentrate its resources in the production processes where it had strengths, thus improving productivity, while importing more intermediate goods and services. However, as Thailand becomes a high-income country, its manufacturing sector will need to upgrade the value added content of its products. Since, modern manufacturing needs a lot of sophisticated services contents, such as R&D and maintenance, improving the productivity of the Thai manufacturing sector requires not only upgrading the production processes in manufacturing but also the modernisation of the Thai services sector (see Chapter 3).

Thailand has significantly invested a lot in human capital, with the goal of improving well-being, inclusiveness and productivity growth. Substantial progress in access to education has resulted in better quality of labour input and is contributing to higher economic growth despite the shrinking labour force (Asian Productivity Organization, 2019[34]). Nevertheless, a swathe of challenges remains, in particular a significant imbalance between the supply and demand for skills. The labour market is already facing substantial shortages in a range of occupations and industries (see Chapter 2), and these shortages will worsen in the future as fast population ageing will decrease the supply of talents, and fast technological change will affect deeply the mix of skills needed by employers. This would also aggravate income inequality. Getting the right supply of skills to address present and future shortages of talents would unleash people's potential and support buoyant long-term inclusive economic growth.

Improving the business environment is key to boosting productivity

Enhancing competition in product markets can bring benefits to consumers, strengthen productivity, and improve export performance. Thailand's competition framework has been appropriately revamped in recent years, but more could be done. In 2017, Thailand revised its competition law in line with international standards, including the elimination of an exemption for unincorporated state-owned enterprises (SOEs), most of which are in the services sector (OECD, 2018[3]). However, the scope of SOEs and the public

interest exemption are still vaguely defined in the Trade Competition Act, and could be clarified (OECD, 2020[36]). As SOEs play a large role in some sectors, notably in services, further efforts are needed to level the playing field. In Thailand, private firms can compete with SOEs under the same terms and conditions with respect to market share, products/services, and incentives in most sectors, including public procurement, but there are some exceptions, such as fixed line operations in the telecommunications sector (OECD, 2020[37])). Utility sectors, such as power, natural gas purchase and distribution, and water supply, are also dominated by SOEs, regardless of recent efforts to open these areas to competition through private investment (Asian Development Bank, 2015[38]). More could be done to reduce the favourable treatment of SOEs, such as the exemption of signboard tax (a tax imposed on any signs or billboards which display a name, trademark or product) (OECD, 2020[37]) and corporate income tax on unincorporated SOEs, although unincorporated SOEs need to transfer part of their profit to the government.

Foreign direct investment (FDI) is an essential source to boost productivity. Driven by FDI, Thailand has become one of global hubs of the automobile industry and a major exporting country. Nevertheless, Thailand is now faced with severe competition from neighbouring countries in attracting FDI (see Chapter 3). As investment rules are stricter than in those countries, particularly in the services sector, which is becoming more important for the economy, easing them could reinvigorate inward FDI (OECD, 2020[39]).

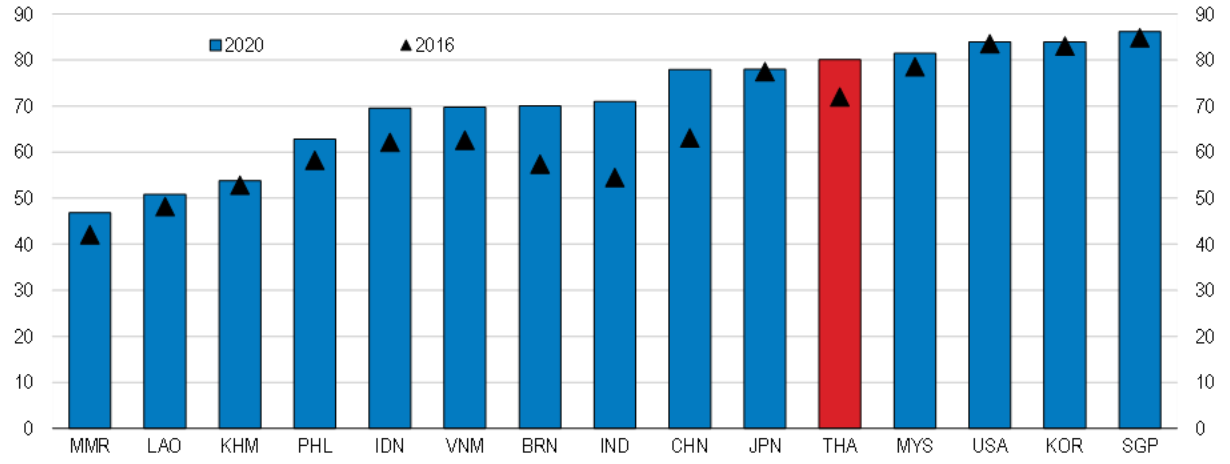
Special Economic Zones (SEZs) have been deployed to modernise Thailand's industrial structure and regain competitiveness. The SEZs are expected to develop several selected sectors, known as First and New S-Curve industries, through targeted FDI and intensified value chains with the clustering of economic activities in a certain geographical area. Thailand designated several SEZs in different locations with specific purposes. In 2016, the government set out a flagship SEZ, the Eastern Economic Corridor (EEC) in the three provinces along the east coast area. The government provides tax incentives and other privileges to both domestic and foreign firms investing in SEZs. Moreover, some restrictions on FDI are waived upon approval by the authorities. SEZs can be considered a useful instrument to experiment with structural reforms, which are sometime difficult to implement at the national level at the outset. Nevertheless, this approach confines activities of domestic and foreign firms to SEZs or in their vicinity. Regulatory and administrative reforms which prove to be conducive to promoting productivity and job creation in special economic zones therefore should gradually be extended to the rest of the economy. On the other hand, extending tax incentives to wider areas would result in tax revenues losses, which should be weighed against the potential economic gains.

Thailand has drastically improved its business environment for the past years. These reforms aim at delivering an operating framework for effective legislative drafting processes (OECD, 2020[40]). The new 2017 Constitution includes Section 77 that requires the use of good regulatory practices, including *ex ante* Regulatory Impact Assessments, stakeholder consultation and *ex post* review. In addition, the Act on Legislative Drafting and Evaluation of Law B.E. 2562 (2019) was enacted to strengthen Regulatory Impact Assessment (RIA) and to introduce mandatory consultation with stakeholders prior to the introduction of new regulations as well as when repealing or amending existing ones. Nevertheless, more could be done. Thailand's laws and regulations are rarely repealed, thus increasing the stock of laws and regulations when new ones are introduced. Many laws and regulations are outdated, resulting in obstacles to do business and sometimes cementing vested interests. To address this problem, in 2017, the government launched a "Regulatory Guillotine" and "Simple and Smart Licence" programme under the leadership of the Office of the Prime Minister. The programme aims at revising or repealing any legal acts that are no longer necessary to ameliorate the business environment. Accordingly, Thailand's ranking in the World Bank's Ease of Doing Business Index improved drastically, from being placed 48th out of 190 economies in 2017 to 26th in 2018 (Figure 1.27). Nevertheless, there is room for further improvement. The on-going second phase focuses on reviewing national licenses and permit requirements. As the phase moves forward, implementation is becoming more difficult as all low hanging fruits have already been taken. Therefore, continuing the review process with an effective implementation scheme is crucial. Enhancing transparency

of the planning and implementation process will sustain strong momentum and strengthen engagement with various stakeholders.

Figure 1.27. Thailand has made progress in improving its business environment

Ease of doing business score, scale from 0 (worst) to 100 (best)



Note: Data in the Doing Business Reports are currently reviewed by the World Bank due to the irregularities found in the 2018 and 2020 reports, and the data for some countries could be retrospectively revised.
Source: World Bank, Doing Business Database, https://www.doingbusiness.org/.

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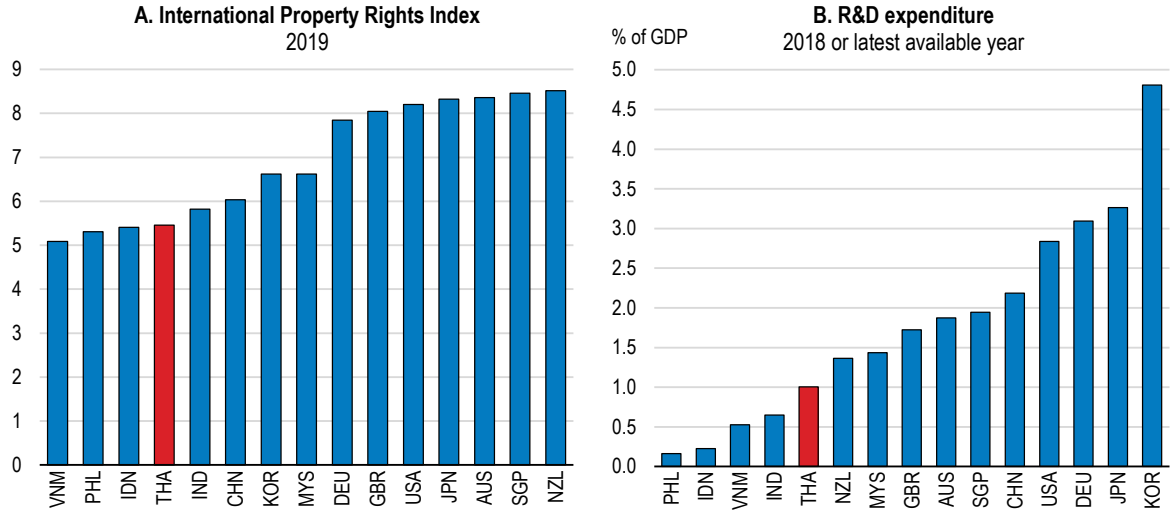
Better intellectual property rights (IPR) protection would stimulate private R&D investment. Thailand aims at increasing R&D investment, which has become more essential for economic growth. Since most R&D investment comes from the private sector, especially foreign firms, intellectual property rights protection is one of the most important aspects of the business environment (Figure 1.28). To this end, the ASEAN Economic Community (AEC) Blueprint 2025 encourages member countries to promote an intellectual property rights policy that is supportive of innovation, including the strengthening of IP Offices. Moreover, IPR protection has become more important in the age of digitalisation, in which the marginal cost of copying is virtually zero. Better protection of IPR is also essential to promote innovative research activities in higher education institutions.

Overall, Thailand is on par with regional peers in terms of intellectual property rights protection, but lags behind Malaysia and China in the area of copyright piracy (Property Rights Alliance, 2019[41]). The government has made several efforts to ameliorate the situation. After acceding to the Patent Cooperation Treaty in 2009, it joined the Madrid System, an international trademark protection scheme, in 2017, and is currently planning amendments of Copyright Act B.E. 2558 (2015) to improve its consistency with international standards. Progress was made by the amended Customs Act B.E. 2560 (2017), which contains stricter punishments on the cross-border trade of pirated goods. Nevertheless, a lot more has to be done. Particularly, the government could further strengthen its enforcement mechanism through better inter-agency co-operation under the initiative of the National Committee on Intellectual Property and the Subcommittee on Enforcement against intellectual property infringements, including the Customs Department. Given the increasing importance of the issue, the capacity of IP Offices should also be enhanced further.

Figure 1.28. Thailand's protection of international property rights is comparable to regional peers



Note: The IPRI scores the underlining institutions of a strong property rights regime: the legal and political environment, physical property rights, and intellectual property rights.
Source: World Property Alliances; World Bank, World Development Indicators Database.

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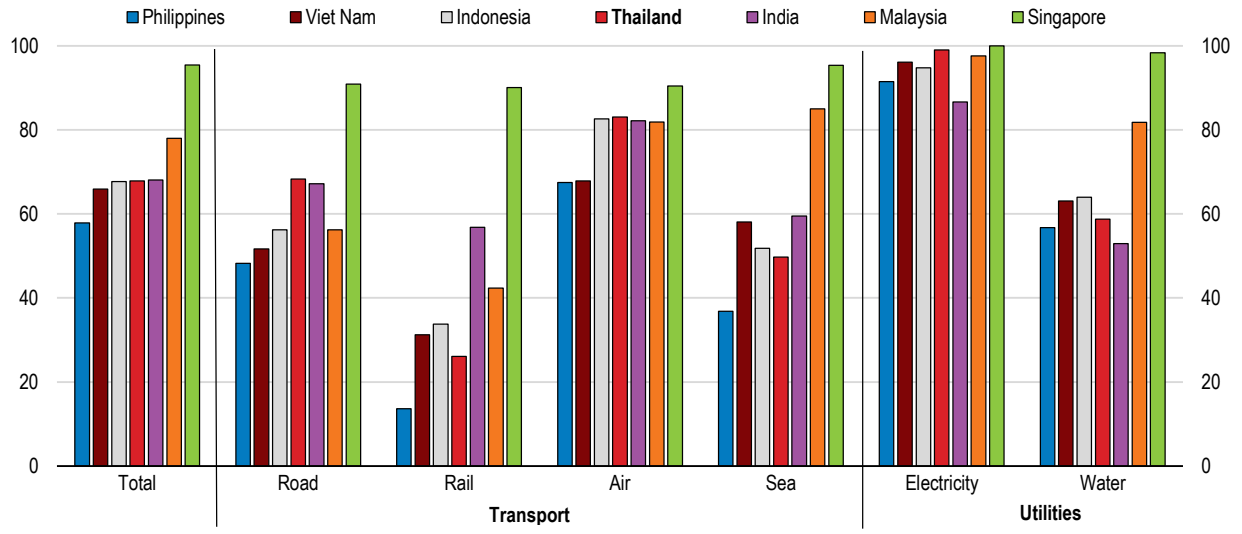
More investment in public infrastructure is needed

High quality public infrastructure can have a positive effect on economic growth through lower transportation costs, which would promote economies of scale, network externalities and enhanced competition. Particularly in Asia, the quality of infrastructure is crucial to join global value chains (GVCs) together with market reforms in the GVC-related sectors, such as logistics services. As Thailand is at the centre of the east–west and north–south highway and rail corridors within the Greater Mekong sub-region, connecting Cambodia, China, Laos, Myanmar, Thailand and Viet Nam, well-organised infrastructure that connects cross-border and domestic transportation networks would help Thailand act as an integral regional hub. Moreover, better infrastructure is conducive to broader social inclusion amid the persistent regional economic and social disparities in Thailand.

The overall quality of infrastructure of Thailand is comparable to regional peers, thought it lags behind Malaysia (Figure 1.29), especially railways infrastructure, which has suffered from underinvestment (Asian Development Bank, 2015[38]). Moreover, because of lack of sufficient public transportation systems, urban transport heavily relies on passenger cars, resulting in massive congestion and air pollution. This brings about longer commuting time and worsening air quality, thus hampering business activity and people's health and well-being. These deficiencies make it important to invest public infrastructure at the appropriate level. Even including public-private partnerships (PPPs), the share of infrastructure investment in GDP is currently lower than that of regional peers.

Figure 1.29. Thailand is lagging in terms of rail infrastructure

WEF competitiveness scores, scale from 0 (worst) to 100 (most competitive), 2019



Note: Countries are ranked in ascending order by the total infrastructure score.
Source: World Economic Forum, *The Global Competitiveness Report 2019*.

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Thailand has made efforts to improve its infrastructure. In Bangkok, public rail transit has expanded gradually since the first elevated train opened in 1999. In 2016, the government approved a Bangkok Mass Transit Master Plan to expand the network further within Bangkok and to its vicinity areas, which will extend the total length from 153km (as of 2019) to 508km by 2029. A high-speed rail link project is envisaged to connect the Eastern Economic Corridor (EEC) to Bangkok. Because a significant portion of the infrastructure projects will be implemented as PPPs, an assessment of risk sharing is crucial to avoid unexpected delays and to prepare for any adverse changes in the economic environment, which would undermine the project's value (ITF, 2008[42]). Thailand's PPP framework is considered supportive and conducive. It came out on top out of 69 emerging countries in the 2019 Infrascope Index (The Economic Intelligence Unit, 2019[43]). Nevertheless, strengthening information disclosure further, including e-access to project documentation, would help private partners to manage risks, while also helping the government to consider the potential size of contingent liabilities. Moreover, as infrastructure investment increases property values of neighbouring areas, the recently introduced property tax will become a useful tool to capture and redistribute economic gains from infrastructure development.

Box 1.5. Seeking for a better practice in PPPs

Chile's experience – A dispute resolution scheme and a present value-of-revenue (PVR) contract

Chile has utilised PPPs intensively to develop infrastructure, such as highways. Learning from the past failures by itself, it has developed one of the world's most sophisticated policy frameworks. Chile placed 2nd in the 2019 Infrascope Index, and its score in "renegotiations" dimension was 100 (the best is 100 and the worst is 0), where Thailand's was 33.

In PPPs, a renegotiation of contract conditions can occur because contract durations are usually much longer than ordinary policy cycles, which would entail moral hazard both in governments and in concessionaires. Moreover, weaker-than-expected demand could also trigger a renegotiation of agreed contract conditions. Since renegotiations are often bilateral and less transparent, they would add additional costs to government finance and sometimes end up with corruption.

Chile amended its PPP law in 2010 to implement two major policy changes. First, it established the Technical Experts Panel, an independent board to review renegotiation disputes, which can issue non-binding recommendations of arbitration within 30 days after an open hearing. Besides, any additional works agreed in renegotiations must now be put out to tender, but the incumbent concessionaires are excluded. Comparing the periods before and after the 2010 reform, the incidence of renegotiations occurring during construction periods dropped drastically from 26-28% to below 1% concerning transport investment.

Since 2006, Chile has expanded its use of present value-of-revenue contracts in addition to fixed-term contracts. In a present value-of-revenue contract, the government sets a discount rate and a fee schedule, then a bidder who presents the lowest present value of revenue can obtain the concession. Contract terms are not pre-determined, but continue until the accumulated revenue meets the initially contracted amounts. Renegotiations under present value-of-revenue contracts have occurred less frequent than under fixed-term contracts, 6% and 57% respectively during the periods of construction and the first eight years of operation together. Although present value-of-revenue contracts are useful for infrastructure with exogenous demand risks, they are less useful for the other types of projects, such are railways and airport operations, as the scheme provides no incentives for concessionaires to increase demand.

Source: (Engel, Fischer and Galetovic, 2020[44]).

Denmark's State Guarantee Model for large-scale infrastructure projects

PPPs are not extensively utilised in Denmark compared with other European countries. Nevertheless, it has developed a unique approach to infrastructure projects with huge financial risks mostly associated with varying demand. A few large-scale transportation links has been built by using this model, notably the Storebælt fixed link (18 km) connecting Zealand and the island of Funen, where Copenhagen is located.

In the Danish model, the government sets up a 100% state-owned company specific to a project, i.e. a special purpose vehicle. The state-owned entity can, however, run the designated project independently from the government, except for the setting of toll charges due to their wider social implications. As the project is treated completely as off-budget, the revenue from toll charges covers all project costs, including operation, maintenance and improvement. The payment period is set for shorter than the lifetime of the infrastructure: normally 30-40 years against more than 100 years of the facility's lifetime.

This approach has some advantages as it makes risk allocation more discernible among related parties.

- Compared with a project directly funded by governments, the designated state-owned company can optimise the whole operations of the project.
- This scheme also gives an incentive to prolong the lifetime of the infrastructure concerned, while a private entity with a fixed-term PPP contract does not have such an incentive.
- Moreover, the government guarantee allows the state-owned company to lower various project costs, including borrowing costs.
- Design, construction and inspection of the project, where the private sector has expertise, are contracted out to them, under the supervision of the state-owned company.

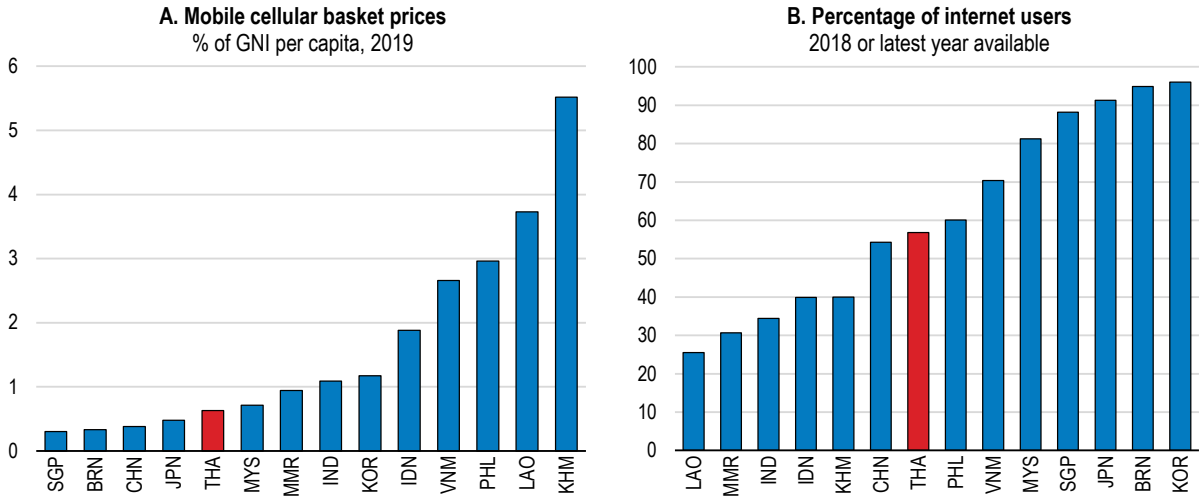
However, in order to maximise these benefits, it is important to monitor regularly the performance of state-owned companies together with giving them clear financial targets. For the state-owned company to enjoy lower financial costs, the credit rating of the government itself should be sufficiently higher, which is sometimes a difficult condition for developing countries. It is also crucial to avoid unnecessary political interferences.

The Danish model has also been applied to some international transportation projects, which connect Denmark with Sweden (the Oresund fixed link, 16 km) and Germany (the Fehmarn Sund fixed link, 18 km).

Source: (Holm and Horstmann Nielsen, 2018[45])

Fostering the digital economy can also help boost productivity and social inclusion. The COVID-19 outbreak has revealed that robust internet infrastructure is indispensable for a range of socio-economic activities from businesses to education. For example, in Thailand, in the second half of March 2020, the download speeds of mobile services decreased by 10-20% compared with the previous weeks (Opensignal.com), while data use, such as demand for online delivery services, increased due to the confinement. To make certain that the benefits from the digital economy are spread across all individuals and businesses, the government must ensure that reliable and affordable access to digital networks and services is appropriately provided. As part of the 20-year Thailand Digital Economy and Society Development Plan, launched in 2016, the government has implemented a number of initiatives. It became the first ASEAN country to introduce 5G technology in 2020, though starting with a few areas. Nevertheless, further efforts are needed. While the gradual expansion of competition in the mobile telephone market has lowered the price of mobile services (Figure 1.30), pushing up the subscription rate of mobile phone to above 100% (although the smartphone penetration rate is likely to be much lower), the usage of the Internet is lower than in some neighbouring peers, such as Malaysia and Viet Nam (Figure 1.30). Making sophisticated digital devices and services more affordable, through enhanced competition and public-private partnerships in infrastructure investment, would help ameliorate the situation.

Figure 1.30. Internet use and mobile services could be further improved



Source: ITU.

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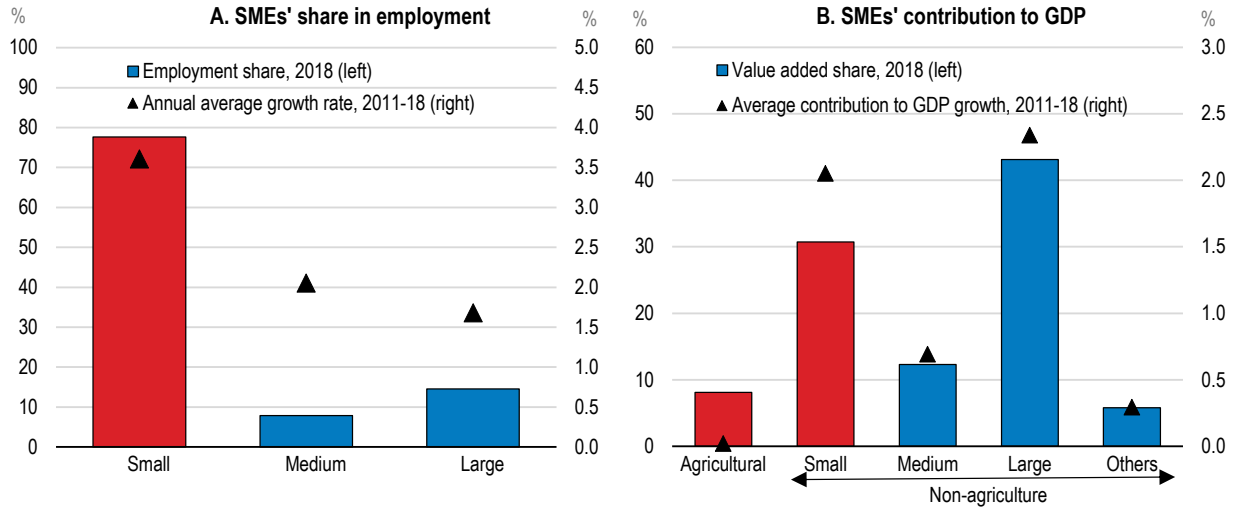
The potential of SMEs is still untapped

The share of SMEs in the economy varies among the ASEAN countries, and Thailand is in the middle of the range. Although the definitions are slightly different, in 2011, the share in employment was 76.7% in Thailand and the highest Indonesia was 97.2%, while the lowest Viet Nam was 51.7%. The share in GDP was 37% in Thailand; the highest Indonesia, 58%; the lowest Brunei Darussalam, 23% (2008) (OECD, 2018[46]). Particularly, in Thailand, micro- and small-sized enterprises (MSEs, less than 50 employees) account for a large and rising share of employment (Figure 1.31). On the other hand, large-sized enterprises have the lion's share in GDP, a sign of a dual economy. Moreover, there are more than 1 million SMEs, most of them engaging in agriculture-related activities (OECD, 2011[47]). However, excluding SMEs engaged in agriculture, the value added created by small-sized enterprises grew faster than that of other firms. This implies that SMEs are an important source of economic growth in Thailand. Thus, addressing the obstacles for SMEs to grow and unleashing their potential would stimulate the overall economy and support socio-economic development.

SMEs are severely affected by the COVID-19 crisis in Thailand like in other countries. Among SMEs, the retail trade and services sectors account for more than 80% of establishments. These sectors, which include retail trade vendors and restaurants heavily reliant on tourism, are severely hit by weak demand and strict health measures. The government adopted a number of emergency support measures, such as loan payment holiday and soft loans. As SMEs are essential driving force of the economy, supporting viable SMEs during the crisis and the recovery phase by unleashing their potential is crucial (see above).

Figure 1.31. SMEs are an important driver of economic activity and employment



Source: Office of Small and Medium Enterprises Promotion (OSMEP) and NESDC.

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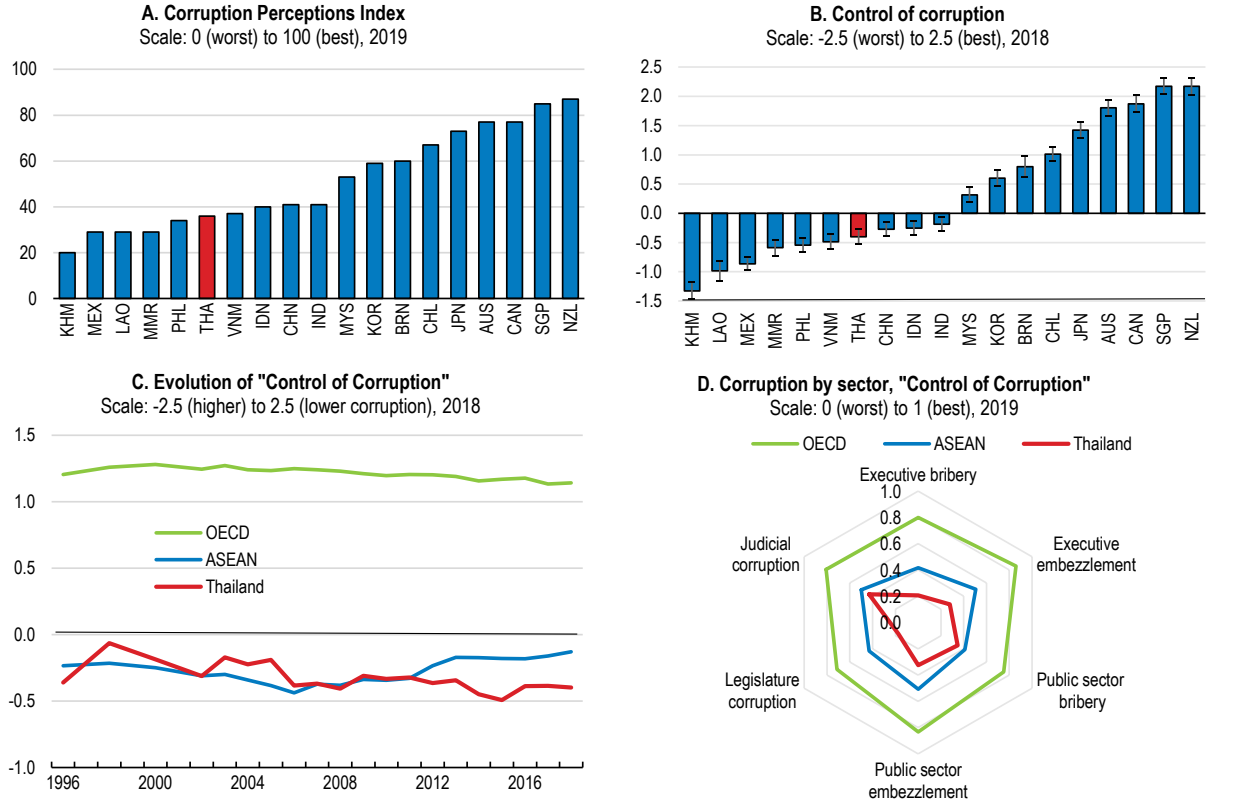
In Thailand, reviewing size-dependent policy measures would be useful. Firm-level research points to threshold effects, whereby firms are reluctant to grow above 50 and 200 employees (Paweenawat, Chucherd and Amarase, 2017[48]). This suggests that some size-dependent policies applicable to SMEs would hinder their growth beyond a certain threshold, although these policies provide SMEs with incentives to expand their businesses. As the definitions of SMEs vary across policies, it is difficult to pinpoint which policy measures discourage SMEs to grow. However, for example, depreciation allowances of business assets are different between general companies and SMEs, the latter of which are defined as a company or juristic partnership with fixed assets (excluding land) of no more than THB 200 million and with no more than 200 employees. SMEs with annual turnover less than THB 1.8 million are exempted from VAT. Moreover, a lower corporate income marginal tax rate could also be considered to avoid discouraging expansion. In Thailand, SMEs with paid-up capital below THB 5 million and an annual income below THB 30 million qualify for a reduced corporate tax rate of either 0%, 15% or 20%, depending on their net profit (THB 1-300 000, 300 000-1 million and over 1 million, respectively), while the standard tax rate is 20%. Besides, a better environment for e-commerce and access to GVCs would also help SMEs to grow (see Chapter 3). Trade facilitation measures promises to be one of the most impactful. A simpler tax regime would also help reduce informality.

Enhanced public sector integrity will help improve the overall business climate

Inefficient public services thrive under a corrupt environment, and thus increase the costs of doing business, hindering efficient resource allocation. Therefore, many countries, including Thailand, are combatting corruption to achieve higher public integrity, which is an essential foundation of high economic growth. Strengthening public integrity would also help the government raise more tax revenues and improve inclusiveness.

Figure 1.32. Thailand needs to strengthen its anti-corruption framework



Note: Panel B shows the point estimate and the margin of error. Panel D shows sector-based subcomponents of the "Control of Corruption" indicator by the Varieties of Democracy Project.
Source: Panel A: Transparency International; Panels B & C: World Bank, Worldwide Governance Indicators; Panel D: Varieties of Democracy Institute; University of Gothenburg; and University of Notre Dame.

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Figure 1.33. Thailand has stepped up anti-money laundering measures

Scale: 1 (low) to 4 (high effectiveness)

Note: The anti-money laundering measures show ratings from the FATF peer reviews of each member to assess levels of implementation of the FATF Recommendations. The ratings reflect the extent to which a country's measures are effective against 11 immediate outcomes. "Investigation and prosecution¹" refers to money laundering. "Investigation and prosecution²" refers to terrorist financing.
Source: OECD, Financial Action Task Force (FATF).

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Thailand has stepped up its anti-corruption policy framework in recent years. In 2003, Thailand adhered to the UN Convention against Corruption (ratified in 2011). Although Thailand is not yet a signatory of the OECD Anti-Bribery Convention, bribery of foreign public officials is an offence in the Organic Act on Anti-Corruption B.E. 2561 (2018). Thailand also displays a generally high-level of political commitment to combat money laundering and terrorist financing (The Asia/Pacific Group on Money Laundering, 2017[49]). The Parliamentary Committee on Corruption Suppression and Prevention was re-established in 2019 for the first time after its 5-year absence, and has been investigating over 130 cases.

In Thailand, various institutions are responsible for integrity policies, weakening enforcement through overlapping and conflicting mandates (OECD, 2018[50]). Therefore, enhanced inter-agency coordination would strengthen corruption prevention and enforcement mechanisms. In the case of anti-money laundering and counter-terrorist financing, the role of the Anti-Money Laundering Office has been strengthened significantly, as it took over the supervisory functions dispersed among the Bank of Thailand, the Security Exchange Commission and the Office of Insurance Commission (The Asia/Pacific Group on Money Laundering, 2017[49]). Improving coordination among anti-corruption and public integrity agencies while maintaining a solid independence of the National Anti-Corruption Commission (NACC) would improve the effectiveness of integrity policies. The NACC is an independent anti-corruption agency established by the 1997 Constitution with a preventive and an investigative mandates. In addition to the NACC, the Public Sector Anti-Corruption Commission (PACC) has the mandate for corruption investigation in the public sector. Running investigations by one single institution, independent from the executive branch, may increase coherence and efficiency of investigations, and strengthen data security. Strengthening the investigative power should also be associated with enhanced independence. Currently, the appointment of the NACC's nine commissioners is based on the advice of the Senate from persons selected by the Selection Committee. Thailand may strengthen the merit-based system for appointing NACC commissioners. In turn, corruption prevention policies in the public sector would benefit from consolidating the mandate within the PACC, which has a high level of trust within the executive branch. Moreover, given the high presence of SOEs in Thailand, the OECD Guidelines on Anti-Corruption and Integrity in State-Owned Enterprises (OECD, 2019[51]) would provide a good framework to review the anti-corruption measures related to SOEs.

Enhancing whistle-blower protection would strengthen the social deterrent to corruption. As dedicated legislation ensures a more comprehensive degree of protection than the one stemming from various laws, a growing number of OECD countries have a specific legal framework (OECD, 2018[50]). In Thailand, although whistle-blower protection is partially covered by the Executive Measures in Anti-Corruption Act, B.E. 2551 (2008) and the Penalty in Witness Protection Act, B.E. 2546 (2003), there is no dedicated legislation. Thailand could consider developing a single dedicated law to protect whistle-blowers. In particular, introducing a broader interpretation of the term whistle-blower would make it possible to offer protection to a larger number of individuals, including former employees, consultants and temporary employees of SOEs.

Making agriculture more sustainable and productive

Although advancing as a manufacturing exporter, Thailand remains one of world's largest producers in agricultural and fishery products, such as natural rubber and cassava. Boosting productivity of agriculture while making it more sustainable will, therefore, help improve the overall economic and environmental performance. Moreover, as agriculture is concentrated in a few regions, improving the sector's productivity would also help ameliorate income inequality among regions.

Pursuing sustainable farming is conducive to stronger productivity in the long run. As a case in point, Thailand's yield of natural rubber is much higher than those of other peers, but has stagnated recently due to less sustainable farming. Amid the commodity boom, Thailand rapidly expanded the cultivation of natural rubber in the past decades. Nevertheless, new plantations from the beginning of the 2010s sprawled to

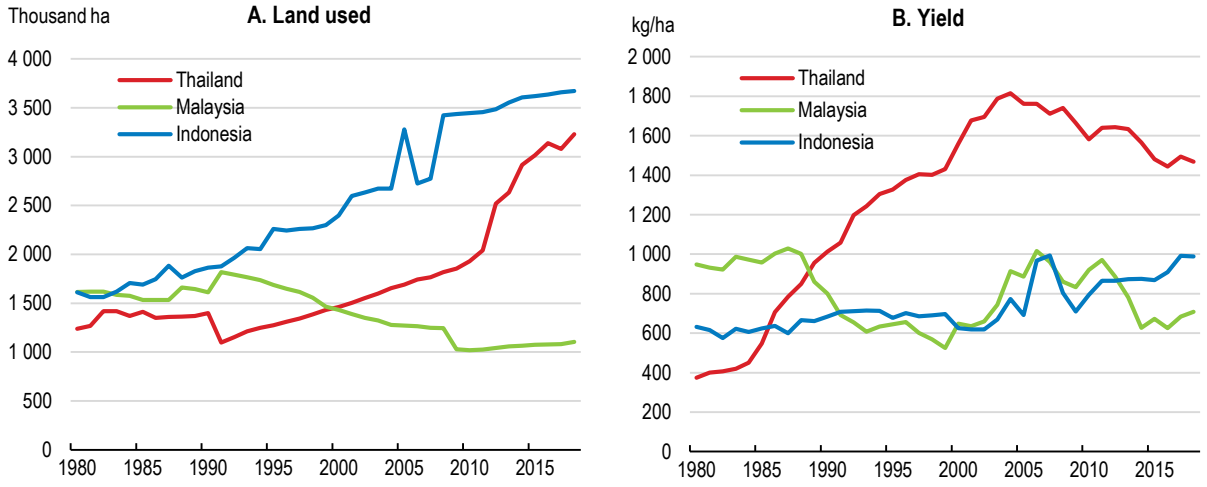
less suitable lands and the subsequent price decline in the early 2010s led to poor management of cultivation (Figure 1.34) (the gestation period of rubber tree is 5-7 years and the yield declines after 30 years). Against this background, in 2019, the government approved a first 20-year plan for the rubber industry that aims to reduce rubber plantations by 21%, which is a useful first step. To maintain the long-term soil fertility, appropriate land use policies would be useful for the agriculture sector based on scientific evaluation of each region's environmental and natural conditions. Moreover, to make the Thai fishery more sustainable, the government has stepped up its efforts to combat illegal, unreported, and unregulated fishing, through the introduction of sanctions. Rigorous implementation and enforcement are crucial to this end.

Better adaptation to climate change is urgently needed to enhance the economic resilience of Thailand's agriculture. One of the imminent threats is frequent occurrence of severe floods and droughts, which have disrupted production significantly, and makes farmers more vulnerable to market fluctuations. The long-lasting drought in 2016 reduced sugar cane production almost by 10% (in weight term): the overall economic cost of the drought was estimated at 0.3% of GDP (Guha-Sapir et al., 2017[52]). Since 90% of freshwater is used by the agriculture sector, the improvement of water management, including an appropriate investment in irrigation/drain systems, is crucial (see below), in addition to the deployment of advanced technologies, such as drought- or submergence-tolerant varieties and precision farming.

To improve profitability, a wide range of reforms have been conducted. Some intervening policies, such as price supports, have been eliminated gradually, while encouraging farmers to shift to higher value-added products. Thailand used to be the world's top rice exporter. However, due to weakened price competitiveness, it is now the second to India and Viet Nam, the third top producer, is catching up by raising productivity. With the aim of reducing low-productivity rice farming, in 2017, the government started a new programme that provides financial support to organic farming. To improve land productivity further, in addition to improved infrastructure, including soft one, such as early weather warning and the dissemination of modern techniques, tackling the issue of prevalent smallholders, who are rapidly ageing, is crucial.

Strengthening the connection with the downstream industry would help the agriculture and fishery sector to diversify its products and improve product qualities. As it aims for a "kitchen of the world", Thailand has a competitive edge in food processing (see Annex 3.B). Nevertheless, the industry may not fully exploit the expansion of the upstream agricultural sector: the value-added share of food processing has been relatively smaller than that of agriculture and stable for the past decade in Thailand (Figure 1.35). In many countries, the lack of competitiveness and capacity in their food processing industries limits the expansion of agriculture, innovation and export capacity in the food system, while in the United States and the Netherlands, the diverse and competitive food processing sector has contributed to agro-food production and export growth (OECD, 2019[53]). Thailand would strengthen its food processing industry through supporting start-ups and encouraging research collaboration among SMEs, academia and foreign affiliates. As Thailand's agricultural products are more diverse, from rubber to raw materials for biofuel, it would give more business opportunities for the food processing industry and beyond with positive feedbacks to the agriculture sector. In early 2020, the government approved the first action plan of the Food and Food Processing Development Plan 2020-2027 aiming at strengthening business-research collaboration, which is the right direction.

Figure 1.34. Land productivity of natural rubber has declined



Source: FAO.

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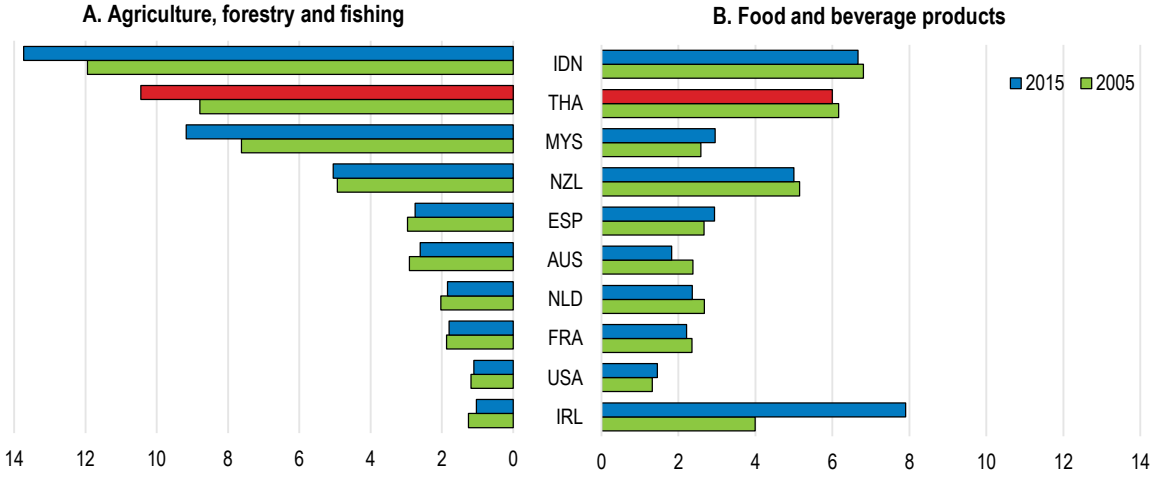
Figure 1.35. Thailand's food processing industry could thrive more

As a percentage of total value added in all sectors



Source: OECD, Trade in Value Added (TiVA) Database.

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Table 1.12. Past OECD Recommendations on structural policy

KEY RECOMMENDATIONS	MEASURES TAKEN SINCE MARCH 2018
Invest in lifelong learning and skills training.	- The Ministry of Higher Education Science Research and Innovation (MHESI) was established in 2019 to promote, support and supervise higher education, science, research and innovation policies, including human capital development. - The Engineering, Technology and Innovation Workforce Development Project, also known as the KOSEN Project, started in 2019 to meet new labour market demands through the development of practical engineers and technicians.
Upgrading business skills and foster greater ICT use in agriculture.	- The Office of National Higher Education Science Research and Innovation Policy Council (NXPO) under the MHESI has conducted since 2019 a survey on job positions and their corresponding functional competencies in the 12 target industries to formulate a skills development policy for the next five years (2020-2024). The survey covers the advanced agriculture and biotechnology sectors. - To mitigate the impacts of the COVIC-19 outbreak, the MHESI launched in 2020 a platform, the Future Skill New Career Thailand, to facilitate the up-skilling and re-skilling of unemployed workers and other affected people. The platform includes curricula for smart farming techniques.
Boost public R&D spending to no less than 1.5% of GDP by 2021, as planned.	(R&D investment increased to 1.1% of GDP in 2018 from 0.5% in 2013.) - The Ministry of Higher Education Science Research and Innovation (MHESI) was established in 2019 to promote, support and supervise higher education, science, research and innovation policies with a better coordination among private, academic and public partners. - The Board of Investment (BOI) adopted in 2019 a new Thailand Plus incentive package to strengthen research and development capacity. The policy measures include additional corporate tax exemption allowance of expenses or investment in STEM training of students and in providing employee training relating to the targeted technologies - The Policy and Strategy for Higher Education, Science, Research and Innovation 2020 - 2027 was adopted. This defines the objectives and key results for the seven granting bodies for research and innovation, the Programme Management Units.
Create a special lower-cost bourse in the Thai stock exchange.	- Live Fin Corp Company Limited, a subsidiary of the Stock Exchange of Thailand (SET), launched in 2020 a web-version of the LiVE Platform, a business platform for start-ups, which aims at providing start-ups with business knowledge and fundraising opportunities through crowdfunding. The platform also intends to offer start-ups opportunities to pitch their products and services. The platform's fundraising facility has been in the process of compliance with required regulations, operational system development and communication with related parties. This process is expected to be completed in 2021.
Ensure effective co-ordination across existing agencies responsible for SMEs development and promotion in the delivery of financial and other support.	- The budget allocated for the Office of Small and Medium Enterprises Promotion (OSMEP) responsible for SME policies increased (THB 1.23 billion in Fiscal 2018 and THB 1.25 billion in Fiscal 2019) in the past years. The programmes of the OSMEP include the continuation of the SME Regular Level programme, which provides SMEs and start-ups with business knowledge and consultations. - The Thai Securities and Exchange Commission (SEC) amended related regulations in 2020 to allow SMEs to offer shares to new investors in the form of convertible debentures with a cap of ten investors and not exceeding THB 20 million. - A range of support measures have been implemented to support SMEs amid the COVID-19 outbreak, including soft loans and tax deferral.
Review regulations on foreign business operations including restrictions on foreign firms' entry and movement of people.	- The Eastern Economic Corridor (EEC) Act was enacted in May 2018, which includes rules to govern expats working in the EEC area and to facilitate foreign investment through a range of incentives. - The Foreign Business Commission reviewed in 2019 the list of restrictive business categories in the Foreign Business Act, and identified four additional activities (telecommunications business, treasury centre, aircraft maintenance and high value-added software development activities) to be removed from the list.

Addressing informality would benefit growth and well-being

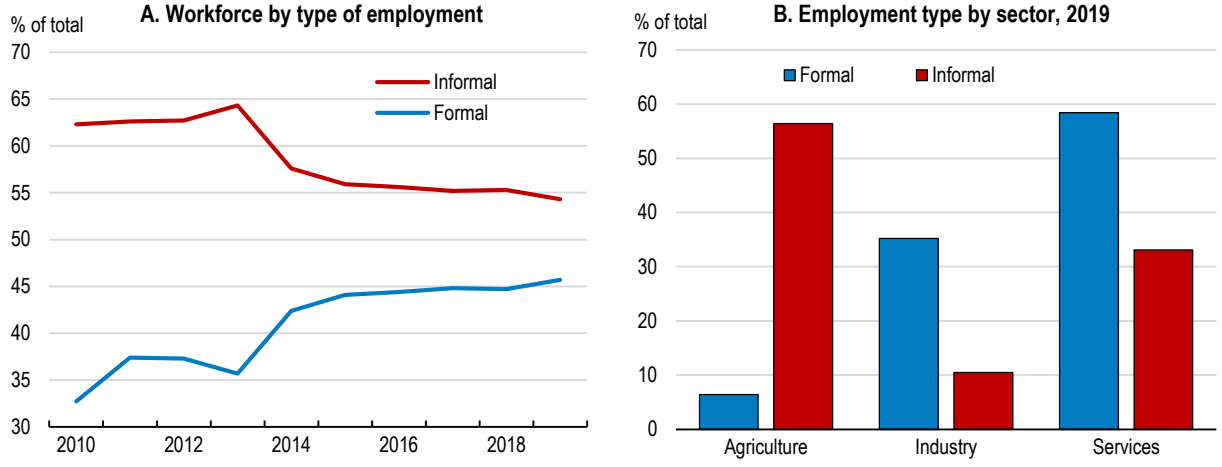
Despite significant social progress, regional inequalities continue to prevail and have recently increased: between 2015 and 2018, the incidence of poverty has increased at the national level from 7.21% to 9.85%, but not in Bangkok where it declined from 2.01% to 1.41% – a sign of rising urban-rural divide. Moreover, labour informality is pervasive. Progress has also been made in gender equality, but it is still uneven. The

government acknowledges that addressing social issues would contribute to improving human capital, resulting in a better well-being of people as well as higher productivity growth. The COVID-19 outbreak hitting vulnerable people harder underscores the importance of these policy issues.

Reducing informality would bring multiple benefits to the economy

In Thailand, although social protection programmes is comprehensive (see above) (OECD, 2017[54]), most workers tend to stay out of the system, as their employers or workers themselves (in case of self-employed) avoid taxes and other government regulations to minimise short-term business costs. This has a wide range of socio-economic implications, including persistent inequality. Informality is associated with occupational health hazards, a lack of investment into workers' human capital and reduced tax revenues, amongst others. As informal firms tend to be smaller to stay under the radar of government enforcement, it is an impediment to productive use of human capital and efficient resource allocation, which results in lower productivity. Therefore, curbing labour informality is most crucial for Thailand (Figure 1.36).

Figure 1.36. Informality remains high and is concentrated in agriculture and services



Note: Workers who are not protected by work-related social security schemes are classified as engaging in informal employment.
Source: National Statistical Office, Informal Employment Survey, various years.

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According to other countries' experiences, a four-pillar approach would be effective to reduce informality (OECD, 2018[55]):

- Equipping the workforce with skills and reducing skills mismatches. This would help informal workers to find formal jobs and informal firms to improve profitability. Thailand exhibits considerable skills shortages in several occupations and sectors (see Chapter 2). In addition to the reforms in education, Thailand needs to enhance access to re-skilling and up-skilling opportunities for workers by reinforcing its vocational education and training programmes.
- Lowering the costs of formality. Thailand's employment protection legislation is stricter than the OECD average and more flexible labour market policies could help reduce informality. Moreover, more flexible product markets together with a more effective legal system and judiciary would encourage the creation of formal jobs. Reducing social contribution and lowering tax burden of formalisation are also effective policy tools, like in the case of Colombia.

- Improving the efficiency of enforcement. The effective enforcement of labour, tax, and social security regulations is the most crucial element in combatting labour informality. In Thailand, the enforcement of labour protection is weak. For example, the minimum wage regulation is not fully applied to workers, despite its overall positive effects on employment. Improving public sector integrity would also help the enforcement of these regulations.
- Protecting vulnerable workers with an effective social protection system, which would encourage workers to formalise, so as to be part of the social protection net. A customised social security system that meets the needs of different informal groups would give more effective incentive for formalisation. For example, a special package for single people to contribute a larger amount of money in the Social Security Fund and get better returns in the retirement period would be useful for Thailand.

To this end, preparing a registry of vulnerable workers helps the government reach out to these people and tailor targeted policy measures. A number of vulnerable people have been registered for the COVID-19 Cash Handout scheme and the State Welfare Card in Thailand. These databases could be utilised to develop precision welfare measures, which would be more effective. The introduction of these policy measures would further be enhanced if implemented with efforts to raise awareness about these measures among those people.

Reducing informality would also benefit migrant workers. Thailand is one of the most popular destinations for migrant workers in ASEAN, mostly from neighbouring countries. Over 3 million migrants, approximately 10% of all employment, are working in Thailand. Immigrant workers are relatively young and active in many fast-growing occupations, implying that they are responsive to labour demand (OECD/ILO, 2017[56]). The agriculture sector, which requires a seasonal workforce, relies a lot on immigrant workers. Despite a significant presence of immigrant workers in Thailand, many of them are not covered by labour regulations and social protection schemes, including the minimum wage. This leaves immigrant workers in informal status with low wage (Dasgupta, Bhula-Or and Fakthong, 2015[57]), and dampens productivity growth, particularly in the primary sector, giving less incentives for firms to revamp their production processes. To address these problems, the government launched a regularisation process to promote formalisation and protection. So far, about 1.2 million people have completed their registration as immigrant workers. Nevertheless, the social protection coverage of immigrant workers remains narrower than that of Thai workers. For example, seasonal agricultural workers do not receive some basic benefits. Expanding the social protection of immigrants would make Thailand more attractive to productive immigrant workers. The government is also stepping up the efforts to eliminate human trafficking.

Gender gaps still persist in some domains despite recent efforts

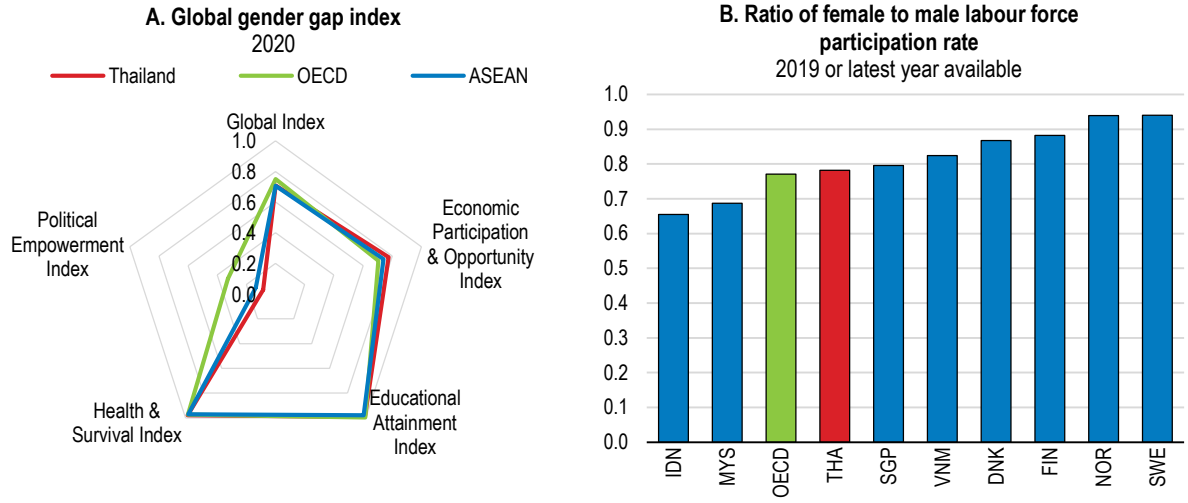
Gender equality has made a steady progress in Thailand over the past years. In the 2020 Global Gender Gap Index (World Economic Forum), Thailand placed 75th out of 153 countries, lower than the Philippines, but higher than other regional peers, such as Indonesia, Viet Nam and Malaysia (Figure 1.37). The score has improved since 2006. Women represent a high share in management of large companies (28%), the second largest next to the Philippines (34%), out of 25 economies in 2019 (Credit Suisse Gender 3000 Report). Particularly, the policy framework has been revamped considerably in recent years. In 2015, the Gender Equality Act was adopted, which legally defines and prohibits gender discrimination. Moreover, the Constitution of the Kingdom of Thailand 2017 requires the equality of rights between men and women.

Nevertheless, further efforts are needed to narrow the gap, as Thailand does not perform well in some dimensions of gender equality. According to the Global Gender Gap Index, Thailand underperforms in political empowerment of women: it ranked 129th out of 153 countries in 2020 (Figure 1.37). This might partly stem from strong stereotypical attitudes about the roles and responsibilities of women and men in political life. In this regard, a number of countries, including some from the OECD have a political quota

system at the subnational or national level, which would increase female political leadership, contributing to a reduction in overall gender discrimination in the long run.

Moreover, economic participation and opportunity for women could be further improved. Female labour participation in Thailand is on par with the OECD average (Figure 1.37). Nevertheless, alleviating various gender-based disparities would reduce discrimination in the workplace, including with regard to recruitment and promotion. For example, while female employees are entitled to paid maternity leave, there are no legal entitlements for paternity leave, paid or unpaid, for male employees in the private sector. Furthermore, although aggregated data does not necessarily capture it well, it has been pointed out that the high concentration of women in the informal employment sector, including as domestic workers, has exacerbated gender inequality, as they are excluded from labour and social security protections, such as minimum wage protection, overtime compensation and maternity leave (United Nations, 2017[58]). This highlights the importance of paying more attention to gender perspective in formalisation. As female workers tend to stay informal, thus avoiding burdensome procedures, the formulation of formalisation measures should be more flexible and less bureaucratic in line with their needs and remove gender blindness by reaching out to those workers (Hearle, Baden and Kalsi, 2019[59]). Thailand's annual survey of informal workers could be utilised as a good platform to collect necessary information.

Figure 1.37. Despite overall progress, Thailand lags behind in political empowerment of women



Note: The gender gap index scores from 0 to 1 where 0 means "large gap" and 1 means "no gap".
Source: World Economic Forum, Global Gender Gap Report 2020; World Bank, World Development Indicators Database.

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The COVID-19 crisis is an opportunity to make the economy greener

Thailand has made improvements in environmental performance and its policy framework. The emphasis has been given to the environmental issues in the government's national development strategy for the past decades. The Promotion and Conservation of National Environmental Quality Act B.E. 2535 (1992) has been the main environmental law in Thailand. The government is now drafting a Climate Change Act, which is expected to be enacted by the end of 2020. The law will cover a wider range of cross-cutting issues and aim at involving multi-stakeholders, including both the public and private sectors. As sustainable development is also a high priority, it also steps up sustainable consumption and production. A new growth model, Bio-Circular-Green (BCG) model, has been promoted to underpin Thailand 4.0, which covers four

industries: the food and agriculture industries; the medical and healthcare industries; bio-related industries; and the tourism and creative economy. The model aims at strengthening the overall sustainability capacity of these sectors, such as energy efficiency and environmental footprints, through advanced technology and innovation, while improving the quality of products and services.

Nevertheless, challenges remain, particularly in water and waste management, air pollution and climate change mitigation (OECD, 2018[3]), (OECD, 2019[60]). To regain strong growth after the COVID-19 crisis, Thailand needs to spend more in growth-friendly investment. In particular, infrastructure that can green the recovery will also be able to transform the economy more efficient, health-friendly and climate-resilient. To this end, despite recent low oil prices, its ambitious targets to step up renewables energy capacity should not be undermined. Investment to enhance energy efficiency, including that of businesses, also needs to be encouraged on this occasion, as it has not shown improvement for the past decade (Figure 1.38, Panel B). Moreover, the crisis also reiterates the importance of the environmental protection in people's well-being. Ambient air pollutants increase mortality, aggravating disease infection including COVID-19, which is also an irretrievable economic loss. On the other hand, according to the Air Quality Index (World Air Quality Project), air pollution in Bangkok, usually worse from winter to early spring, was better in March 2020 than in recent years, partly due to the confinement. The Index, which can show six different pollution levels, indicated "good", the best score, for 12 days compared with six, eight and five days in 2019, 2018 and 2017 respectively in terms of PM2.5. Thailand could also pursue more sustainable and greener tourism (see Chapter 3).

Recurrent floods and droughts harm the resilience of local communities. In the past few years, the policy framework for water management improved significantly. The National Water Resources Act B.E. 2561 (2018) effective in 2019 has enhanced the mandate of the Office of the National Water Resources (ONWR). The ONWR serves as a secretariat of the National Water Resources Committee chaired by the Prime Minister, and is a key pillar of water resource management (including disaster prevention and recovery) at all levels of the government. In terms of water quality, improving wastewater treatment capacity at the local government level is duly needed, as Thailand has only 105 main household water treatment stations and some of them do not operate at full capacity. The lack of economic incentives to treat water also needs to be addressed. The government could utilise the new framework to strengthen the supports to local governments in adopting the polluter pays principle, including the enhancement of public awareness. Moreover, an economic instrument, such as collecting fees that reflect costs of water production, or charging the agricultural sector for water fees, could be considered. Better water management would also improve overall environmental quality of local communities, which embrace tourist attractions.

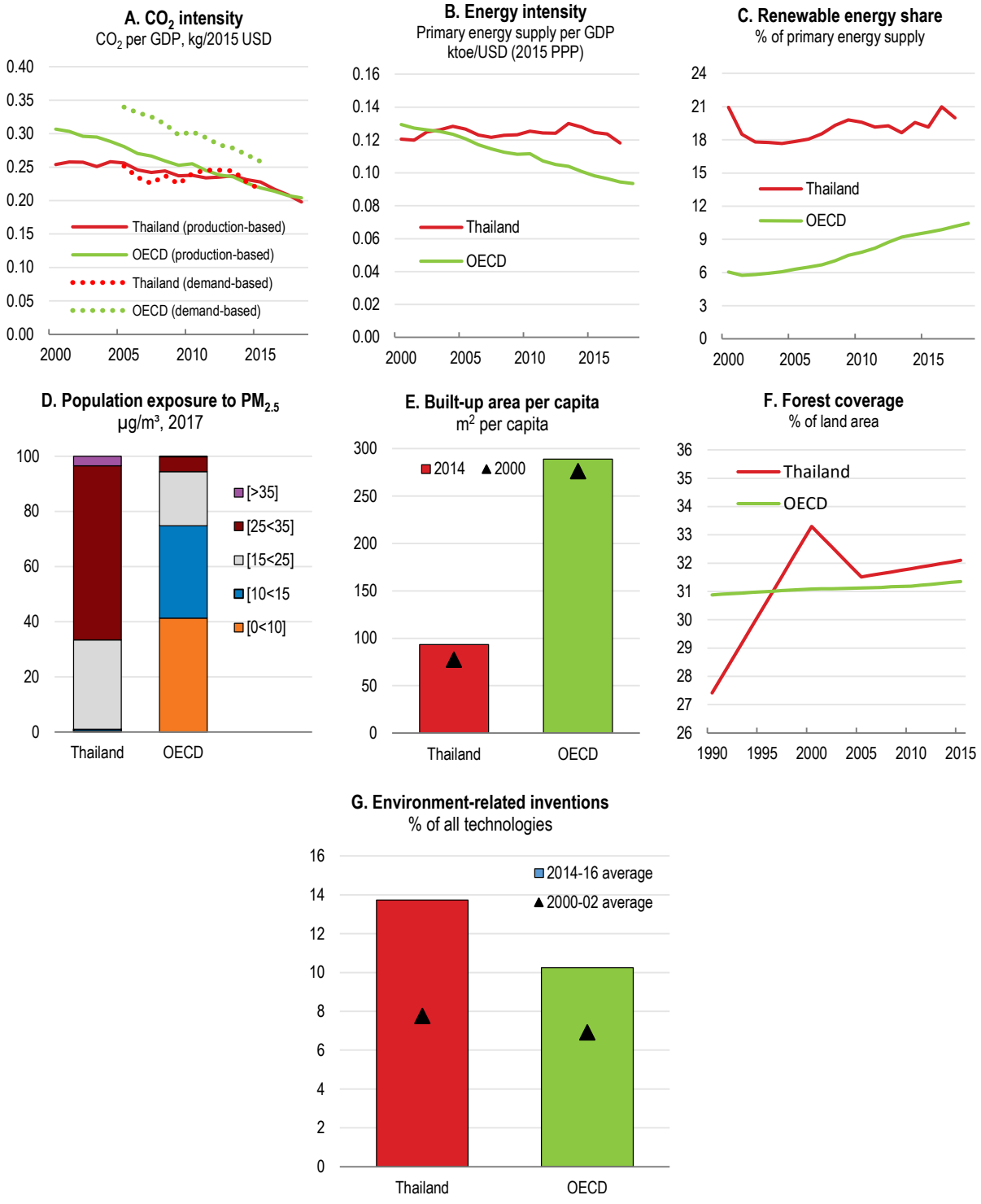
Air pollution remains worse in Thailand than in other countries (Figure 1.38, Panel D). Industrial activity, vehicle traffic in urban areas, agricultural burning in the Northern district and transboundary pollution are major sources of air pollution. The government has stepped up a range of policy measures to damage the harm, such as the extensive use of a Pollutant Release and Transfer Register (PRTR) system, which provides the public with data regarding the amount of hazardous chemicals and pollutants released to the environment. In 2019, the government decided to accelerate the introduction of more stringent emission standards for vehicles: Euro 5 and 6 will be applied from 2021 and 2022, instead of its original plan of 2023 and 2029. From January 2020, the excise tax on motorcycles is levied based on their CO2 emission level instead of their engine size. Moreover, the government is planning to review the national standards for air pollution in the coming years. The revision should be ambitious enough to follow an international standard, such as the WHO guidelines. A carbon tax is also useful to curb air pollution. Given low oil prices, Thailand could raise its excise taxes on fossil fuels once the economy fully recovers, which would also increase its tax revenue. To tackle Northern haze pollution, in 2019, the government established the Single Command System. This has strengthened coordination among central agencies and regional governments through the enhanced information sharing and swift interventions.

Policy tools for waste management could be further strengthened. Amounts of waste exceeding the operational capacity of local governments entail risks of illegal dumping, and some waste has been transferred to unsanitary landfills (Yukalang, Clarke and Ross, 2017[61]). To tackle this problem, the government has launched a wide range of programmes, including the creation of mechanisms that increase the separation of household hazardous waste and recycling at the local government level. Moreover, to deal with the growing amounts of electrical appliances and electronics waste (e-waste), the government has drafted an enhanced producer responsibility (EPR) bill for e-waste. Introducing an EPR law will be a strong tool to achieve the government's policy goal of waste reduction (OECD, 2016[62]). To this end, effective enforcement, particularly an appropriate licencing to qualified scrappers, will be the most crucial.

Thailand is also accelerating the management of plastic waste at source. Based on the Roadmap for Plastic Waste Management 2018-2037, it started banning single-use plastics from January 2020. Nevertheless, the COVID-19 outbreak has increased the amount of plastic waste due to the spike in the use of online delivery during lockdowns, which heavily relies on plastic packages, and single-use hygiene materials. On the other hand, the government's National Waste Management Master Plan 2016-2021 aims at creating mechanisms to increase separation of household hazardous waste and recycling. Local governments including the Bangkok Metropolitan Administration are encouraged to operate waste separation. A survey in a Thai community suggests that enhancing public awareness and a strong social partnership by local governments are essential to promote waste separation (Charuvichaipong and Sajor, 2006[63]). The current health crisis should be used as a rare opportunity to raise public awareness in reducing plastic waste and wider recognition of separation for reuse and recycling, and to strengthen the initiatives of local governments.

To address the increasing carbon dioxide emissions while sustaining high economic growth, the government set out the Nationally Determined Contribution Roadmap on Mitigation 2021-2030 and aims at reducing its greenhouse gas emissions by 20-25% from the current level by 2030. To this end, the government updated its Power Development Plan (PDP) after the previous revision in 2015, with much emphasis on renewables. In the new PDP, renewable energy projects will occupy 37% of new power capacity by 2037, while the coal-fired power capacity will be contained to 12%. In 2017, the share of renewable energy in electricity generation, excluding hydroelectric, was around 11%, lower than the Philippines, but is rapidly growing (IEA, Electricity Information 2019). Currently, solar energy does not account for a large share in renewables, but the government intends to increase its capacity further. In Thailand, three state-owned-enterprises are sole buyers of renewables, and a feed-in-tariff scheme has promoted the expansion of renewables. To further facilitate renewables, stable electricity supply is crucial. Thailand needs to improve its grid capacity and develop storage technology, in addition to better weather forecasting technique. In addition to strengthening the excise taxes on fossil fuels, a broader usage of carbon tax like in Singapore would also be a useful tool in the long run.

Figure 1.38. Renewables are increasing



Source: OECD (2020), OECD Environment Statistics database (Green Growth Indicators; Patents); OECD National Accounts database; IEA (2020), IEA Energy Prices and Taxes database; World Bank, World Development Indicators database.

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Table 1.13. Recommendations to macroeconomic stability, structural and social policies

Findings (main findings in bold)	Recommendations (key recommendations in bold)
Macroeconomic policy and fiscal sustainability	
The COVID-19 outbreak has severely hit economic activities, and growth is expected to be negative in 2020 and remain weak, while there is the high risk of a second wave of the pandemic.	**Extend the emergency support measures to vulnerable households and SMEs, if the situation worsens.** **Strengthen the capacity of public health system including testing.**
As high uncertainty about the future course of the outbreak and weak employment prospects weigh on confidence of businesses and households, the recovery will be slow, which would have a scarring effect on long-term productivity.	**In the short run, maintain employment and stimulate demand.** **As the recovery becomes steady, boost the productive capacity of the economy by gradually shifting from income and employment supports to structural measures including the up- and re-skilling of workers.**
Although the government's fiscal position has been healthy, spending needs will increase further if the COVID-19 outbreak worsens.	**In case further spending is required, use the available fiscal space within the fiscal constraints, and ensure cost-effectiveness and transparency.**
Inflation has dropped sharply and is expected to be negative in 2020 before bouncing back to the lower bound of the target in 2021, with risks titled to the downside.	**Keep monetary policy very accommodative, and if downside risks materialise, reduce the policy rate further.** **Consider additional monetary policy tools, if interest rate cuts further narrow policy space.**
The tax-transfer system has little impact on income equality. Tax revenue collection is low and social spending is limited.	Improve tax compliance, particularly in the personal income tax. Once the solid economic recovery is restored, broaden the tax base, with a full implementation of the new property tax.
Healthcare spending is expected to increase in tandem with the fast ageing society.	Undertake the planned healthcare financing reforms.
Boosting productivity	
The government provides tax incentives and other privileges to firms investing in SEZs and workers.	Gradually extend regulatory and administrative reforms in SEZs to the rest of the economy.
Protection of intellectual property rights has been improved, but a number of challenges remain including the area of copyright piracy.	Strengthen enforcement of intellectual property rights protection regime further through better inter-agency co-operation.
The growth of firms is hampered by too many, partly outdated laws and regulations.	Continue the on-going review of the existing laws and regulations with an effective implementation scheme.
Despite recent improvement, the quality and quantity of infrastructure remain insufficient.	Enhance the public-private partnerships scheme by disclosing sufficient information about projects.
Preferential policies targeting SMEs adversely affect their growth.	Review size-dependent policy measures, including taxes.
Various institutions are responsible for integrity policies, weakening enforcement through overlapping and conflicting mandates.	Improve coordination among anti-corruption enforcement agencies, while maintaining a solid independence of the National Anti-Corruption Commission (NACC).
Whistle-blower protection is partially covered by separate laws.	**Consider developing a single dedicated law to protect whistle-blowers.**
Rapid expansion of cultivation and poor management result in lower land productivity in agriculture.	Make land use for cultivation more align with its environmental and natural conditions.
International competition on productivity and product quality in agriculture has become severe.	Shift to more market-oriented policies and encourage farmers to cultivate higher value-added products, such as organic farming.
Tackling inequality and informality, narrowing gender gaps and pursuing Green Growth	
Labour informality is high and female workers are concentrated in the informal sector, including as domestic workers.	Provide informal workers more training opportunities and make the workforce more equipped with skills in shortage. **Lower the costs of formalisation by reviewing the stringent employment protection policies and preparing customised policy measures to the targeted people with enhanced awareness among vulnerable people.** Improve the efficiency of enforcement of tax, labour regulations and social security through better coordination of responsible agencies. **Reach out to female informal workers and make formalisation measures more in line with their needs.**
Though improved, air pollution remains worse than in other countries.	Make the national standards for air pollution stricter in line with international standards. Consider increasing the excise taxes on fossil fuels, once the solid economic recovery is restored.

The policy framework for water management has improved significantly, but challenges remain, particularly in water quality.	Improve the nationwide wastewater treatment capacity. Use the enhanced mandate of the Office of the National Water Resources (ONWR) to strengthen the supports to local governments.
Despite the introduction of the ban on single-use plastics, the amount of plastic waste has increased during the lockdown period.	Improve public awareness intensively by connecting the problem on plastic waste with the COVID-19 outbreak. Strengthen supports for local governments to implement waste separation.
The share of renewable energy production is growing, but still lower than in other regional peers.	**To attain a sustainable high growth path, invest in green infrastructure, particularly strengthen the capacity of renewable energy production.**

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2 Getting the right skills for future prosperity

Due to rapid population ageing, globalisation and automation, Thailand's labour market is going through rapid changes, and so do the skills required for higher employability. To ensure that Thai people are equipped with the skills that are in demand in the labour market, it is important to provide them with sufficient and quality life-long learning opportunities. This chapter focuses on policies to improve the responsiveness of the education system as well as adult learning programmes. The chapter also highlights the challenges related to the COVID-crisis, which will involve more demand for skills specialised in ICT and healthcare, but also the use of technology for teaching and learning.

The importance of human capital development

Human capital can be broadly defined as the stock of knowledge, skills and other personal characteristics embodied in people that helps them to be productive. Pursuing formal education (early childhood, formal school system, adult training programmes) but also non-formal training, informal learning and work experience all represent investment in human capital (Botev et al., 2019[1]). Broader definitions of human capital also include health (Flabbi and Gatti, 2018[2]; Bloom and Canning, 2003[3]).

Higher levels of education and skills have been identified as key drivers of productivity growth, allowing people to execute more difficult tasks and to solve more complex problems (Rincon Aznar et al., 2015[4]). Differences in returns to education have proven effective in explaining productivity across OECD countries and over time (Botev et al., 2019[1]). Human capital complements other types of capital, such as technology. For example, technology adoption will have very little practical effect on economic growth processes unless it is disseminated by education which creates the simple basic capacities to utilise the technology and learn on the job (Mcmahon, 2000[5]).

However, the impact of human capital development goes beyond a direct effect on productivity and economic growth. Investment in human capital also has an impact on health outcomes, including greater longevity and reduced infant mortality; increasing democratisation, human rights, and political stability; poverty reduction and reduction of inequality; environmental sustainability; and reducing homicide and property crime rates (Mcmahon, 2000[5]). These, in turn, all have indirect effects on economic growth.

The following sections look at the skills system in Thailand to identify some of the key challenges and opportunities for human capital development. The next section discusses the impact of megatrends, such as technological progress, population ageing and globalisation, on skills demand and supply in the Thai labour market. The third section looks at the performance of the Thai education system and the progress made in the last decade, while highlighting some areas for further improvement. Building on the messages on the supply of graduate, the following section analyses skills imbalances in the labour market in Thailand, with a focus on shortages and surpluses in occupations, as well as mismatches between individuals' education and their job. The last section looks at training opportunities for adults as a way to ensure that the skills of the workforce are aligned with the needs of the labour market.

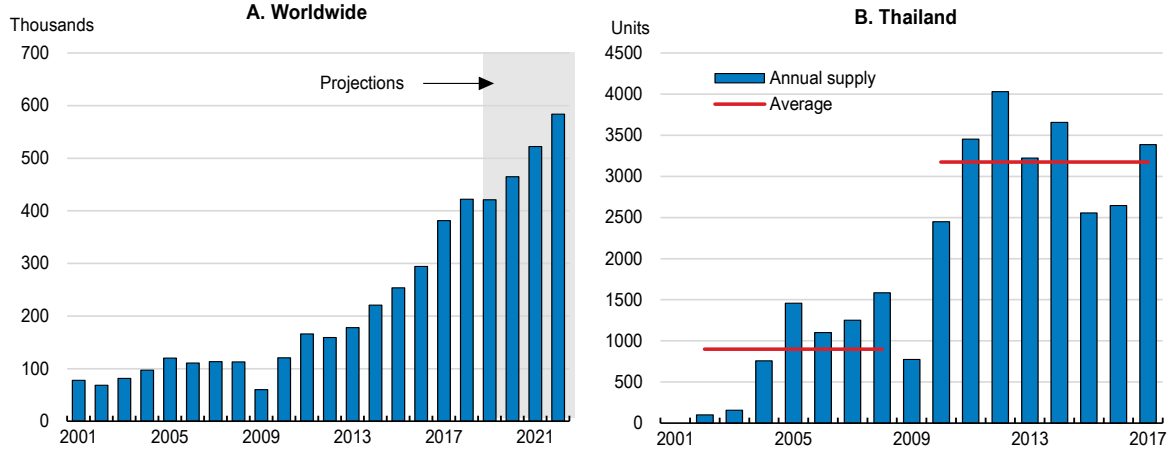
The future of work and skills: What are the key challenges for Thailand?

Technology is shifting skills demand

While technological advances help workers to improve their productivity and create new tasks or jobs opportunities, they are also automating an increasing number of tasks traditionally performed by humans. Initially, automation focused primarily on routine tasks (e.g. clerical work, bookkeeping, basic paralegal work and reporting), but with the advent of Big Data, artificial intelligence (AI), the Internet of Things (IoT) and ever-increasing computing power (i.e. the digital revolution), non-routine tasks are increasingly likely to become automated. (OECD, 2019[6])

The diffusion of industrial robots perhaps best epitomises technological penetration and the possibility of job automation in the workplace. Robots have been used for decades, but their diffusion has recently accelerated thanks to the advanced robotics technologies and development of high-tech or smart robots. They now spread beyond the manufacturing sector and manual tasks. For example, supermarkets have started to employ robots as shop assistants, and Amazon and others retailers are piloting cashier-less stores. Data from the International Federation of Robotics shows that orders of industrial robots increased threefold globally between 2003 and 2015, and the trend is projected to accelerate further (Figure 2.1, Panel A). The penetration of industrial robots is not limited to advanced economies. The data also shows that many emerging countries, including Thailand, closely follow international trends of automation. The annual supply of industrial robots in Thailand was estimated to be around 900 in the 2000s, but it jumped to 3 000 in the last decade (Figure 2.1, Panel B).

Figure 2.1. The supply of industrial robots is on the rise



Source: International Federation of Robotics (IFR).

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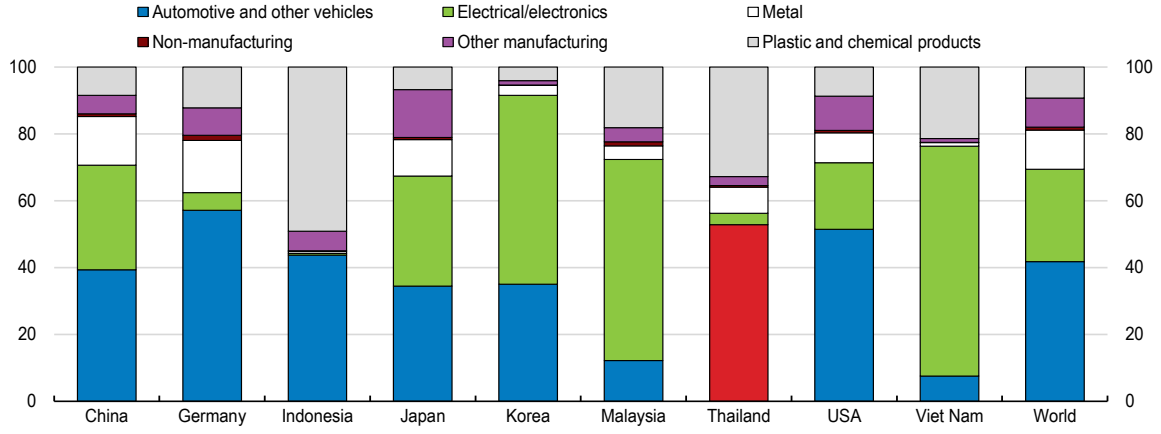
The intensity of robot use varies considerably across industries. Moreover, countries differ substantially in terms of the industries that use robotics most intensively (Figure 2.2). International comparison shows that Thailand stands out for its very high concentration of robots in the automotive sector as well as in the manufacturing of plastic and chemical products, where opportunities for using robots in larger scale assembly productions have also increased recently. In 2017, more than 85% of industrial robots were used in the automotive and plastic/chemical products sectors.

Figure 2.2. Robot use in Thailand is concentrated in a few sectors

2017 data



Note: Robot use in unspecified sector has been excluded from the calculation.
Source: OECD calculations based on data from the International Federation of Robotics (IFR), https://ifr.org.

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Automation technology often substitutes for labour to carry out certain tasks, while complementing labour in other tasks. According to ILO estimates, three of five jobs in five major ASEAN countries (Cambodia, Indonesia, the Philippines, Thailand, and Viet Nam) face at least a 70% probability of automation (Chang and Huynh, 2016[7]). Figures for individual countries range from 44% in Thailand to 70% in Viet Nam (Figure 2.3). Although Thailand's share is the lowest among the ASEAN countries chosen as comparators, this is similar to what is estimated for some OECD countries like Australia (40%) and the United States (47%). Moreover, new estimates that focus on tasks carried out in a job rather than the occupation, find that only around 14% of jobs on average across OECD countries face a high probability of automation

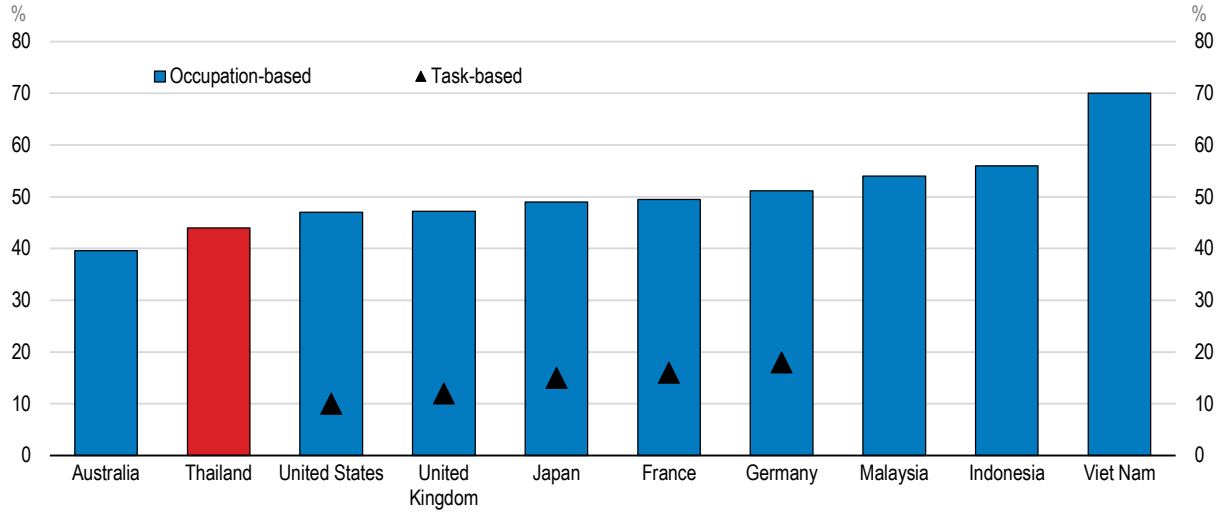
(Nedelkoska and Quintini, 2018[8]). In addition to these, 32% of jobs in OECD countries have high probability to undergo significant change in the way they are carried out.

In addition, OECD analysis highlights that the risk of job automation is higher among low-skilled workers, women, and workers at low-wage occupations, which may further increase disparities in the labour market (Nedelkoska and Quintini, 2018[8]). The studies suggest that the probability of automation is not evenly distributed across occupations, in Thailand, and that risks are particularly acute for occupations such as shop sales assistants, food service counter attendants, cooks, office clerks and accounting associate professionals (Chang and Huynh, 2016[7]). However, these estimates only provide a projection of possible outcomes in terms of task automation in the next few decades. Many factors could limit technology adoption, including the relative price of technology and attitudes towards technology.

Furthermore, it is important to note that these figures only capture potential job destruction and do not account for the (potentially larger) number of new jobs that technology will create. While certain jobs may disappear, others will emerge and a sharp decline in overall employment is unlikely (OECD, 2019[6]). On the other hand, job automation certainly could bring large benefits to the economy, such as higher productivity and improved working conditions. For instance, safety and health at work can improve as hazardous jobs are automated. It could also help overcome labour shortages in the face of an ageing population. However, it is important to be aware of the huge impacts that technological advances can bring to the nature or the existence of a number of jobs. In order to maximise the benefits of automation and minimise the downsides, it is crucial to ensure that people are provided with sufficient re-skilling and up-skilling opportunities.

Figure 2.3. Jobs with high probability of automation

Share of jobs with high probability of automation or a probability of significant change



Note: Occupation-based estimates for the risk of automation are based on Frey and Osborne (2017), whereas task-based estimates come from Nedelkoska and Quintini (2018).

Source: L. Nedelkoska and G. Quintini (2018), "Automation, Skills Use and Training", OECD Social, Employment and Migration Working Papers, No. 202, Paris; C. Frey and M. Osborne (2017), "The Future of Employment: How Susceptible are Jobs to Computerisation?", Technological Forecasting and Social Change, Vol. 114, pp. 254-280; J. Bowles (2014), Chart of the Week: 54% of EU Jobs at Risk of Computerisation, Bruegel blog post; Ceda (2015), Australia's Future Workforce?, Committee for Economic Development of Australia , Melbourne; J. Chang and P. Huynh (2016), "ASEAN in Transformation: The Future of Jobs at Risk of Automation", Bureau for Employers' Activities Working Paper, No. 9, International Labour Office, Geneva; Khazanah Research Institute (2017), "The Times They Are A-Changin': Technology, Employment, and the Malaysian Economy", Discussion Papers, No. 1/17, Khazanah Research Institute, Kuala Lumpur; and Nomura Research Institute (2015), "49% of the Japanese Working Population Could be Replaced by Artificial Intelligence, Robots and Similar", News Release.

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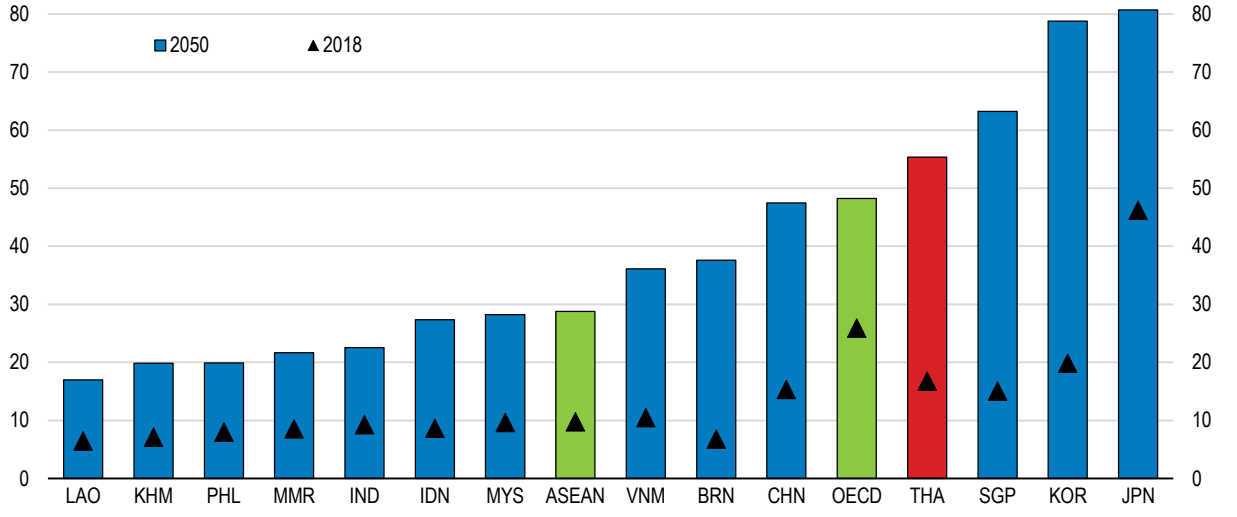
As technology is spreading across sectors and occupations, it becomes increasingly important for individuals to have strong digital skills. International data on digital skills and the use of digital technologies shows that youth and adults in Thailand have weaker digital skills than on average across OECD countries. For example, in 2014, 17% of youth and adults in Thailand reported to have sent emails with attached files, compared to 50% across OECD countries with available data in 2016/17 (UNESCO Institute for Statistics database). Only 5% of youth and adults in Thailand report to have used copy and paste tools to duplicate or move information within a document, compared to 56% in OECD countries. The growing demand for digital skills has accelerated in response to the COVID-19 crisis, as distancing measures lead to increased use of digital technologies for work and in daily life. To the extent possible from available technologies, the nature of work and the way tasks that were normally carried out is likely to change significantly in the post-COVID-19 world. It is expected that demand for digital tools that facilitate distancing and reduce personal contacts, such as video conferencing, internet banking, online courses, and teleworking, will rise. This will reinforce the importance of and demand for technological advancement and digital skills, and could possibly stimulate further automation.

Population ageing is impacting skills supply and demand

Technology-related job changes are occurring against the backdrop of rapid population ageing, which is particularly fast in Thailand compared to other ASEAN countries (Teerawichitchainan et al., 2019[9]). According to the recent UN data, in Thailand, there were seven persons aged 65 and over for every 100 people of working age in 1980 and this number more than doubled by 2015. Furthermore, it is projected to more than triple between 2018 and 2050 (Figure 2.4), reaching about 51.1% in Thailand in 2050, compared to 48.8% on average in OECD countries.

Figure 2.4. Thailand is one of the most rapidly ageing countries

Old-age dependency ratio



Note: The old-age dependency ratio is defined as the number of persons aged 65 and over relative to the 20-64 years old population.
Source: United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019, Online Edition. Rev. 1.

StatLink https://stat.link/19in4e

Rising living standards, combined with the availability of higher quality healthcare services, have led life expectancy at birth to increase around the world. Data from the United Nations' 2019 World Population Prospect shows that, in Thailand, life expectancy has increased from 61 years to 77 years old between 1970 and 2015. Going forward, it is projected to increase to 83 years by 2050, possibly thanks further improvements in the diagnosis and treatment of diseases which are anticipated to become available in the future (Sanders, 2016[10]; Broad Institute, 2018[11]). On the other hand, decreasing birth rates is another crucial factor that accelerate demographic changes in Thailand. According to the recent World Bank data, the birth rates in Thailand has been in steady decline since 1960. Over two decades between 1965 and 1985, Thailand's birth rates per 1 000 people plunged from about 40 to 20. Currently, its birth rates is about 10, which is one of the lowest at the international comparison, contributing to rapid rise of dependency ratio in Thailand.

These demographic trends affect the labour market in terms of consumption patterns and technology adoption. In countries with rapidly ageing populations, such as Thailand, consumption pattern are expected to show substantial changes. Demand will likely shift from durable goods (such as cars) towards services such as health care and leisure. The recent COVID-19 pandemic has already shown that the demographics of countries are a key factor in the demand for infrastructure and skilled labour in the health sector. Moreover, as the number of retiring older workers rises relative to the number of young people entering the labour market, shortages of qualified labour may arise. This problem could be particularly relevant to the small open economy, such as Thailand, where aggregate labour demand is less influenced by its domestic market size. This could potentially lead to particularly fast adoption of industrial robots, preventing slower economic growth otherwise associated with an ageing population (Acemoglu and Restrepo, 2017[12]). All of these factors will have an impact on the types of jobs that will be created and the skills demanded (OECD, 2019[6]).

Population ageing and resulting skills shortages may also create stronger pressure to attract more immigrant workers. Thailand has been accepting a large number of migrant workers for decades, particularly from its neighbouring countries – Cambodia, Laos and Myanmar. According to the estimations of the International Organization for Migration (IOM), Thailand is one of the top migration destination countries in the world. It estimates that about 4 898 461 non-Thai people resided and worked in Thailand in 2018 (IOM, 2019[13]). While migrants may help Thailand to overcome skills shortages, evidence found in OECD countries suggests that there are some key risks, as a significant share of migrant workers are irregular workers and/or have low skills level, conveying a high risk of low productivity and low inclusiveness (OECD, 2017[14]).

Globalisation changes the structure of the labour market

In conjunction with the diffusion of new technologies, the world economy has become increasingly integrated through international trade. As a share of GDP, international trade has risen across the world, both in developed and emerging countries in recent decades (Figure 2.5). Many emerging economies, including Thailand, are now major players in the world market, both as exporters and importers. Industrial production has become increasingly integrated at the international level, with the world economy organised in global value chains (GVCs) whereby the different stages of the production process are distributed across countries and regions (OECD, 2019[6]).

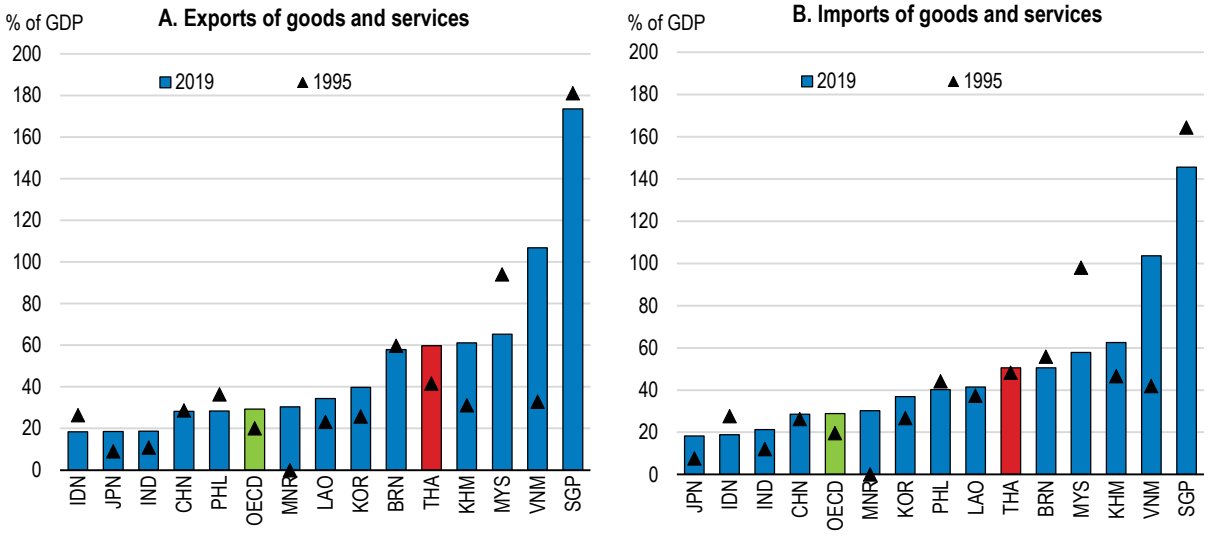
As discussed in Chapter 3, Thailand actively participates in GVCs. Climbing up its place on the value-added ladder would further increase the demand for high-skilled workers. The role of inward Foreign Direct Investment (FDI) in stimulating high skill job creation has been well documented. Multinational corporations tend to demand higher skill levels than do local companies, creating more job opportunities for highly skilled workers. Moreover, in addition to the possibility of formal knowledge and technology transfer, FDI comes with a high potential for "spills-overs" to the local economy (Blomström and Kokko, 2001[15]). Evidence

shows that FDI spill-over effects have been significant in upgrading the skill level of the local economy in Thailand, reinforcing the demand for high skilled labour. (Srithanpong, 2014[16])

However, more recently, a new challenge has arisen for Thailand due to international trade tensions triggered by the recent COVID-19 crisis. The pandemic has made it difficult to keep GVCs going. The limited mobility of people and lockdowns do not only limit available air cargo and containers, but it also increases time and cost of a variety of other trade processes, from unloading shipments, physical inspection of goods, to testing and certification of goods and anti-dumping investigations. Over 50 countries have changed port protocols in response to COVID-19, ranging from port closure and quarantine measures to additional documentation requirements and examination. More generally, all supply chains are being affected by the need to ensure additional health and safety measures for all participants in the supply chain, raising the time and cost of production (OECD, 2020[17]). Furthermore, while trade may rebound when the situation improves, there may be longer term, structural effects. Some firms may retreat from globalisation, seeking shortened supply chains and suppliers located in countries that seem less prone to disruption or they may re-shore manufacturing (OECD, 2020[18]). These changes could have substantial impact on the Thai economy.

Figure 2.5. International trade keeps rising

Trade in goods and services, as a percentage of GDP



Note: For Myanmar, 1995 refers to 2000, which is the earliest year available.
Source: World Bank, World Development Indicators Database.

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Skills development as the driver of Thailand 4.0

Access to education has been on the rise, but challenges remain

Thailand has made remarkable progress in expanding access to education over the past decades, with potential to importantly help drive forward "Thailand 4.0", a government strategy aiming to move towards more skilled and technology-oriented economy in order to respond to the country's shrinking labour force by increasing the population's productivity (IECF Monitor, 2017[19]). Participation in general education in Thailand is relatively high, particularly at the primary level, with access to primary education nearly

universal. The net enrolment rate, which measures the number of children of official primary school age who are enrolled in primary education as a percentage of the total children of the official school age population, stood at 99.6%, 3 percentage points higher than in 2009 and comparable to that of high-income economies, such as New Zealand, Korea and Australia (Figure 2.6). Thailand also shows good results in student progression, showing a grade completion above 90% for the last grade of primary education (UNESCO-UIS, 2019[20]).

Thailand's enrolment rates in secondary education are in line with the middle-income countries in the region, but still comparatively lower with respect to OECD countries. For example, in 2015, and as shown in Figure 2.6, secondary enrolment was 77.3%, just below Indonesia, Brunei and Singapore and above the ASEAN average (70%). These figures are considerably lower than high-income OECD countries, such as Korea or Australia, which exhibit enrolment rates above 90% in secondary education. In order to boost secondary enrolment and completion rates, Thailand could consider learning from other countries in designing its second chance learning options for early school leavers (Box 2.1).

Box 2.1. International examples of second-chance learning options for early school leavers

Early school leavers typically find it very hard to return to school, as the educational, social or personal factors that caused the initial drop-out often persist and remain an obstacle. Depending on their level of schooling and how long it is since they dropped out, young people may also lack the elementary literacy and numeracy skills required to continue schooling or follow a professional training programme.

Second-chance programmes offer a flexible learning environment – often with a residential component – that is well adapted to early school leavers' needs and designed to help them back into education. They typically combine catch-up classes in literacy and numeracy skills with vocational classes, intensive counselling, health support and career guidance. Simple work experience or community work components – in catering or elderly care, for example – can help them re-gain their work rhythm.

Probably the largest and best-known second-chance programme is the US Job Corps, which has been operating since 1964. It targets disadvantaged 16-to-24 year-olds, giving them academic tuition, vocational training, counselling, and social skills training. It also provides health care and organises job placements. Another important programme – and one that has expanded internationally from the United States – is YouthBuild, which provides skills and work experience in the construction sector. Both schemes rely on strong ties with local employers. Both contain a strong non cognitive training component aimed at strengthening motivation, building conscientiousness, and coaching young people in interpersonal skills. For some young people, the US Job Corps and YouthBuild function as comprehensive pre-apprenticeships, while for others they are stepping stones to higher education.

In France, the École de la Deuxième Chance offers similar curricula. The Swedish Folk High Schools provide young people aged 18 and over with a mixture of intensive counselling, coaching in social and life skills, and formal education. They use their own grading system that measures not only academic performance but also social skills, and public universities set aside quotas for Folk High School graduates. In Australia and the United Kingdom, smaller-scale second-chance programmes are offered in so-called "youth foyers", which offer training, accommodation and social and psychological support to homeless young people, and which are often located close to the vocational training facilities.

Source: OECD (2016[21]), *Society at a Glance 2016: OECD Social Indicators,* https://dx.doi.org/10.1787/soc_glance-2016-4-en

While enrolment rates in education have increased over the past decade, many students from the poorest families still do not attend school in Thailand (UNESCO-UIS, 2019[20]). Rates of exclusion are higher in rural areas and among various ethnic and linguistic communities. Despite renewed efforts since the 1990s,

access to education for children with disabilities also remains limited in Thailand (OECD/UNESCO, 2016[22]). To promote enrolment among disadvantaged students, Thailand expanded free education from 12 to 15 years in 2009 and free schooling now extends from pre-primary to upper secondary education. However, the new policy does not cover transportation costs, which are one of the main factors hindering educational access for poor students living at further distance from schools (OECD/UNESCO, 2016[22]). Regional disparities are likely to prominently resurface in the context of COVID-19, with potential to importantly exacerbate existing inequalities. As schools have closed amidst the pandemic, reduced access to digital technologies for pupils in rural areas further disrupts their equitable participation in the learning process which has been largely moved online (Kenan Foundation Asia, 2020[23]) (See Box 2.2 for addition details on Thailand's response to COVID-19).

Box 2.2. Thailand's education policy response to COVID-19

On 17 March, the Ministry of Education (MOE) of Thailand announced that all educational institutions, both government and private, would temporarily close, to reduce the spread of COVID-19, thus leading students to complete the academic year from home. The anticipated date for re-opening of schools has been set to 1 July - therefore, the start of the first academic semester for 2020 would be delayed from 16 May to this date.

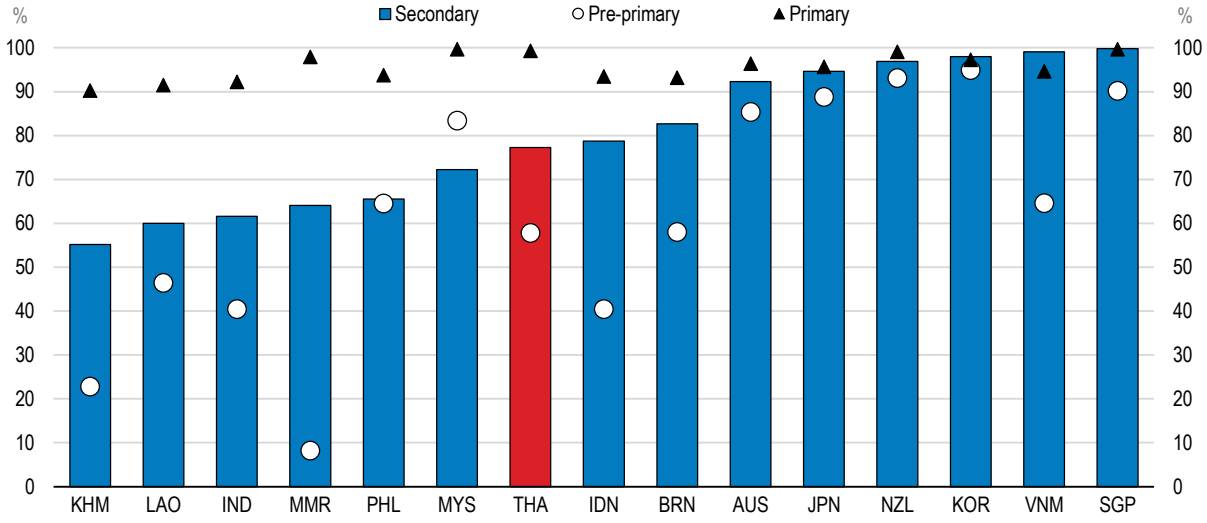
To ensure the safety of students and reduce the risk for students not to return to schools, the MOE has established a mandatory list of 42 items in place that each school must implement two weeks before re-opening. These 42 items cover school safety measure, such as the minimum amount of meters squared per students, daily temperature checks protocols, floor markings to ensure distancing, compulsory masks and frequently daily cleaning of all school facilities.

To alleviate the financial costs of meeting these mandatory health requirements, the Private Education Commission has come up with special loans of up to THB 500 000 to relieve some of the pressure on private schools. Schools were instructed to switch to online learning immediately upon school closings on 18 March. In the face of technological limitations to online learning – many households lacked devices, a stable Internet signal (particularly in rural areas), and time to monitor students – the government has identified that the next best strategy to keep students and parents engaged in the learning process is to send teachers on personal households visits. While involving a larger budget for worksheets, fuel costs and teacher allowances, government has decided to cover these expenses under the Thailand 15-Year Free Education Scheme.

Despite progress in recent years, Thailand – like most countries in the region – lags behind OECD countries in terms of access to pre-primary education. While government policies to expand free access have increased enrolment in pre-primary education, there is still room for improvement in coverage, as approximately 25% of children ages 3 to 5 are not enrolled (NESDB, 2017[24]). Further, the student population who are not enrolling are also disadvantaged students who, as research suggests, stand to benefit the most from pre-primary education. This is supported by the OECD 2015 PISA results, which reveal that Thai students who attended two to three years of pre-primary education scored 30 points higher on average as compared to those who did not attend at all (PISA, 2015[25]). Overall, Thailand performs around the regional average, with a net enrolment rate of 53.2% in 2017, slightly above the ASEAN average of 50%, but significantly below OECD countries in the Asia-Pacific regions, such as New Zealand and Korea (Figure 2.6).

Figure 2.6. Thailand's participation in formal education is around the regional average

Net enrolment rates, by level of education, 2018 or latest data available



Note: For Cambodia and Viet Nam, the secondary level ratio was proxied by lower secondary ratio. For Thailand, the primary level ratio refers to 2009.
Source: UNESCO, Education Database.

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The expansion of Thailand's education system is the result of strong and sustained financial investments, as also reflected by the importance of education in the state's budget. Thailand invests a significant share of its national wealth in education, and over the last decade, it has consistently allocated around 20% of total government expenditure to education each year.

Overall, the level of spending on education in Thailand is above the average, when compared with other countries in the ASEAN region (Figure 2.7). In 2013, its spending share on education of 4.1% of GDP is considerably higher than Indonesia and the Philippines, although below Malaysia and Viet Nam. On the other hand, when compared with the OECD countries, whose spending is on average around 5.5% of GDP, Thailand is still below this level of spending (UNESCO-UIS, 2019[20]).

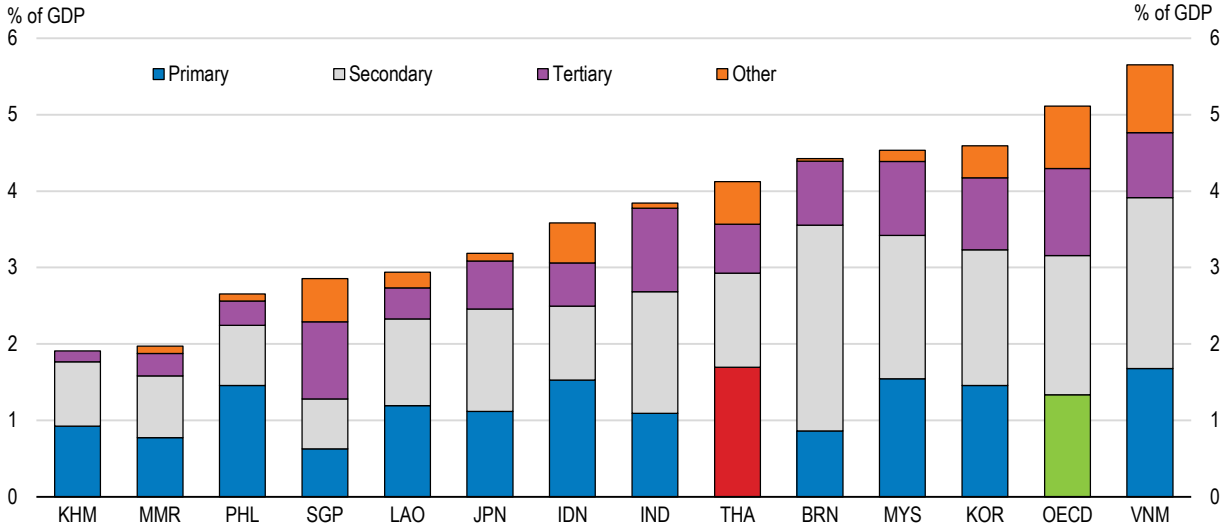
Significant efforts to expand pre-primary education in Thailand are reflected in relatively high investments as a percentage of GDP – both compared to neighbouring countries with a similar level of development, and to more highly-developed countries in the region (OECD/UNESCO, 2016[22]). However, Thailand's government expenditure on pre-primary education as a percentage of GDP has remained quite stable in recent years (UNESCO-UIS, 2019[20]), and further efforts are needed to ensure that it reaches the most vulnerable populations, while increasing its quality and impact (see below).

Thailand's expenditure on primary education is the highest among the selected countries in the region, and is the predominant source of education expenditure in the country. In 2012, Thailand's funding per primary student was 29.4% of per capita GDP, compared to 15.4% in Malaysia (as of 2011) and 11.2% in Singapore. In that year, 44.8% of Thailand's government education spending was directed at the primary level, a higher proportion than in any of the other selected countries (UNESCO-UIS, 2019[20]). At the secondary level, although government expenditure increased from 14.3% of the total in 2008 to 28.6% in 2012, the per-student funding remained low compared to many of the selected countries, at 19.7% of per capita GDP.

However, as most OECD research shows, beyond a certain level of expenditure, educational and skills outcomes (e.g. PISA scores, cognitive skills) tend to be more correlated with other inputs, such as teacher quality or curriculum. The following section will discuss several actionable factors that may be limiting the ability of these efforts to translate into positive results.

Figure 2.7. Thailand's expenditure on primary education is the highest in the region

Total public expenditure on education, 2018 or latest year available



Source: World Bank, World Development Indicators Database.

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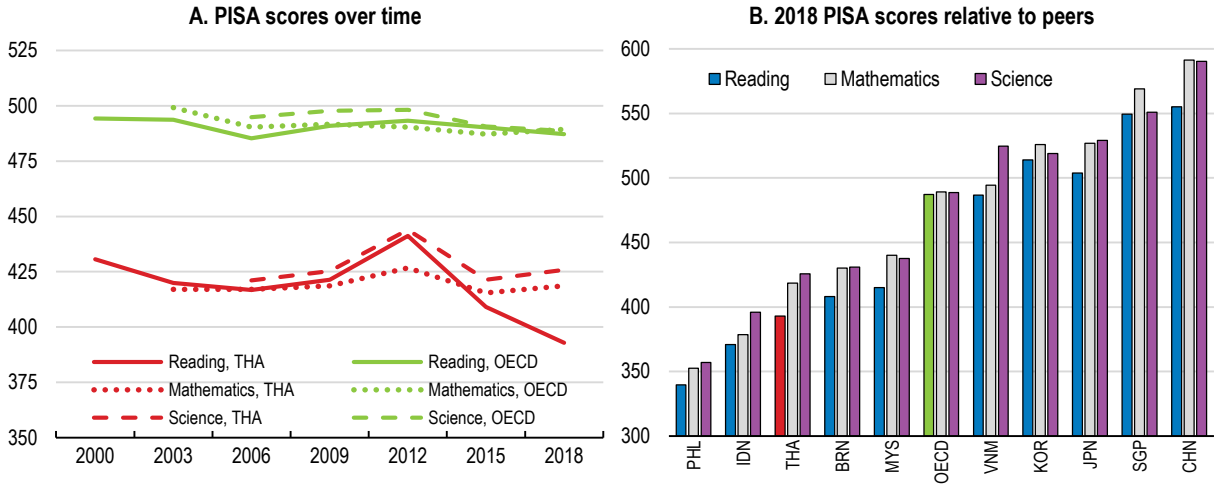
Reducing regional disparities and improving education quality

As highlighted in the section above, Thailand has made considerable efforts with respect to investment into and expansion of its education system. However, it is unclear whether the ambitious endeavour has successfully led to the anticipated gains. The 2018 PISA results reveal that 15 year-old students in Thailand achieve lower scores in all three domains measured by the Programme for International Student Assessment (PISA) – reading, science and mathematics – than do their peers in the OECD on average (Figure 2.8). While the reading performance of Thai students lags behind the OECD average by 90 points, the gap equals 70 points for mathematics and 63 points for science (OECD, 2019[26]). In comparison to other ASEAN countries that participated in the 2018 PISA assessment, the scores of Thai 15 year-olds in reading lag behind those of Brunei Darussalam, Malaysia or Singapore. Further, the same ranking holds with respect to science and mathematics as well (OECD, 2019[26]). In Thailand, as well as in all OECD countries, girls have historically outperformed boys in all subjects in the PISA test. However, the gender gap is significantly higher than in OECD countries. For example, in 2018, girls scored 39 points higher in reading, equivalent to half a standard deviation. Similarly, girls outperformed boys by 16 and 20 points in mathematics and science (16% and 20% of a standard deviation), respectively.

Figure 2.8. PISA scores are lower than the OECD average, with a growing gap in reading



Note: Data for Viet Nam refer to 2015.
Source: OECD (2019[26]), *PISA 2018 Results (Volume I): What Students Know and Can Do,* https://dx.doi.org/10.1787/5f07c754-en

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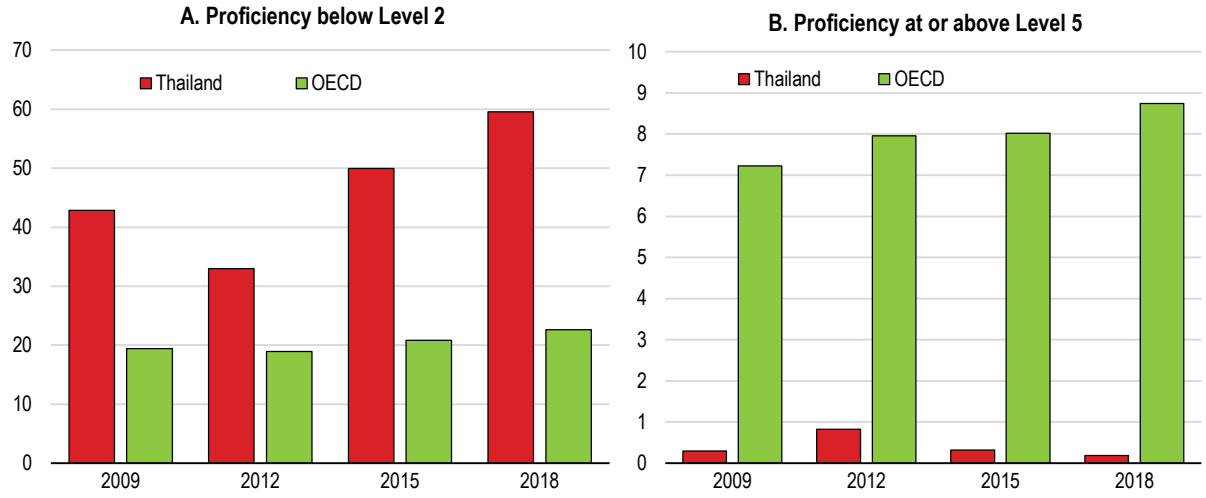
Compared to the OECD average, Thailand also counts a smaller and decreasing proportion of top-performers in reading (students performing at Levels 5 or 6 of proficiency), and a larger and increasing share of low-achievers (students performing at or below Level 2 of proficiency) (Figure 2.9). For example, while the proportion of low-performers in reading is roughly 23% in the OECD on average, Thailand's figure stands at almost 60% (OECD, 2019[26]). Thailand also falls well below the ASEAN countries' PISA reading average of 413 points (which corresponds to a Level 2 of proficiency), with a score of 393 (Level 1 proficiency) (GovTech SEA, 2019[27]).

While the performance scores marked a slight, albeit non-statistically significant improvement with respect to science and mathematics between 2015 and 2018, reading performance was lower in 2018 than in any other of the previous PISA rounds – there was a statistically significant drop by 16 points from 2015 (Figure 2.8). In terms of the average three-year trend in performance across PISA rounds since the earliest assessment available, the performance of Thai students remains stable for science and mathematics (OECD, 2019[28]). On the other hand, a negative average three-year trend can be identified with respect to reading (Figure 2.8).

Figure 2.9. Thailand has a high share of low achievers and a low share of high performers in reading

Proficiency level in reading



Note: The low achievers are defined as those with less than 407.47 score points (Level 2) and the top performers are those with 625.61 score points (Level 5) or above.
Source: OECD (2019), *PISA 2018 Results (Volume I): What Students Know and Can Do*, https://dx.doi.org/10.1787/5f07c754-en, Table I.B1.7.

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There are several factors that may explain the decline in learning abilities in Thailand's student population, while their consideration has potential to help further advance the Ministry of Education's five-year strategy seeking to prepare the young generation for the requirements of 21st century learning, especially through boosting numeracy and literacy skills in both national standardised tests and international assessment programmes. One important limitation is the lack of qualified teachers in rural sectors. According to an evaluation by the Office for National Education Standards and Quality Assessment, approximately 20% of Thai schools in rural areas do not pass minimum quality standards (OECD, 2013[29]). A contributing factor is the low supply of qualified teachers in the rural sector. Although all teachers in Thailand are obliged to possess an undergraduate degree, a recent World Bank report (Lathapipat, 2017[30]) highlights that while one out of five teachers in Bangkok also has a graduate degree, only one out 11 teachers has graduate degree in the Mae Hong Son province, where schools are smaller in size on average. In addition, teachers in Bangkok have more years of experience on average, and Bangkok's schools have more teachers per classroom. In the context of COVID-19, the importance of qualified pedagogical workforce with adequate teacher training becomes further magnified especially with respect to teachers' preparedness to use online tools for e-teaching amidst school closures (See Italy's and Germany's responses to keep students learning and connected with their teachers in Box 2.3). At present, majority of Thai teachers have not taken part in training of this sort (Kenan Foundation Asia, 2020[23]).

Box 2.3. How are OECD countries dealing with school closures during the pandemic?

Italy's pedagogical response

Italy has opted for a strategy of investing in digital devices to reach the most vulnerable populations of students across Italy. In order to reduce the risk of an increase in educational inequity, disengagement in learning, and ultimately dropout rates, the Ministry of Education of Italy has so far allocated approximately EUR 70 million for schools to buy digital devices. According to the National Institute of Statistics in Italy, one-third of Italian families have no access to a tablet or a computer at home, a statistic which is on average higher in southern provinces of Italy. In more disadvantaged provinces, primary and secondary schools received additional funding to enable provide low-income families with equipment necessary for distance learning.

In addition, 25% of Italian families have a low connectivity speed which is insufficient for streaming or downloading educational content. To address this challenge, the Ministry of Education launch the initiative #LaScuolaNonSiFerma ("The School Never Closes), consisting of a partnership with RAI – the national public broadcasting company – to diffuse education content in its RAI Scuola, Italian free-to-air television channel, and Rai Play, a multimedia portal. The #LaScuolaNonSiFerma will generate stand-alone content to support teaching activities for all grades, which can be accessed offline and televised. In addition, the initiative aims to safeguard the sense of school community between teachers, parents, and students, by generating content and a space that shares different experiences of distance learning and the stories of teachers, managers, staff, students and families.

Germany's response in tackling dropout among VET students

Germany has taken measures to tackle dropout rates for the education sector through initiatives to support vocational education and training (VET) learners at risk, including students from disadvantaged socioeconomic backgrounds, migrants and from ethnic minorities. The VET sector has been particularly vulnerable, as it is more focused on practical aspects that cannot be delivered easily due to lack of access to tools and other necessary equipment relevant to the learning process. In this context, Germany has recognised the special need for additional guidance for this student population. While many German VET educational providers and apprenticeship providers have moved online learning and online assessment during the pandemic, efforts such as the German PES Programme, a program for personnel management within the framework of extended self-employment of schools, are also offering additional funds to facilitate the needs of numerous self-employed guidance counsellors.

In addition, Germany has relied on "transition coaching" to provide individualised and psychological support for VET students to reduce risk of disengagement from learning in the population of VET students. There are currently 5 000 transition coaches working with 3 000 schools. Transition coaches, who are mostly pedagogues, support students to complete VET or other upper-secondary education by meeting with at-risk students regularly to manage the transition to post-graduation life by creating a transition plan in collaboration with students. During the pandemic, transition coaches have heightened their support by offering additional guidance by phone on issues, such as VET course choices and educational pathways.

Finally, the German government is also updating training for VET career guidance counsellors and introducing new online tools that address changing needs of VET student population.

From a policy perspective, the gap in teacher quality can be addressed by strategically increasing investments and re-structuring the incentives currently in place for teacher placement. The present teacher management system allows teachers to select their location once they have been in service for over two years, with salaries of teachers in remote areas being lower on average. This is partly driven by the fact

that these tend to be younger and less experienced teachers compared to those working in cities. In this context, it is positive that Thailand has been working on improving the incentives in place for younger teachers. At the request of the Ministry of Education, the Ministry of Finance has agreed on providing financial support for rural teachers working in hardship locations, helping them to sustain their daily lives and hoping to encourage them to keep teaching in hard-to-reach locations for more than two years.

Furthermore, with COVID-19 necessitating using ICT advances to effectively design and lead remote learning, provision of teacher training on the use of digital tools should be strengthened. Finally, pre-primary teachers also need to receive more training and support to implement the standards-based curriculum (UNESCO\OECD, 2016[31]). The importance of adequate pedagogical teacher training at the pre-primary level is further exemplified in Box 2.4.

Box 2.4. What matters during expansion of pre-primary education – Evidence from a randomised controlled trial in Colombia

In Colombia, enrolment rates in pre-primary education increased from 13% in 1990 to 84% in 2015, while in 2011 the government committed to triple expenditure in early childhood education. A recent study by Andrew et al., (2019) analyses the "Hogares Infantiles" (children's homes) programme, which provides pre-primary education to children from disadvantaged backgrounds aged five and younger. Using an experimental design, the authors show that investment in what is often called "structural quality" (e.g. physical infrastructure, staff resources, pedagogical material) alone does not produce the expected learning gains in students. The authors found that when greater resources are given to schools, teachers tend to substitute their efforts and involvement with children and delegate some responsibilities to less experienced and less qualified teaching assistants. The study shows that these children saw no improvements in their cognitive and social-emotional development on average, and that for some children the effect was even negative.

In contrast, when structural quality was paired with pedagogical training for teachers, children's cognition, language and school readiness increased by around 0.15 of a Standard Deviation (SD). Larger gains (0.3 SD) were observed among the most disadvantaged children, offsetting the negative effect on teacher behaviour.

Source: Andrew, A. et al. (2019[32]), *Preschool Quality and Child Development,* www.nber.org/papers/w26191.

Beyond differences in teacher quality between urban and rural sectors, there are other disparities that are visible along geographical divisions, such as insufficient material resources and physical infrastructure. For instance, the difference in PISA performance between a village and a large city is approximately 1.4 points on the material resources index and 0.6 points on the physical infrastructure index (OECD, 2013[32]). As gaps in physical infrastructure and learning material contribute to low the quality of teaching instruction, future increases in public education expenditure should be oriented towards reducing these gaps as well. At the level of formal and non-formal pre-primary education, a standardised monitoring system would be essential to improving the quality of instruction, as it enforces standards, identifies centres that are not meeting these, and provides them with additional resources and support to improve upon them. Against this backdrop, Thailand's recent establishment of the Equitable Education Fund (Box 2.5) holds potential for improvement by targeting support at disadvantaged children and students, as well as teacher development, across all levels of education.

Box 2.5. Thailand's Equitable Education Fund

The Equitable Education Fund (EEF) was established in 2018 under the Equitable Education Act 2018 with the objective of providing financial support for children and youth who are in greatest need, reducing education inequalities by forming partnership with relevant stakeholders and systematically supporting teachers' quality. The EEF falls under the supervision of the Prime Minister, and is governed by a multi-sectorial Board of Governance, including five Ministries (Education, Finance, Social Development and Human Security, Interior and Public Health) and six independent experts from various disciplines (academic, private sector and civil society).

The EEF focuses on supporting disadvantaged youth across all levels of education (including higher education), as well as children (3-17 years old) out of school. In its first year, the Fund offered supported to 510 630 underprivileged students. Firstly, the EEF works to improve access, quality and learning outcomes of early childhood care and education services, especially for the poorest and disadvantaged children through research and technical assistance. Secondly, through conditional cash transfers, the EEF covers education-related expenses until the completion of basic education, with the support of roughly 569 000 underprivileged primary and secondary aged students among its current priorities. Thirdly, in order to reach the estimated 670 000 out-of-school children, the EEF works to develop effective strategies at the provincial level across 15 provinces, collaborating with stakeholders to create learning opportunities flexible enough to meet provincial education and employment needs while aligned with the UNESCO's suggestions on flexible learning strategies. Moreover, with respect to teacher development, the EEF carries out research on ways to enhance teachers' skills, while supporting the establishment of prototype institutes that provide professional teacher training.

Subscribing to a collaborative strategy inclusive of stakeholder engagement, the EEF also promotes and assists agencies, whether from the public sector, private sector or civil society, that are involved in working with underprivileged children and students.

Source: The Equitable Education Fund (2020[33]), *What We Do,* https://www.eef.or.th/en/eef/#about-en

Finally, while Thailand has shifted from a content-based curriculum to a modern standards model that identifies specific knowledge areas the student should master for each subject area, the curriculum itself is not coherent and schools and teachers have not been able to implement it fully. This indicates a need to invest further in teacher development and preparation to cover the new curriculum and to better articulate the curriculum subjects with one another. Similarly, the newly established pre-primary curriculum should be reviewed to improve clarity, consistency, and relevance (OECD/UNESCO, 2016[22]).

In this context, Thailand's efforts should be directed towards improving structural factors that hinder the development of the right skills that respond to changing skills needs. Additional efforts should be made not only to increase the average level of skills of Thai youth – which are still low in international comparison as discussed above – but also to reduce the existing inequalities that prevent students from disadvantaged backgrounds to develop their full potential.

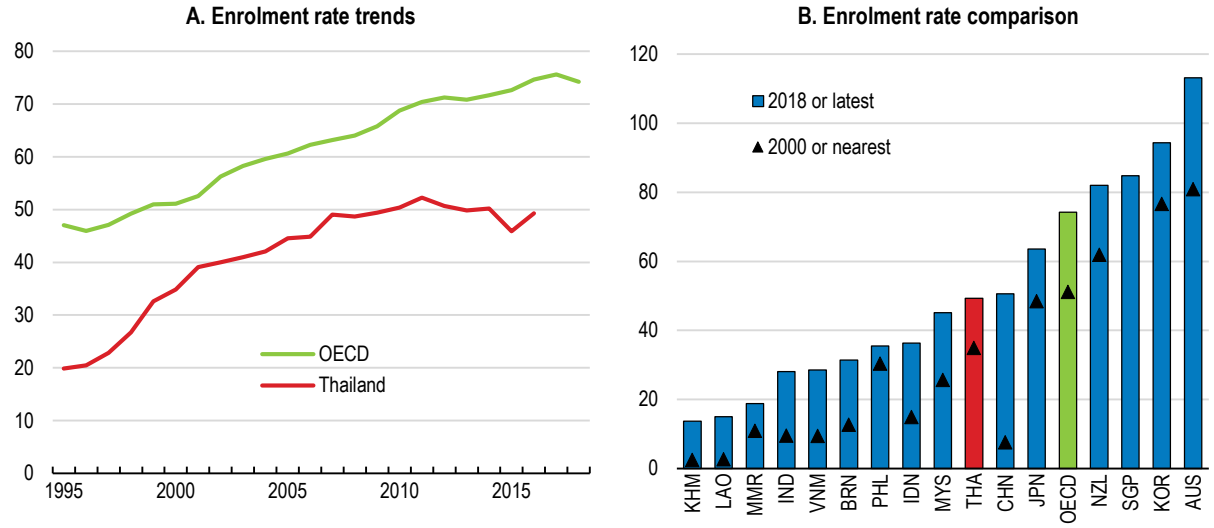
Supporting HEIs innovation and alignment of students' educational choices with labour market needs

Since the 1990s, significant expansion of higher education has occurred in Thailand, leading to a so-called education "massification", a term used to describe a situation of higher education enrolment extending beyond the nation's elite (Crocco, 2018[34]). During this time, the student enrolment rate has increased from

less than 20% in 1995 to roughly 50% in 2016 (Figure 2.10), one of the highest rates in the region, although still lagging behind the OECD average by more than about 20 percentage points.

Figure 2.10. Higher education enrolment has increased until recently

Gross enrolment rate in tertiary education, per cent



Note: The gross enrolment data shown above is calculated as the number of students enrolled in a given level of education, regardless of age, expressed as a percentage of the official school-age population corresponding to the same level of education. Gross enrolment rates can be over 100 because the number of students enrolled in a given education level may often include students that have an age above or below the age that officially corresponds to that education level.
Source: World Bank, World Development Indicators Database.

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The historical increase demand for higher education has also been reflected in the increasing numbers of higher education institutions (HEIs) being opened, especially through the establishment of new private HEIs, and to a lesser degree through the restructuring of some public ones (IECF Monitor, 2017[19]). In 2018, around 310 universities, colleges and tertiary academic institutions operated in Thailand.

However, after a high point in 2011, fluctuations in the enrolment rate began to surface (Figure 2.10) due to demographic challenges and a rapidly ageing population (Michael, 2018[35]). By 2040, it is projected that roughly 25% of the Thai population will be 65 years of age or older, with the number of tertiary education-aged students expected to sharply decline too (IECF Monitor, 2017[19]). In the 2018 admissions period, universities opened 156 216 spots for prospective students. However, only 105 046 took the entrance exams, leaving more than 50 000 places empty (Asian Correspondent, 2016[36]).

A rapidly ageing population and a shrinking student population present a challenge for HEIs to sustain enrolment rates and cover their costs. In order to increase competition within the higher education market in Thailand and boost the quality of HEIs and their alignment with labour market needs, overseas institutions, such as Carnegie Mellon University or National Taiwan University, have been invited to open branch campuses in Thailand. While the latter aims to offer courses in advanced engineering, the former is planning to open logistics engineering programmes, tying well into the objectives of “Thailand 4.0”.

In order to thrive amongst the heightened competition, Thai universities should be focusing on modernising their teaching methods in order to simplify course attendance for students and increase the provision of courses targeting the adult population. The use of online learning technologies is already prominent

amongst many overseas HEIs as well as certain employers, offering cheaper and easier-to-access courses attractive for an increasing number of students (Bangkok Post, 2019[37]). Given the disruptions to in-person attendance and university shutdowns brought about by the COVID-19 public health crisis, the importance of universities' investments into more technology-intensive options for delivering courses becomes further underlined.

Finally, it is likely that in order to improve their operational efficiency, some Thai universities might need to be merged with others to cope with a decreasing student population. Consideration might be given to mergers of administrative operations in order to reduce overhead costs, while universities keep their current names and locations. Beyond mergers, other joint operations, such as establishing cooperative networks or strategic partnerships, could be fostered. These can have the potential to contribute to efficiency savings through resource pooling, for instance by the means of sharing pedagogical staff, campus or research facilities. In Korea, the Yonsei University has partnered with the Pohang University of Science and Technology (POSTECH) and the Korea University, within the framework of the innovative "Open and Sharing Campus" model (Box 2.6).

Box 2.6. The "Open and Sharing Campus" university model in Korea

Similarly to Thailand and other Southeast Asian countries, Korean higher education institutions have been facing pressures to sustain their operations due to a contracting pool of students – a trend driven by the country's wider demographic challenges.

In order to address declining student cohort sizes, dwindling investment and challenges to keep up with the latest technological advancements, the Yonsei University in Seoul became party to the "Open and Sharing Campus" model in 2018. The model's objective is to allow universities to adapt to the challenges of a globalised 21st century society by emphasising the concepts of openness, sharing and maximised resource utilisation. Within the framework of the model, the Yonsei University has concluded a partnership with the Pohang University of Science and Technology (POSTECH) in Pohang, and the Korea University, respectively.

Thanks to the cooperative arrangement, Yonsei University and POSTECH students are now able to attend courses and obtain credits from both institutions, take part in joint research projects or utilise the other institution's libraries and dorms. At the same time, Yonsei University students can apply to receive an ID card to access all resources and services of the Korea University's libraries located in two distinct locations.

Apart from expecting significant synergy effects, the Yonsei University equally aims to support innovation through its participation in the "Open and Sharing Campus". For instance, merging the clinical data from the Yonsei University's Severance Hospital with the engineering technological tools from POSTECH has the potential to result in novel research conclusions.

Source: The Yonsei Annals (2018), http://annals.yonsei.ac.kr/news/articleView.html?idxno=1927

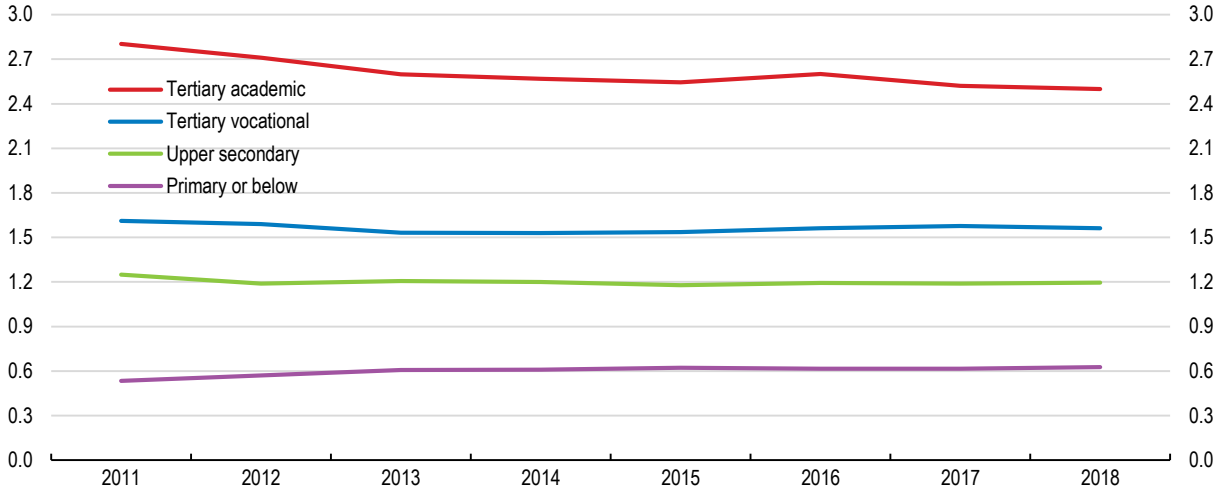
The pressure on Thai HEIs to maintain the sustainability of their operations is further intensified by evidence which shows that holding a tertiary degree has been well-rewarded in the Thai labour market. Despite the increased supply of tertiary educated workers until recently, the wage premium of university degrees, defined here as the ratio between the wage of workers with a university degree and that of workers with a lower secondary school diploma, has remained high.

As shown in Figure 2.11, in 2018 the average worker with a university degree earned a wage roughly 2.5 times higher than that of worker with a lower secondary degree. This figure shows that, despite a slight decrease from 2.8 in 2011, the demand for higher-level skills remains strong in relative terms. The figure

also shows that the wage premiums to vocational and upper secondary degrees have remained stable and equalled 1.55 and 1.18, respectively (meaning 55% and 18% higher salaries than secondary diplomas holders). In 2011, the average salary of workers in the lower educational attainment group was 47% lower than the salary of those with secondary education (wage premium was 53%). In 2018, the salary of workers in this group (primary education or below) rose and was then only 37% lower than the salary of workers with a lower secondary degree.

Figure 2.11. Wage premiums of university degrees are strong

Ratio of the average wage of workers relative the wage workers with a lower secondary diploma



Note: Wage premium is the ratio of the average monthly wage for each educational attainment group with respect to the average wage of workers with a lower secondary school diploma (omitted reference group). The figure shows the regression coefficients of a Mincer-type regression of relative earnings on the educational level of workers, after controlling for age, gender, and other individual-level controls (Heckman, Lochner and Todd, 2006[38]).
Source: Thai National Statistical Office, Labour Force Survey (2011-2018) and OECD calculations.

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However, and despite a steady increase in the wages of university graduates over time, the wage benefit to university degrees is slightly weakening. In line with Tangtipongku (2015[39]), data from the Thai Labour Force Survey shows that the wage of young workers with a university degree relative, for example, to the wage of workers with a lower secondary diploma, are somewhat lower than a decade ago. Changes in the wage premium to educational degrees reflect a mix of supply and demand factors in the labour market as well as structural factors in the economy. On balance, this evidence suggests that the rapid expansion of tertiary education in Thailand was not always matched with job opportunities for graduates (Paweenawat and Vechbanyongratana, 2015[40]).

In order to help students better understand the different education options and their returns in the labour market, Thailand should support the provision of high-quality career guidance services at the level of post-secondary and tertiary education. However, the 2018 PISA results show that fewer than one in ten Thai students receive advice from a dedicated school counsellor, with the burden of such counselling falling on teachers (OECD, 2019[41]). Effective career guidance, provided by specialised, well-trained and resourced education counsellors, should support Thai students in choosing courses or qualifications that are in high demand in the labour market and suited to their interests and skills. Thailand needs to provide additional resources to aid those students approaching the end of their studies in a smooth transition to the labour market.

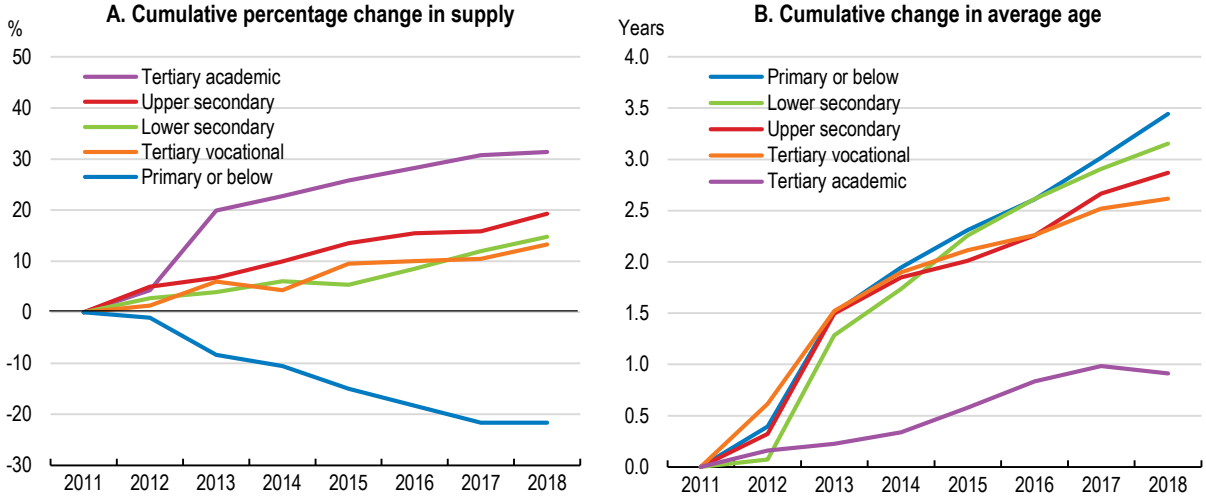
The ageing of tertiary educated workers has been slowed due to the influx of new graduates, especially in STEM fields

The education and demographic trends discussed above are having a profound impact on Thailand's labour force. On one hand, as enrolment rates in higher levels of education increase and the educational attainment of the general population rises, the Thai workforce becomes increasingly more skilled. Over the last decade, the share of highly educated workers has increased significantly, while the share of less well-educated workers has been declining. As shown in the left panel of Figure 2.12, the share of workers with a university degree increased by 31% in the period 2011-2018. In contrast, the share of workers with primary education or less was 22% lower in 2018 than in 2011. The share of workers with lower and upper secondary degrees and with tertiary vocational degrees has also risen by 15%, 19% and 13% in the same period, respectively, although these rates are significantly lower than the rate at which university graduates are joining the workforce.

The second increasingly apparent trend is the increase in the age of workers. As discussed above, the workforce is ageing rapidly, as cohorts shrink and life expectancy soars. The right panel of Figure 2.12 shows the change in the average age of workers with different levels of education. The average age of workers with primary education or below increased from 45.8 to 49.3 years in 2011-2018. Similar figures can be observed for workers with secondary degrees. For instance, the average age of workers holding an upper secondary degree increased by roughly three years – from an average of 33.6 years in 2011 to 36.7 in 2018. The only exception to this trend is the group of workers with university degrees. Although this segment of the workforce has aged, the change has been much less pronounced. The average age of university-educated workers increased by less than one year in the period 2011-2018 due to significant influx of young graduates to the workforce, which has helped curb the ageing trend observed in other groups.

Figure 2.12. Educated workforce is becoming older, except for workers with tertiary education

Cumulative change in the number and average age of workers by educational attainment since 2011



Source: Thai National Statistical Office, *Labour Force Survey (2011-2018).*

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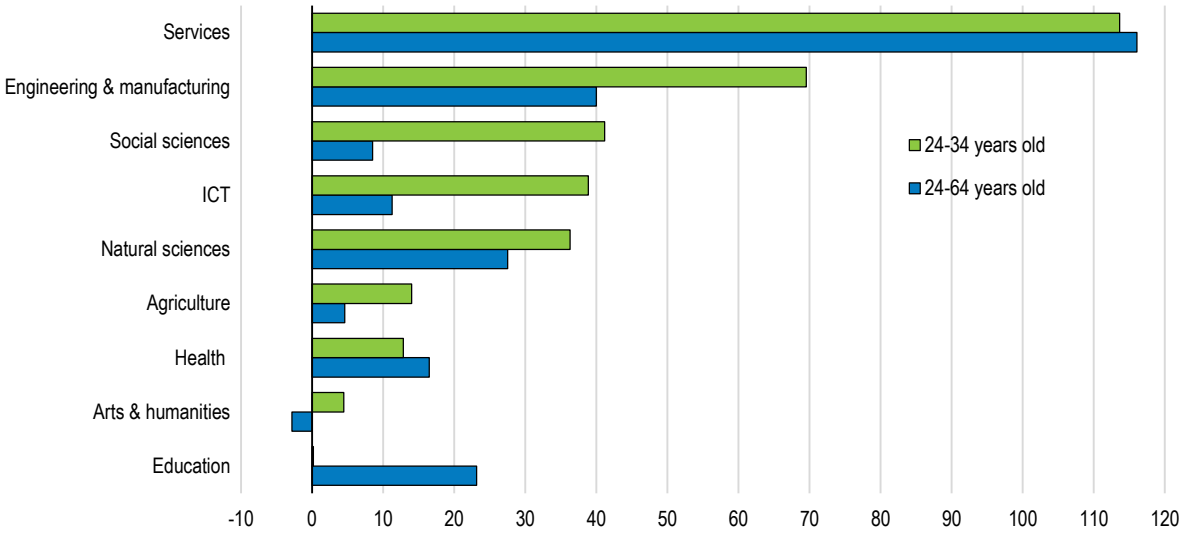
As thousands of students have obtained university degrees, the supply of young graduates (24-34 years old) with specific skills has risen. Figure 2.13 shows the change in the number of workers with university degrees by field of study and age group between 2011 and 2018. The figure shows that the number of

workers with degrees in the “service” field – which includes personal, transport and security services – has increased by more than 110% between during the period, although they still account for less than 4% of the workforce. The Thai workforce has experienced a sharp influx of young university graduates holding degrees in the fields of engineering and manufacturing, social sciences and ICT, which have seen an increase of 70%, 41% and 39%, respectively, during the 2011-2018 period. Such changes have also allowed the total supply of skills in these fields to increase in the workforce. For example, the total number of workers with university degree in the field of ICT (e.g. computing) and social sciences increased by 11% and 8%, respectively.

Figure 2.13. The supply of high-skilled workers in different STEM fields is increasing rapidly

Percentage change in the number of workers with tertiary education (ISCED 6 and above) between 2011 and 2018 by field of study



Source: Thai National Statistical Office, Labour Force Survey (2011-2018).

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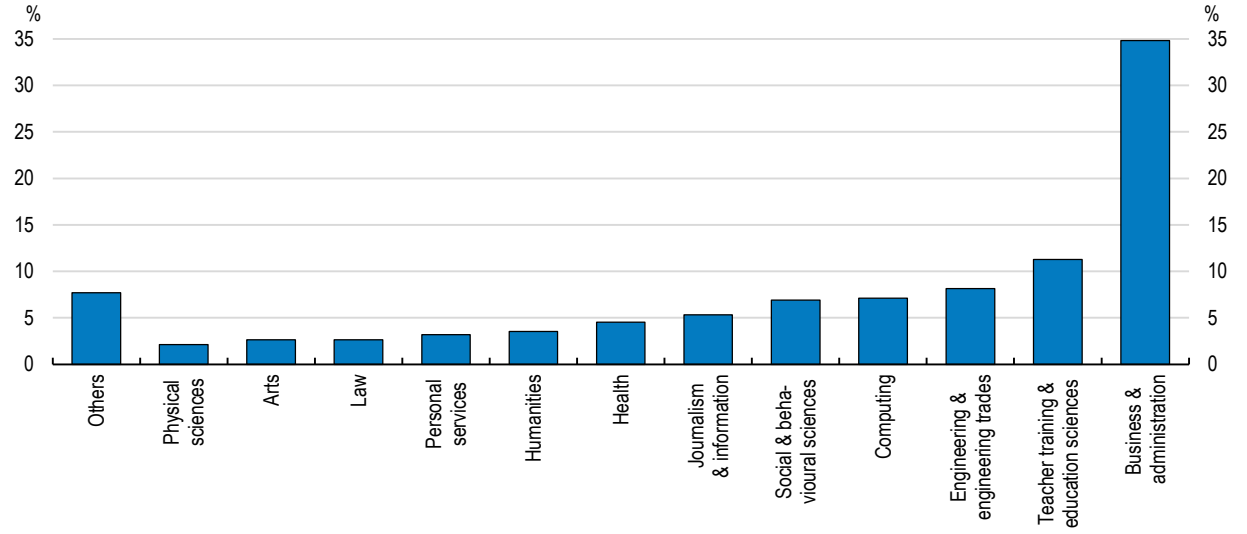
Figure 2.14 shows the share of workers in 2018 by specific major within the field. As shown in the figure, young Thai workers (24-34 years old) predominantly hold degrees with majors in business and administration, teaching, engineering and computing. The supply of skills in these fields – with the exception of teaching – is not only large in absolute terms, as measured by the number of graduates in the workforce, but it is also growing at a fast pace, as shown in Figure 2.12. The increased supply of such skills is aligned with several initiatives focused on stimulating specific higher education choices, in the context of a government strategy to transform Thailand into a more skill- and technology-oriented economy.

Figure 2.14. Young Thais workers predominantly hold degrees in business and administration



Source: Thai National Statistical Office, Labour Force Survey (2011-2018).

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There has been a sustained push by the government to attract increasing numbers of students into STEM (Science, Technology, Engineering and Mathematics) and STI (Science, Technology and Innovation) fields. The need to attract more tertiary students to these fields has been highlighted at all levels of national development plans, including the 20-year National Strategy (particularly Strategy for National Competitiveness Enhancement and Strategy for Human Capital Development and Strengthening), the 12th National Economic and Social Development Plan and other national reform plans. These fields are also considered to be necessary in driving the country forward according to current government policies, such as Thailand 4.0, First S-curve/New S-curve or ten targeted industries, and the Eastern Economic Corridor (EEC).

To achieve the goal of boosting the supply of skills in the STEM and STI fields, Thailand has developed several important programmes and initiatives over the past years (see Box 2.7). The COVID-19 pandemic has allowed for exemplifying the importance of such strategy, with technological innovations crucial for the health sector developed by medical and engineering departments of several universities. While the Mahidol University has invented cheaper and faster COVID-19 tests (Bangkok Post, 2020[42]), engineers at the Kasetsart University have presented a prototype of a disinfection robot to be used to disinfect high risk areas without putting sanitation workers at risk (Pattaya Mail, 2020[43]).

Box 2.7. Thailand's initiatives supporting skills development in STEM/STI fields

The "Engineering, Technology and Innovation Workforce Development" or "KOSEN" Project (โครงการพัฒนากำลังคนด้านวิศวกรรมศาสตร์ เทคโนโลยีและนวัตกรรม) aims to enhance national competitiveness and meet the new labour market demand through the development of practical engineers and technicians based on the Japanese unique engineering education called 'KOSEN'. The project is under partnership between the Thai Ministry of Education and Japan's National Institute of Technology and implemented by a joint KOSEN-KMITL (King Mongkut's Institute of Technology Ladkrabang) institute. Started in 2019, the project is expected to cost THB 4 700 million (approx. USD 154.9 million) under its 13-year long plan. In addition, Thailand has also created scholarships to support the development of scientific knowledge, including the "STEM Workforce Scholarship" Project (โครงการพัฒนาศักยภาพบุคลากรเพื่อการวิจัยและพัฒนาสำหรับภาคอุตสาหกรรม), which aims at providing financial support to research work focusing on ten targeted industries, or the "Development and Promotion of Science and Technology Talents" Project (โครงการพัฒนาและส่งเสริมผู้มีความสามารถพิเศษ ทางวิทยาศาสตร์และเทคโนโลยี), which aims at offering scholarships for science education and organising science camps for Thai students.

The Ministry of Education, in particular the Office of the Basic Education Commission and the Institute for the Promotion of Teaching Science and Technology (IPST) has also developed programmes targeting students in the school system, such as the "STEM Education Implementation" Project (โครงการขับเคลื่อนการจัดการเรียนรู้สะเต็มศึกษา), which aims to promote STEM education in schools across the country through the provision of training, equipment, facilities, monitoring and evaluation, distance learning as well as other supportive activities. From 2016-2021, the project is expected to cost THB 541 million (approx. USD 17.8 million) covering 30 717 schools by its end. Further, the IPST has facilitated the creation of the "National STEM Education Network", which includes a National Stem Education Centre, 13 Regional STEM Education Centres and STEM schools across the country with the aim of promoting the use of STEM education in daily and professional lives. Other efforts include the Junior Science Talent" "AI/Robotics for All" projects, among others.

Having invested resources to stimulate the supply of STEM skills in the labour force, the Thai government must also better coordinate these efforts to ensure that goals are achieved efficiently. To this aim, the government has established specific agencies and coordination bodies. For example, in mid-2019 the new Ministry of Higher Education, Science, Research and Innovation (MHESI) was created by merging the Office of Higher Education Commission with the Ministry of Science and Technology, and three committees have been established to promote STEM education in Thailand including the following: i) the Committee for STEM Learning Management, ii) Committee for STEM Curriculum Development, and iii) Committee for STEM Implementation in Schools. Looking to the future, the government's policy agenda includes new initiatives and projects, such as talent retention based on attractive wages/benefits, industry-university linkages through work-integrated learning, strengthening the postdoctoral and postgraduate research system, attracting foreign professionals and cross-sectoral talent mobility, among others.

Further stimulating the demand for higher-level skills to achieve full potential of Thailand 4.0

Previous sections have shown that there are strong reasons to support Thailand's effort to increase the educational attainment of its population and to promote the equal acquisition of higher-level skills among younger generations. Boosting people's skills not only pays off in the labour market, but it is also a necessary pre-condition to paving the way for Thailand's transition towards a technology-driven and an industry-oriented economy. Moreover, recent research has shown that common foundations and linkages exist between slowing productivity gains and rising or persisting inequalities (OECD, 2018[44]). For this

reason, in order to move up the value-added ladder, it is important for Thailand to reduce existing inequalities, increase the educational attainment and boost the supply of skills that are commonly needed in advanced and technology-driven economies. At the same time, these skills policies also need to be paired with policies that stimulate the demand for such skills in the labour market, such as boosting trade and the inflow of foreign direct investment (FDI) by removing barriers to entry for firms, supporting entrepreneurship and SMEs, and providing government support for innovation.

In order to help create demand for highly skilled workers, Thailand should intensify efforts to boost technology adoption levels. The country has already laid the right foundations by defining the objective of increasing R&D expenditure to 4% of GDP by 2032, as part of Thailand 4.0. In the context of an increasing number of tertiary educated graduates entering the labour market, Thailand should direct its focus towards the support of programmes and initiatives, which foster the development of technological advances as well as their diffusion within Thai enterprises. At the same time, support measures helping promising start-ups to scale up and adopt new technologies similarly hold potential to help bring the supply and demand for higher-level skills into balance in the long term (OECD, 2019[45]).

With potential to foster technology transfer and important knowledge spill-overs which had been importantly aiding to motivate the demand for higher-level skills, Thailand should maintain its focus on improving its FDI regime while advancing with further trade liberalisation. OECD (2019[46]) shows that FDI restrictions are associated with a lower stock of FDI per capita. Nonetheless, Thailand's regulatory framework governing the flows of inward FDI remains comparatively restrictive. On the OECD FDI Regulatory Restrictiveness Index, Thailand's scores of 0.291 (0=open, 1=closed) is above both the OECD and ASEAN-10 averages, while only the Philippines, Myanmar and Indonesia exhibit more restrictive FDI regimes (OECD, 2018[47]). Thailand could similarly make further progress with respect to trade liberalisation and facilitation. The OECD Services Trade Restrictiveness Index (STRI), which quantifies barriers to services trade, suggests that Thailand's regulatory framework should be less restrictive, as the current regulations lead to international trade impediments (OECD, 2018[47]), and thus suppress opportunities to develop more intensive demand for higher-levels of skills in the country.

Further opportunities for FDI could also be created by universities assuming a stronger role in supporting entrepreneurship. In this context, it is positive that Thailand has put in efforts to foster collaboration between academic institutions and entrepreneurs. For example, in the Eastern Economic Corridor (EEC) area, they adjust the courses provided to be in line with "Cooperative and Work-Integrated Education", where employers and institutions work together in structuring practical and theoretical parts of the curricula. However, more could be done through the creation of networks of universities and the private sector to promote SMEs and start-ups. While some universities are already offering training, mentoring, and facilitating access to credit, it is necessary to integrate and align all efforts to support local business and innovation to build strong linkages between universities and the start-up private sector. This could be achieved by creating physical spaces where academics can interact with private sector actors, joint financing from the private and the public sectors, international involvement, and creating other incentives to support the transfer of knowledge between science and industry. Further, all supporting universities and institutes could establish a network to share informational resources and strategies. Alternatively, establishing an institute for higher education institutions and SMEs that coordinates the efforts to stimulate entrepreneurship at a regional level could be another strategy. Box 2.8 presents an example of effectively engaging a variety of stakeholders, in relation to VET and adult education in Germany.

Box 2.8. Germany's Alliance for Initial and Further Training

In 2014, the Alliance for Initial and Further Training was established in Germany. The Alliance is both a document signed by the various partners and a body or discussion forum established to accompany and supervise the implementation of skills policies and initiatives agreed upon. Within the Alliance's structures, unions are formally represented by the German Trade Union Confederation (*Deutscher Gewerkschaftsbund, DGB*), which co-ordinates directly with major unions, such as the IG Metall (Industriegewerkschaft Metall), ver.di (*Vereinte Dienstleistungsgewerkschaft*), IG BCE (*Industriegewerkschaft Bergbau, Chemie, Energie*) and IG BAU (*Industriegewerkschaft Bauen-Agrar-Umwelt*) who are involved as member organisations of the DGB. Moreover, the representation of German Länder governments is also assured. In addition to the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder (KMK) as representative of the Länder education ministries, the Alliance includes a representative of the conference of Länder ministries for economic affairs and the conference of labour and social affairs ministries. The Federal Employment Agency (Bundesagentur für Arbeit, BA) is also an official partner. Other relevant partners include representatives from the various employer organisations and government departments. The Alliance thus encompasses an impressive range of stakeholders, effectively bringing together different government departments (education, business and labour), levels of government and stakeholders.

One of the most prominent topics that the Alliance deals with is ensuring a sufficient supply of training places for the youth. More specifically, the business partners in the Alliance have committed to providing 20 000 "additional" (rather than simply "new") apprenticeship training slots per year from 2015, as well as 500 000 internship places for students and pupils. Furthermore, the Alliance partners have re-stated their commitment to provide a training opportunity to every applicant, preferably in firm-based training. The business partners in the Alliance commit to providing three offers for firm-based apprenticeship training to youth who did not manage to secure a training place by 30 September (the official starting date of the training cycle), as long as the youth are regionally mobile.

Another notable policy instrument of the Alliance agreement is embodied by the "assisted apprenticeship" (*assistierte Ausbildung*), directed at improving the integration of disadvantaged youth into the training system. Before the Alliance agreement was enacted there were numerous instruments available to support the integration of youth who struggled to find a regular apprenticeship training slot in the open market. The assisted apprenticeship scheme, however, addresses an important gap in supporting measures by providing direct support, in the form of dedicated personnel with specialised social and pedagogical skills, for training firms that hire disadvantaged youth on a regular apprenticeship. The support is available for the entire training period. As youth are employed as regular apprentices within firms (rather than visiting out-of-firm training courses, for instance), their chances of securing employment after training is increased. The instrument of assisted apprenticeship is broadly supported by unions, employers and state actors. In the Alliance agreement, the government (i.e. the Federal Employment Agency) committed to financing 10 000 places for assisted apprenticeships in the first year of the Alliance period, and the signatories agreed that the instrument should become a regular element in the statutory toolbox of labour and training market policies soon thereafter.

Source: OECD (2020), Strengthening the Governance of Skills Systems: Lessons from Six OECD Countries, OECD Skills Studies, OECD Publishing, Paris, https://doi.org/10.1787/3a4bb6ea-en.

Entrepreneurial education could also be integrated with higher education, and in particular technical education. This could be done by training all staff and preparing resources in institutions of higher education such that local schools could offer courses that provide students with an entrepreneurial mind-set, motivation, and technical skills in parallel.

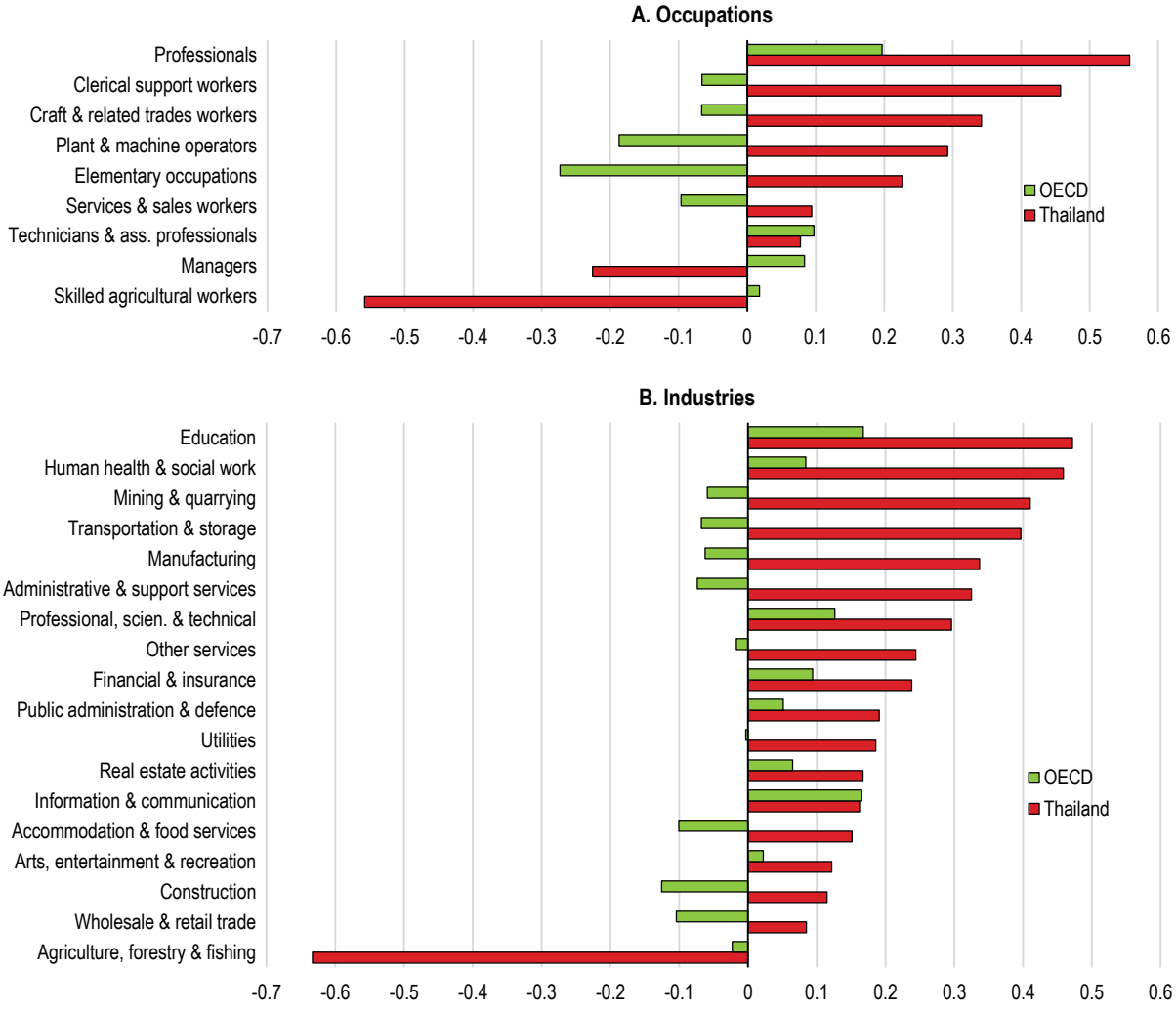
The state of skills imbalances in Thailand

In light of structural changes that impact the demand for and the supply of skills, it is becoming increasingly important that the skills of workers are effectively aligned with the needs of the labour market. Imbalances between the supply and demand for skills can emerge in the form of 'skill shortages' – when adequate skills are hard-to-find in the current labour market – or in the form of 'skill surpluses' – when certain skills are in excess in the labour market relative to the demand (OECD, 2017[48]). In addition, imbalances also comprise skill mismatch when a workers' skills or qualifications exceed or fall short of those required for the job under current market conditions (OECD, 2017[48]; Shah and Burke, 2005[49]). Mismatch can be measured along different dimensions, including skills, qualifications and field of study. Imbalances have been found to have negative consequences for individuals, firms and the economy more broadly, through lower productivity, wages and job satisfaction.

The OECD Skills for Jobs indicators measure skills imbalances in an internationally comparable way, see Box 2.9 for details on the methodology. As Figure 2.15 shows, the Thai labour market is facing substantial shortages in a range of occupations and industries. It is important to note that the data refers to the period before the COVID-19 crisis, and therefore reflects structural imbalances that are unrelated to this recent labour market shock. The largest shortages are found in professional occupations and clerical support occupations, but also in more technical occupations, like crafts and related trades workers and plant and machine operators and assemblers. When looking at the more detailed occupational level (not shown here), the occupations with the strongest shortages are: i) Health Professionals, ii) Legal, Social, Cultural and Related Associate Professionals, iii) Food Preparation Assistants, iv) Business and Administration Professionals, and v) Metal, Machinery and Related Trades Workers. This shows that shortages can be found across the skills spectrum. Surpluses, on the other hand, are mainly found for skilled agricultural workers. The latter is consistent with the long-term decline in the importance of agriculture in the total labour market. Certain management occupations, including Hospitality, Retail and Other Services Managers, and Chief Executives, Senior Officials and Legislators, are also facing substantial surpluses. A similar pattern of shortages and surpluses can be seen at the industry level (Panel B), with the largest shortages observed in the education sector, and large surpluses in the agricultural sector. These imbalances could be the results of several factors, including an inadequate supply (e.g. few university graduates with specialisation in health care, see Figure 2.15), skills of graduates not matching employers' requirements, and the attractiveness of working conditions.

Figure 2.15. Several occupations and industries are facing substantial shortages

Shortages (+) and surplus (-) intensity, by occupation and industry



Note: Values range between -2.5 (maximum possible surplus) and +2.5 (maximum possible shortage). The Thai results refer to 2018, the OECD results to the latest available year in each country. See Box 2.1 for details on the methodology.
Source: OECD, Skills for Jobs Database using Thai Labour Force Survey data (2011-2018).

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The shortages observed at the occupational level translate into shortages of cognitive skills, such as mathematical reasoning, writing and reading comprehension, but also certain social skills, like service orientation, and technical skills (e.g. programming and technology design). The knowledge areas found to be most in shortage are 'computers and electronics', 'clerical knowledge' and 'customer and personal service'. As Thailand continues to be exposed to global mega-trends, such as population ageing, globalisation and automation, shortages of high-level cognitive skills and social skills are likely to become even more pronounced, as is the case in many OECD countries today. Occupations that have a relatively low probability of change due to automation, which are generally the ones requiring high-level cognitive skills and/or social skills, are already more likely to be in shortage in many OECD countries. Moreover, OECD countries that have seen the strongest increase in their old-age dependency ratio are experiencing stronger shortages in health and personal care related jobs, which require strong social skills (OECD,

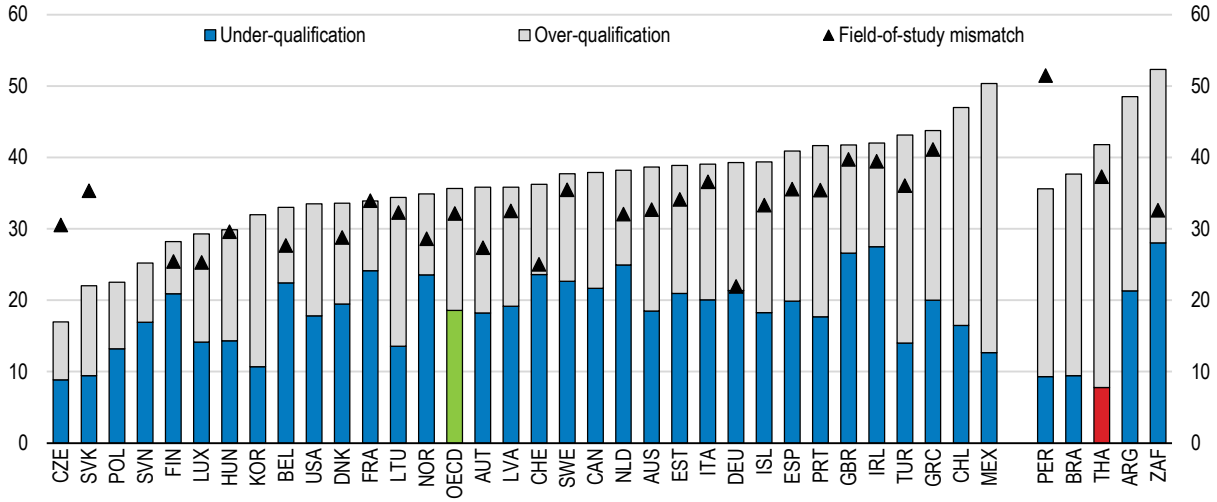
2017[50]). Moreover, in the United States, employment growth has been strongest in jobs requiring high levels of both cognitive skills and social skills (Deming, 2017[51]). In OECD countries, the occupations that combine high cognitive skills requirements with social skill requirements are the ones that are facing the strongest shortages (OECD, 2017[50]). Many countries are already facing shortages in ICT-related skills, and these could be expected to increase as technology adoption spreads across all types of occupations. Moreover, the need for strong digital skills was highlighted during the COVID-19 crisis, with many employers adopting telework and digital tools becoming essential also in daily life.

The recent COVID-19 outbreak exacerbated already existing shortages in the Thai healthcare sector. At the height of the COVID-19 healthcare crisis, the Thailand Nursing and Midwifery Council called for 400 experienced nurses to take care of the growing number of patients. Other sectors are also facing shortages linked to the COVID-19 crisis. This is the case for example for the agricultural sector, which employs a large number of migrant workers (and was facing excess supply of skills before the crisis). With the Covid-19 outbreak and ensuing border closures in Thailand, many migrant workers left Thailand, resulting in labour shortages in the agricultural sector. Other sectors are faced with excess supply of workers due to falling demand for goods and services. This is particularly the case for the tourism and hospitality sector in Thailand, which has been heavily impacted by lockdowns and the banned entry into Thailand by foreigners. The sector accounts for 9% of employment in Thailand, with many of the workers in this sector at risk of being out of work for extended periods (ILO, 2020[52]). The University of the Thai Chamber of Commerce estimates that up to 6 million people employed in the tourism sector and related sectors will end up unemployed, and the number could even rise to 10 million if the pandemic does not subside by the end of June 2020 (University of the Thai Chamber of Commerce, 2020[53]).

Finally, in addition to substantial shortages and surpluses, the Skills for Jobs data also show that the Thai labour market has a significant share of workers who are mismatched in terms of qualification level and/or field. In 2018, 7.8% of workers were under-qualified for their occupation, and an additional 34% were over-qualified (Figure 2.16). This is quite different from the qualification mismatch pattern observed in OECD countries, where on average 18.6% of workers are under-qualified and 17.1% over-qualified. However, similar patterns as the one observed in Thailand can be found in Turkey, Peru and Brazil. As discussed above, the presence of over-qualification in the Thai workforce is consistent with the fact that employment growth in Thailand in recent decades has been mainly concentrated in low-skill occupations (World Bank, 2016[54]). These findings are in line with the analysis carried out by the Bank of Thailand (เสาวณี จันทะพงษ์ and นางสาวกานต์ชนิต เลิศเพียรธรรม (Chantapong, Saovanee and Kanchanit Lertpienthum), 2018[55]), which shows that the demand in the Thai labour market is strongest for workers with lower vocational certificates and those with a secondary education or lower level degree, while the supply is highest for individuals with a tertiary education degree. Under-qualification, on the other hand, might reflect that employers have difficulties finding workers with the right qualification level and resort to hiring under-qualified workers. It should be noted, however, that under-qualified workers are not necessarily under-skilled for their jobs, as often workers acquire skills informally. A system of recognition of prior learning can help to certify these skills and make them more visible to employers. When looking at the field of study rather than the level of education, 37% of Thai workers are mismatched, compared to 32% across OECD countries.

Figure 2.16. Many workers are employed in occupation that do not match their education

Share of workers mismatched by qualification level or field, 2018



Note: Workers are mismatched by qualification level when their highest obtained qualification (primary education or below, lower-secondary education, upper-secondary and post-secondary non-tertiary education, or tertiary education) is higher or lower than the one most commonly observed among workers in the occupation. Workers are mismatched by field of study when the field of their highest obtained qualification does not correspond to the field of their occupation.
Source: OECD Skills for Jobs Database.

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Over-qualification is most common in Thailand among sales and service workers (59%) and Plant & Machine Operators and Assemblers (50%). The industries with the largest shares of overqualified workers are the Wholesale and Retail industry (48%) and the Accommodation and Food Services industry (48%). By contrast, under-qualification is most common among Managers (35.5%) and clerical support workers (35%), and in the Arts, entertainment & recreation industry (20%). Mismatch by qualification level is very uncommon in some occupations and industries: Only 7% of professionals and 11% of workers in the education sector are mismatched by qualification level. Field-of-study mismatch is especially common among those who specialised in arts and humanities (83% not working in their field) or in ICT (87%), while it is least common among graduates in the area of health and welfare (14%). Individuals might decide to work in a field that is unrelated to the one they studied for several reasons, including a lack of job opportunities in their own field and more attractive working conditions in other fields.

Box 2.9. The OECD Skills for Jobs Indicators

Shortages and surpluses

To analyse the degree of skill shortages and surpluses in countries' labour markets, the Skills for Jobs methodology uses five sub-indicators to extract signals of occupational shortage/surplus pressure: i) employment growth, ii) hours worked growth, iii) unemployment rate[a], iv) change in the share of underqualified workers, and v) hourly wage growth. For each occupation, the long-run trends of these indicators are measured relative to the economy-wide trends. The five indicators are aggregated into a final occupational shortage index.

To get an understanding of the actual skills that are in shortage or surplus (rather than the occupations), the occupational shortage indicator is translated into a skill need indicator by using information on skills requirements by occupation (from the United States Department of Labor's O*NET database)[b]. The final skills needs indicator shows the degree of shortage or surplus for a wide range of skills, abilities and knowledge types.

Qualification and field-of-study mismatch

Qualification and field-of-study mismatch measure the misalignment between a workers' occupation and his/her qualification level and field-of-study, respectively. Workers are said to be underqualified when their highest educational attainment is below the usually observed qualification level in the worker's occupation. In the opposite case, when a worker's qualification level is above the standard qualification level in his/her occupation, this worker is overqualified. Similarly, a worker is mismatched in terms of field-of-study when the field-of-study of his/her highest attained qualification does not match with the field generally required in the worker's occupation.

[a] The Thai Skills for Jobs analysis uses data from the Thai Labour Force Survey (2011-2018), and results for the occupational shortage index are based on four sub-indicators (as variations in the unemployment rate by occupation are too limited to extract meaningful signals about shortage and surplus).

[b] The assumption is made that skill requirements by occupations are the same in Thailand as in the United States. While the cross-country validity of O*NET has been confirmed for a range of OECD countries, some concerns have been raised regarding the use of O*NET for lower-income countries.

Source: Adapted from OECD (2017b), Getting Skills Right: Skills for Jobs Indicators, https://dx.doi.org/10.1787/9789264277878-en

Many countries are using similar types of analyses to understand the skill needs in their labour market. In Malaysia, for example, a Critical Occupations list is established every year, identifying the occupations that are facing talent shortages in the economy. To assess these shortages, quantitative information (e.g. employment growth, wage growth and vacancy rate) is used, combined with input from employers. The list is used in Malaysia to inform migration policy and to review programmes in higher education (OECD, 2019[56]). In Thailand, a data-driven analysis of skill needs does not seem to be carried out in a regular and holistic way. Several analyses have been done for specific sectors or regions (e.g. for the new S-curve industries and for the Eastern Economic Corridor). Every few years, the National Statistics office carries out an employer survey to understand labour demand (the latest one dates back to 2013). Finally, on a monthly basis, information is provided about vacancies and jobs fulfilled by industry, occupation and province. Taking stock of these exercises and facilitating knowledge sharing between the actors involved, could facilitate better collection and use of skill needs information in Thailand.

Reducing skills imbalances by promoting adult learning

As discussed above, a number of people in Thailand work in occupations that do not match their education and skills. In order to prevent such imbalances from arising in the first place, strengthening the responsiveness of the education system to the labour market needs is a crucial first step. Information on labour market and skills needs, which often rely on effective skills anticipation and assessment (SAA) exercises, should therefore be extensively disseminated to future graduates, and supported by robust career guidance services. At the same time, it is important that the needs of the labour market are translated into the contents of curricula and guidelines for work-based learning (WBL), especially at the level of VET schools. Further, an important component of aligning the educational offer with the labour market requirements is related to government incentives provided to educational institutions. These could take the form of regulation (e.g. defining the conditions for accrediting specific courses) or financing arrangements (conditioning the provision of funding on performance indicators related to graduates' employability or wages).

Still, many workers, who already left education, are at an imminent risk of being affected by structural changes. In addition, due to the recent coronavirus pandemic, there may be large and rapid shifts in the demand for labour across sectors than ever, while more workers may be displaced. On the other hand, the demand for higher-level skills may have increased (and might continue to do so) even in sectors that have traditionally relied on low-skilled labour, such as food services, retail, and administrative work (OECD, 2020[57]). All these trends would require more opportunities for fast and smooth up-skilling and re-skilling of the population affected by these changes. Adult learning systems therefore can play a key role in responding to changing skill needs and addressing or preventing skills imbalances. Yet, this is also where the challenge lies. In Thailand, as well as in many other countries, adult learning systems often lack focused attention and resources, putting in doubt their readiness to address future skill challenges.

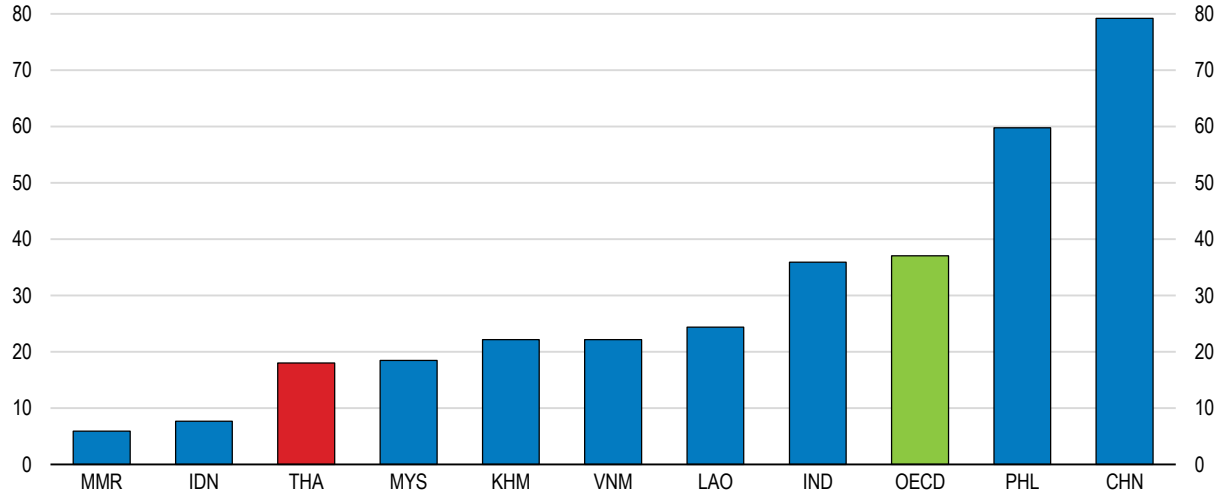
Promoting participation in adult learning

Adult learning systems are essential to help adults maintain and upgrade their skills to harness the benefits that the abovementioned megatrends will bring. However, available estimates for OECD countries show that, in most countries, those who need training the most have limited or no access to training (OECD, 2019[6]). Adult learning systems often lack focused attention and resources to ensure the training is accessible and aligned with the needs of the labour market, putting in doubt their readiness to address future skill challenges.

Evidence suggests that adults in Thailand have comparatively limited access to training opportunities. According to the World Bank Enterprise Survey, which contains information from over a thousand registered firms with at least five employees, only 18% of employers provided organised training activities to their workers between 2015 and 2016 (Figure 2.17). This share is much lower than the average in upper-middle income countries (36%) and East Asia and the Pacific (37.7%).

Figure 2.17. Relatively few firms train workers in Thailand

Percentage of manufacturing firms offering formal training



Note: Data refer to 2013 for China, 2014 for India, 2015 for Indonesia, Malaysia, Philippines and Viet Nam, to 2016 for Cambodia, Myanmar and Thailand, 2018 for Lao P.D.R. and to 2010-19 for the OECD average of 15 available countries. Only training that has a structured and defined curriculum (e.g. classroom work, seminars, lectures, workshops, and audio-visual presentations and demonstrations) is included.
Source: World Bank, Enterprise Surveys, http://www.enterprisesurveys.org.

StatLink https://stat.link/g2aruc

Adult learning systems must provide sufficient and equal opportunities for participation in training to all adults, including vulnerable groups such as women, older workers and low-skilled workers. Building capacity of enterprises, both large and small, is essential to provide sufficient training opportunities to all workers. In Thailand, the Skill Development Promotion Act is in place to promote training at the workplace. According to the law, enterprises hiring more than 100 employees are required to arrange training programmes to at least 50% of the employees, on the annual basis. However, rather limited workers can benefit from this law, as a large share of workers are in SMEs, with less than 100 employees.

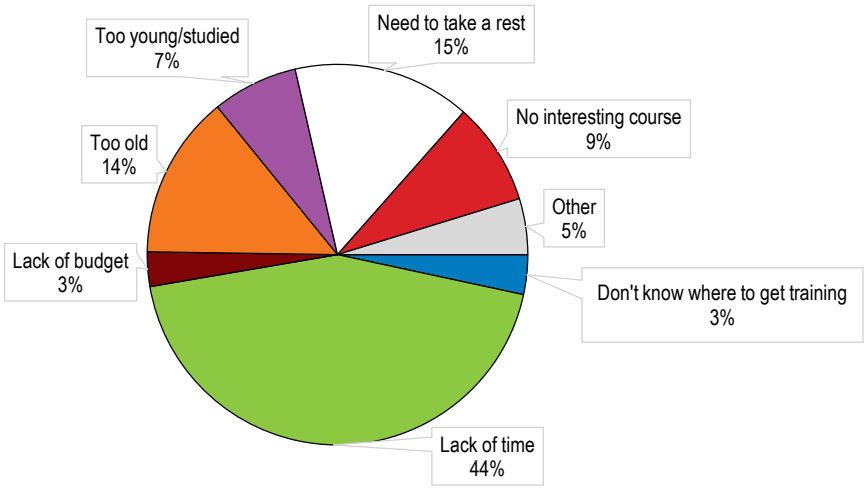
Across OECD countries 76% of companies with more than ten employees provide training for their staff (OECD, 2019[58]). Several OECD countries adopted measures that include a mix of hands-on consultancy and financial incentives to develop the capacity of companies to provide training. For example in Korea, building the capacity of SMEs to develop skills of their staff is the declared goal of the *Korean Subsidies for Learning Organisations*. Employers can access a set of complementary subsidies to hire external consultants to analyse the company's training needs, to provide training to CEOs and staff responsible for learning activities, to take part in peer-learning activities and to share their experience of building a learning organisation (OECD, 2019[58]).

On the other hand, in Thailand as well as in many OECD countries, evidence suggests that a majority of adults do not participate in training due to the high obstacles they face. According to Skills Development Survey data (2019) from the National Statistical Office of Thailand, about 91.6% of adults responded that they do not desire to participate in adult learning. The share of people who do not desire to participate seems to increase along with age. It is particularly high among adults over 60 years old (97.3%) and adults between 55 and 59 (92.3%), while it is relatively lower for younger adults between 15 and 24 (88%). On the other hand, the share is also higher among people with low education (95%) than with secondary education or higher (90%).

Adults might not want to participate in training for a variety of reasons, some related to a lack of motivation, others to practical barriers, such as financial and time constraints. The main barriers to participation in training for Thai adults include lack of time (44%), need to take a rest (15%), and too old for training (14%) (Figure 2.18).This could imply that many adults feel that their family or work related burdens are too great to schedule extra training, with long working hours. As pointed out by OECD (2019), to overcome this barrier, adult learning programmes should ideally be flexible (OECD, 2019[59]; OECD, 2019[6]; OECD, 2019[45]). Modular approaches are especially helpful in providing adult learners with greater flexibility on their learning path. They allow adult learners to focus on developing the skills they currently lack, complete self-contained learning modules on these skills and combine these modules to eventually gain a full (formal) qualification (OECD, 2019[59]). Research suggests that such provision can broaden access to formal qualifications, in particular for disadvantaged groups (Kis and Windisch, 2018[60]).

Figure 2.18. Adults face multiple barriers to participating in training

Reasons for not desiring to participate in job-related adult learning, 2019



Note: Other reasons include reasons due to sickness, handicapped, and unknown reasons, among others.
Source: Thai National Statistical Office, Skills Development Survey (2019).

StatLink https://stat.link/q6dc8y

In Thailand, recognition of credits and learning outcomes is possible through partial qualifications, professional certifications, modularisation of programmes, short courses and part-time courses. For example, the Bangkok Metropolitan Administration's (BMA) Vocational Training Center provides a number of job training courses, including part-time and weekend courses. Chiva-Som International Academy offers several short-term courses of a week to three months, which could lead to accredited certificate to become high quality spa professionals after completion. In addition, Massive Open Online Courses (Thai-MOOCs) has been developed as an open platform for education and learning under the concept of "lifelong learning space for all". Thai-MOOCs can be transferred to accredited certificates as long as courses meet the requirements of the Thailand Professional Qualification Institute. The online training opportunities could play a particularly important role to ensure people continue to have access to timely and relevant training even during the COVID-19 crisis, when face-to-face training is not possible. The availability of existing online training solutions has enabled many countries to continue the provision of training measures (on a selected set of skills that is possible to teach online) during the pandemic with a minimal investment (OECD, 2020[57]).

Many OECD countries offer some or several forms of flexible learning provision. In Mexico, participants in the Model for Life and Work programme (Modelo Educación para la Vida y el Trabajo, MEVyT), which provides learning opportunities for youth and adults to catch up on primary and secondary education, can combine different modules that cover a variety of topics. Some of the modules are delivered on an online platform (UNESCO Institute for Lifelong Learning, 2016[61]). In Denmark, for example, individuals working towards a vocational qualification in Labour Market Training Centres (*Arbejdsmarkedsuddannelse*) can choose from a wide range of vocational training courses but also tap into subjects provided by the general education system. This allows learners to tailor their education and training programme based on their individual needs (Richard Desjardins, 2017[62]).

Flexibility is also important when it comes to access to training policies and coverage of training rights. There is evidence to suggest that the share of non-standard workers (e.g. temporary, own-account, and platform workers) has risen in a number of countries, including Thailand, and many workers face more fragmented careers than before, with more frequent moves in and out of work as well as between different employment forms (OECD, 2019[6]; ILO, 2016[63]). These trends have raised concerns amongst policy makers that many of these workers are not adequately covered by labour market rights, including training rights. One adult learning policy that could improve access to adult learning for all workers, including non-standard workers, is an individual learning scheme (Box 2.10). To reach its potential, however, the scheme needs to be carefully designed, making sure of its simplicity, adequate and predictable funding, greater generosity for those in need, provision of effective information, advice and guidance, a guarantee of access to quality training, and explicit account of the links with employer-provided training, among others (OECD, 2019[64]).

Box 2.10. Individual Learning Account

Tying training rights to the individual rather than to the job

Individual Learning Accounts are virtual individual accounts in which training rights are accumulated over time. They are virtual in the sense that resources are only mobilised if training is actually undertaken.

The only genuine example of an Individual Learning Account is the *French Compte Personnel de Formation* (CPF), which is currently undergoing significant reform. In the CPF, training rights are accumulated over time. Initially, these rights were measured in of hours of training but, since January 2019, the unit of measure has become monetary (Euros). Training rights are accumulated at two different rates, depending on the initial level of education of the individual, with low-educated individuals accumulating more training rights. The CPF was initially available to employees and jobseekers only. Since January 2018, the self-employed are also covered, but in practice they have not yet started to use the scheme.

For jobseekers and employees, the scheme is financed through a compulsory training levy on firms equivalent to 0.2% of gross wages. Self-employed contribute 0.2% of turnover to a training fund. Up until December 2018, training funds – also financed by the training levy – could complement funding of training undertaken by employees via the CPF. Pôle emploi (the French public employment service) and the regions can also complement funding for training undertaken by jobseekers.

Credits can be used to pay for training fees of programmes that are required to deliver a certificate (certification), i.e. be registered at the Répertoire national des certifications professionnelles (RNCP) or at the répertoire spécifique. Skill assessments (bilan de compétences), actions for skill recognition, driving licenses, and training for business creation can also be covered.

Source: OECD 2019, "Individual Learning Accounts: Design is key for success", Policy Brief on the Future of Work, OECD, Paris

Another major obstacle to participation in adult learning in Thailand is the concern that many adults are too old for it. In most OECD countries, older adults participate less in training than prime age adults. Eurofound (2016) finds that older workers in Europe have limited access to training due to inadequate training provisions and fewer prospects for career advancement. Many employers perceive that training for older workers is a poor investment, which yields benefits over too short a time (Eurofound, 2016[65]). However, it is essential for older workers to participate in training to re-skill and up-skill, if they are to extend their working lives as life expectancy keeps getting higher. In order to keep older workers in labour force longer, sufficient opportunities to participate in adult learning, incentives for later retirement (e.g. tax benefits) and desirable working conditions for older workers (e.g. flexible working hours and part-time work options) should be provided. In addition, it is essential to make older workers aware of the importance of continuous re- and up-skilling through adult learning opportunities. Social campaigns, mentoring and guidance services can play a significant role in changing their mind-sets (OECD, 2017[66]).

Evidence found in OECD countries suggests that, at the aggregate level, technological change does not penalise older workers more than prime-age workers. However, age-related differences in the use of digital technology can put older workers at a disadvantage. In addition, age-related differences in the use of digital technologies also reflect the fact that older people generally work in more heavily routinised occupations than the younger generation. It is of high importance to improve their access to non-routine jobs through life-long learning (OECD, 2017[66]).

Some policies have been put in place in Thailand to foster adult learning for older workers. For example, the Ministry of Labour set a target to provide 18-30 hour job training to 8 160 elderly people between 2019-

2020, through Offices for Skill Development and Skills Development Institutes situated across the country. More than 100 courses, ranging from traditional cookery to social media, are developed according to area-based needs and new technology to ensure a secure income, self-reliance and to address labour shortages in specific areas. In addition, over 1 100 senior schools acts as a space for knowledge sharing and cultural events to promote well-being and personal development for elderly people (Ministry of Social Development and Human Security).

To overcome age-related barriers, it is of crucial importance that policy makers provide training that is more attractive in the eyes of older workers and persuade employers of the benefits of providing training to older workers. For example, training could be directly tied to a specific task or job to ensure that positive returns of training follow swiftly, benefitting both employers and employees at the end of their careers (OECD, 2017[66]).

On the other hand, evidence suggests that women may face higher barriers to participate in training, even though women are predominantly employed in the jobs that are more likely to be affected by automation, and therefore, sufficient re-skilling and up-skilling opportunities are essential (ILO, 2019[67]; OECD, 2019[68]). Traditional social norms and gender stereotypes put heavier burdens of unpaid care work on women, while leaving little time for them to participate in training. In addition, employers tend to underinvest in workers who are perceived to have a weaker attachment to the company, such as contract workers or women who may take up caring responsibilities (OECD, 2019[68]). Moreover, a large share of women work in informal sectors, where access to training is difficult.

In order to ensure women are included in adult learning, the Ministry of Labour of Thailand has developed a new STEM training program for women workers in the electronics sector. The Department of Skills Development (DSD) and the ILO worked together on a STEM related skills development programme for women workers. In the context of the Thailand 4.0 development plan, the programme aims to invest in women's capabilities and enhance their access to decent and productive employment. It is also in line with the objectives of the Decent Work Country Programme signed by the Ministry of Labour, employers and workers organisations early 2019. So far, 1 050 women workers at Seagate Technology plant in Korat, Sung Noen District, Nakhon Ratchasima province, completed the training programme (ILO, 2019[67]).

Several OECD countries provide training particularly targeting women. For example, in Ireland, Women ReBOOT, an enterprise-led initiative co-funded and supported by Skillnet Ireland, supports inactive women in developing skills and self-confidence to re-enter the technology sector after a career break. The programme includes group seminars, technology and knowledge training, individual coaching and in-company work placements. In Canada, unions play an active role in setting up specific training programmes for women in sectors where they are underrepresented (OECD, 2019[68]).

Finally, lack of motivation is one important barrier faced by adults, and evidence suggests that adults, in particular those with low skills, are unable to recognise the need to develop their skills further (Windisch, 2015[69]). Hence, the engagement of adults in learning activities should go beyond providing opportunities to those who ask for them. Providing high-quality information and individualised advice and guidance services, raising awareness on the benefits of learning, for example through awareness campaigns, ensuring that wages more closely reflect productivity gains resulting from training participation are some of the ways policy can encourage higher and more inclusive participation (OECD, 2019[68]; OECD, 2019[6]).

Strengthening adult learning investment and incentives toward in-demand skills

It is difficult but important to ensure adult learning is aligned with labour market needs in a rapidly changing world. To effectively support workers and job seekers, adult learning programmes need to be designed to reflect current as well as future labour market needs, and incentives for participants and providers need to be set to guide the choice of courses towards skills in demand. It is crucial that policy makers, individuals and employers have a good understanding of these changing skill needs, so that they can make informed

decisions on updating occupational standards, designing or revising training policies and programmes, setting appropriate incentives and providing advice to people on skill development (OECD, 2016[70]).

As discussed above, countries differ widely in terms of methods used to identify their skill needs, but also the extents at which these exercises are conducted, and how skills information is shared and used to inform policy-making. Thailand carries out skills assessment and anticipation, but not on a regular basis. Therefore, skills information is available but somewhat limited. The National Statistical Office, Ministry of Labour, and Office of National Higher Education Science Research and Innovation Policy Council, among others, provide information on current and future skills demand as well as skills shortages based on survey data and interviews with firms. This represents a useful source of information for the Office for Standard Development and Labour under the Ministry of Labour to develop national skill standard, standardised tests and skills requirements for new rising industries, such as next-generation automotive, intelligent electronics, robotics, and aviation.

However, evidence shows that the output from skills assessment and anticipation (SAA) exercises is not always fully exploited. Across European OECD countries, only 13% of firms have a complete overlap between the skills they identify as priority for the development of the firm and the skills they are training their workers in (OECD, 2019[59]). According to Skills Development Survey (2019) from National Statistical Office of Thailand, in 2019 the largest number of adult training courses were provided in agriculture, followed by management, home economics and computers. While training in these areas can certainly be important, it does not necessarily correspond with the areas that are in need of training the most according to SAA exercises. Thai employers could greatly benefit from a more thorough analysis of their skills and training needs and corresponding provision of training.

In some OECD countries, results from SAA exercises are used to determine which training programmes to deliver. In France, for example, the public employment service (PES) uses the information from an employer survey on recruitment activities and needs to decide on the amount and type of training courses to purchase from training providers (OECD, 2017[71]). In Portugal, regional branches of the PES analyse the skill needs in their region, including information on vacancies from the local PES offices, to determine the offer of vocational training within the network of Employment and Vocational Training Centres. In Denmark, sector-specific continuing training and education committees use skill needs information to determine which training programmes to offer in adult vocational training centres (OECD, 2019[68]).

One particular area in which many countries are actively developing adult learning programmes is digital skills. Digital skills have become increasingly important in recent years, and research suggests that their importance will continue to grow over the years, especially since the COVID-19 crisis. During the pandemic, teleworking and the use of online tools, such as video conferences, mobile banking and online courses, have increased significantly in numerous sectors around the world to maintain distancing and avoid personal contacts to the extent possible. This new way of working is likely to continue in many sectors of the economy even in the post-COVID world, reinforcing the importance of and demand for digital skills (OECD, 2020[57]). However, even though many countries now consider digital skills to be a foundation skill, along with literacy and numeracy, several countries are experiencing digital skill shortages (OECD, 2017[48]). In Thailand, several training programmes with a particular focus on new technology and high-tech skills are in place. For example, the Ministry of Labour's programme, Skills Development for Technological Changes in Manufacturing and Service Sector (*โครงการพัฒนาฝีมือแรงงานเพื่อรองรับการเปลี่ยนแปลงเทคโนโลยีของภาคอุตสาหกรรมและบริการ*), aims to provide training to 5 200 new workers with no or limited skills with particular focus on technology and foreign language in support of targeted industries. Another example is Increasing Workforce Potential for Thailand 4.0 (*โครงการเพิ่มศักยภาพแรงงานรองรับ Thailand 4.0*), a programme which aims to provide 30-hour training to more than 14 100 workers in potentially fast-growing industries, SMEs and the unemployed, focusing on five core technologies according to the Thailand 4.0 policy. ('Skills Development Guideline for Fiscal Year 2019' by the Department of Skill Development, Ministry of Labour)

Another way that adults can be guided in their choice of training options is by targeting certain financial or nonfinancial incentives to training programmes that address skill needs in the labour market. The availability of financial incentives for individuals, such as vouchers or grants, can be limited to certain training programmes. Similarly, employers can receive financial support, such as subsidies or tax exemptions, when training their workers for certain in demand skills (OECD, 2017[72]). In Austria, for example, a grant scheme (*Fachkräftestipendium*) is available for individuals participating in training related to PES-identified shortage occupations. This grant provides income support during the training participation, under the condition that the training programme lasts for at least three months and covers at least 20 training hours per week (OECD, 2019[68]).

A softer way of steering individuals and employers towards the development of skills that are in high demand in the labour market is through information and guidance. As one of the goals of career guidance services is to help job-seekers' transition into sustainable employment, information on labour market needs is generally taken into account when providing these services.

Incentives to encourage training particularly on in-demand skills are not in place in Thailand, yet. However, efforts are being made to provide high-quality career guidance. The Ministry of Labour in Thailand has established in 2015 'Smart Job Center', a platform to provide complete employment services including advice and guidance for career development. OECD (2019) shares good practices and examples of career guidance websites which provide information about skill needs. For example, the Canadian Job Bank web portal allows users to consult registered vacancies, and obtain information about the employment prospects of specific occupations in specific regions. The New Zealand Occupation Outlook provides extensive information on labour supply and demand in over 100 occupations (OECD, 2019[68]).

Assisting workers in sectors undergoing structural change

Adult learning must respond to changing skill demands by specifically targeting those adults who are specialised in skills that have become or are likely to become obsolete. For example, workers in jobs at high risk of automation may need to retrain to learn how to handle the introduction of new technologies, or to find a less automatable job either within the same sector/occupation or in a different one (OECD, 2019[68]).

There is currently no policy in place in Thailand to assist workers in sectors undergoing structural change. However, Thailand has recently set up strategic policy approach to support these workers. Several government agencies, including the Ministry of Labour and the newly-established Ministry of Higher Education, Science, Research and Innovation, have recently announced plans committed to supporting re-skilling and lifelong learning particularly for working age population who potentially face career and occupational change.

Some OECD countries already have programmes in place to re-train workers in firms facing major technological disruption. In Austria, Outplacement Labour Foundation (*Arbeitsstiftung*) programmes were introduced by social partners to support workers in the case of structural changes through appropriate labour market policies. These Foundations can be formed by one or multiple employers, but also at the sector and regional level when specific regions or sectors are affected by major staff cuts. The programmes are co-financed by local labour market actors, including the PES and the affected employers. Funding is available to cover training costs, allowances for course related additional costs, and active job-search assistance and career guidance costs (OECD, 2019[68]).

However, evidence suggests that, in general, relatively few countries have adult learning initiatives in place that directly target workers in jobs that have a high risk of undergoing significant change (OECD, 2019[6]). Preparing these individuals for the changes that are likely to happen in the near future is crucial to facilitate their transition into new tasks, jobs or forms of work. Strong basic and transversal skills are essential for people to respond to changing skill needs, and many countries have policies in place to develop these skills. However, further efforts could be made to make these programmes more widely available and

promote them among the most vulnerable workers. Strong SAA information is imperative for these individuals to make informed training choices and for governments to design effective policies that help them up-skill or re-skill for the jobs of the future (OECD, 2019[68]).

Table 2.1. Recommendations to get the right skills for future prosperity

Findings (main findings in bold)	Recommendations (key recommendations in bold)
Assessing skill needs	
Skill needs in the Thai labour market are not assessed in a regular and systematic way.	**Develop robust tools to regularly assess skill needs at the national, regional and sectoral level.** Create a knowledge-sharing platform to bring together the different skill needs assessment exercises carried out by different actors.
Skills development as the driver of Thailand 4.0	
Student achievement is low by international standards and regional inequalities are large.	Continue expanding pre-primary education and ensure it reaches the most vulnerable populations while investing in pre-primary teachers' professional development. Increase investment in teacher professional development, and re-structure the incentives currently in place for teacher placement. **Consolidate the implementation of school curricula and improve education infrastructure in rural areas.**
Rapidly ageing population and a shrinking student population put pressure on sustainability of Higher Education Institutions.	Continue efforts to stimulate competition between HEIs and strengthen the alignment between their study offers and "Thailand 4.0" while modernising teaching methods. Support the provision of high-quality career guidance services at the level of post-secondary and tertiary education.
Despite a slight decline in recent years, the wage benefit to university degrees is strong.	Continue efforts to increase educational attainment and support the development of higher-level skills. **Pair skills policies with policies that stimulate the demand for high-level skills in the labour market by lowering barriers to entry for firms, intensifying efforts to boost technology adoption levels and actively promoting entrepreneurship through professional and educational channels.**
Providing responsive and inclusive adult learning opportunities	
Data collection and analysis on participation of adults in training and employers' provision of training are lacking.	Improve existing household and/or employer surveys or build new surveys focusing on the topic of adult learning to retrieve detailed information. **Sufficiently use labour market information to develop relevant policies and adult learning programmes.**
Many adults, including older workers, low skilled workers and women, face high barriers to participate in training opportunities.	Develop flexible training programmes for adults and provide incentives to facilitate access to training.
There is limited guidance to help individuals and employers make skills development investments that correspond to the needs of the labour market.	Tie guidance services closely to labour market information, and make training incentives more generous for programmes that develop in-demand skills.
Workers going though structural changes do not have sufficient labour market information and access to necessary trainings.	**Promote targeted support (e.g. career guidance and trainings on skills in high demand) for workers in jobs with high risk of significant changes.** Provide them with training opportunities to gain strong basic and transversal skills to facilitate the smooth transition to new jobs or tasks.

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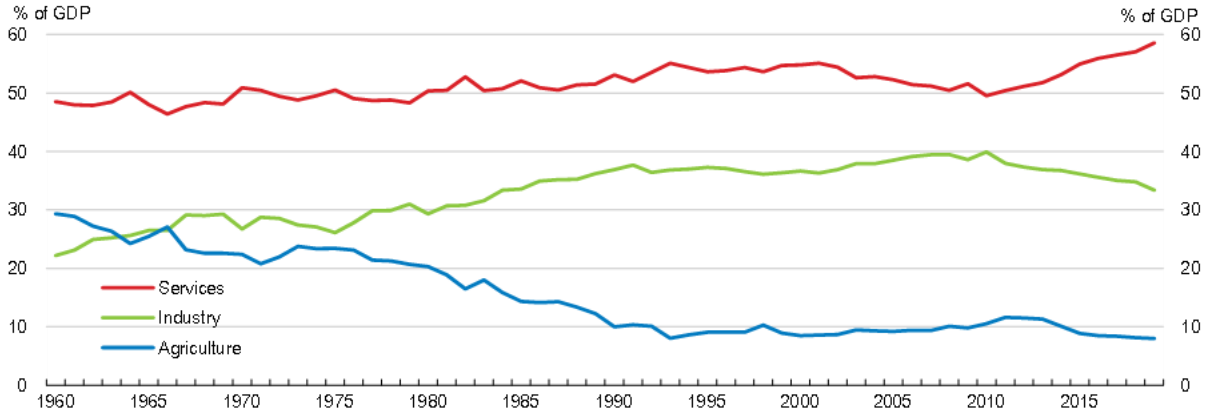
3 Making the most of international trade in services to achieve future economic prosperity

Services are an important part of global economic activity and of international trade. On top of the services supplied directly to consumers, services are also provided indirectly as components of manufactured goods. Digital services are a fast-growing sector and likely to remain so after the COVID-19 crisis and the rising reliance on contactless technologies. By contrast, services involving close proximity, such as tourism and international travel, have been hit drastically. To become a high-income country, Thailand needs to focus on high value-added services with policy support to the development of skills and technology. This chapter discusses how Thailand can seize the opportunity of growing international trade in services.

Services are becoming more predominant in the Thai economy

The importance of the services sector in Thailand has increased along with the rise of its income level. Economic development is associated with the expansion of the service economy. Thailand's economic growth has followed this typical pattern (Figure 3.1). As industrialisation took hold, the share of the agriculture sector in the economy decreased throughout the second half of the 20th century, while the share of the manufacturing sector in GDP increased. Since the late 1980s, post-industrialisation evolved in Thailand together with rapid income growth led by structural reforms and a foreign investment boom in the wake of the Plaza Accord. The services sector's share of value added and employment started to increase (Figure 3.1, Figure 3.2), while the share of the manufacturing sector flattened. After a slight decline in the mid-2010s, the services sector's share in GDP increased again and it reached its highest level in 2018. This contrasts with the declining GDP share of the manufacturing sector, which peaked in 2010. Activity, measured by value added in the volume terms, has expanded more rapidly in services than in manufacturing, particularly after 2010 (Figure 3.2).

Figure 3.1. The share of services is increasing in GDP, while manufacturing's is declining



Note: Industry sector includes mining and quarrying, manufacturing, public utilities and construction.
Source: CEIC; National Statistical Office (NSO); National Economic and Social Development Council (NESDC).

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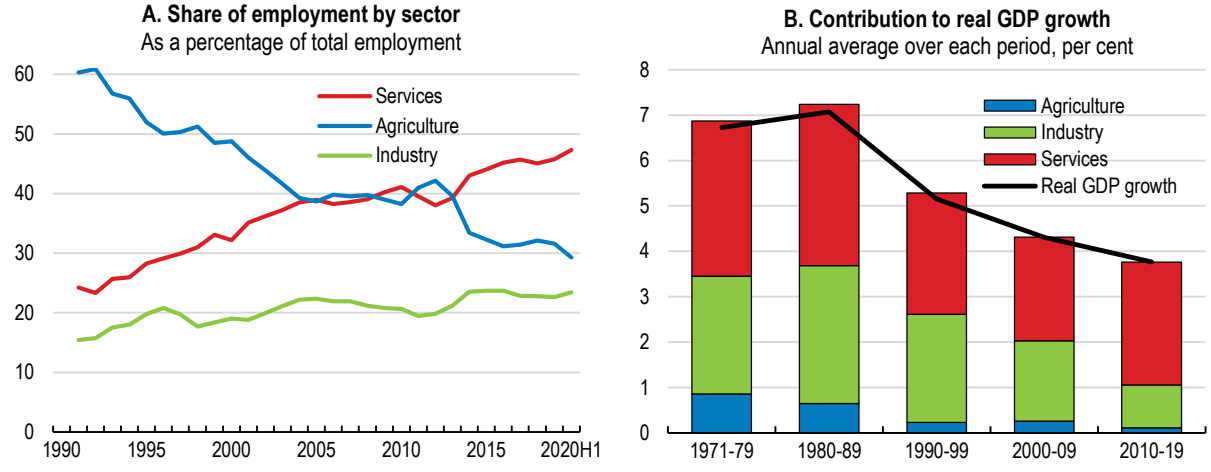
Figure 3.2. The services sector is the largest contributor to economic growth



Note: Industry sector includes mining and quarrying, manufacturing, public utilities and construction.
Source: CEIC; Thai National Statistical Office (NSO); Asian Productivity Organisation, APO Database, February 2020; World Bank, World Development Indicators Database.

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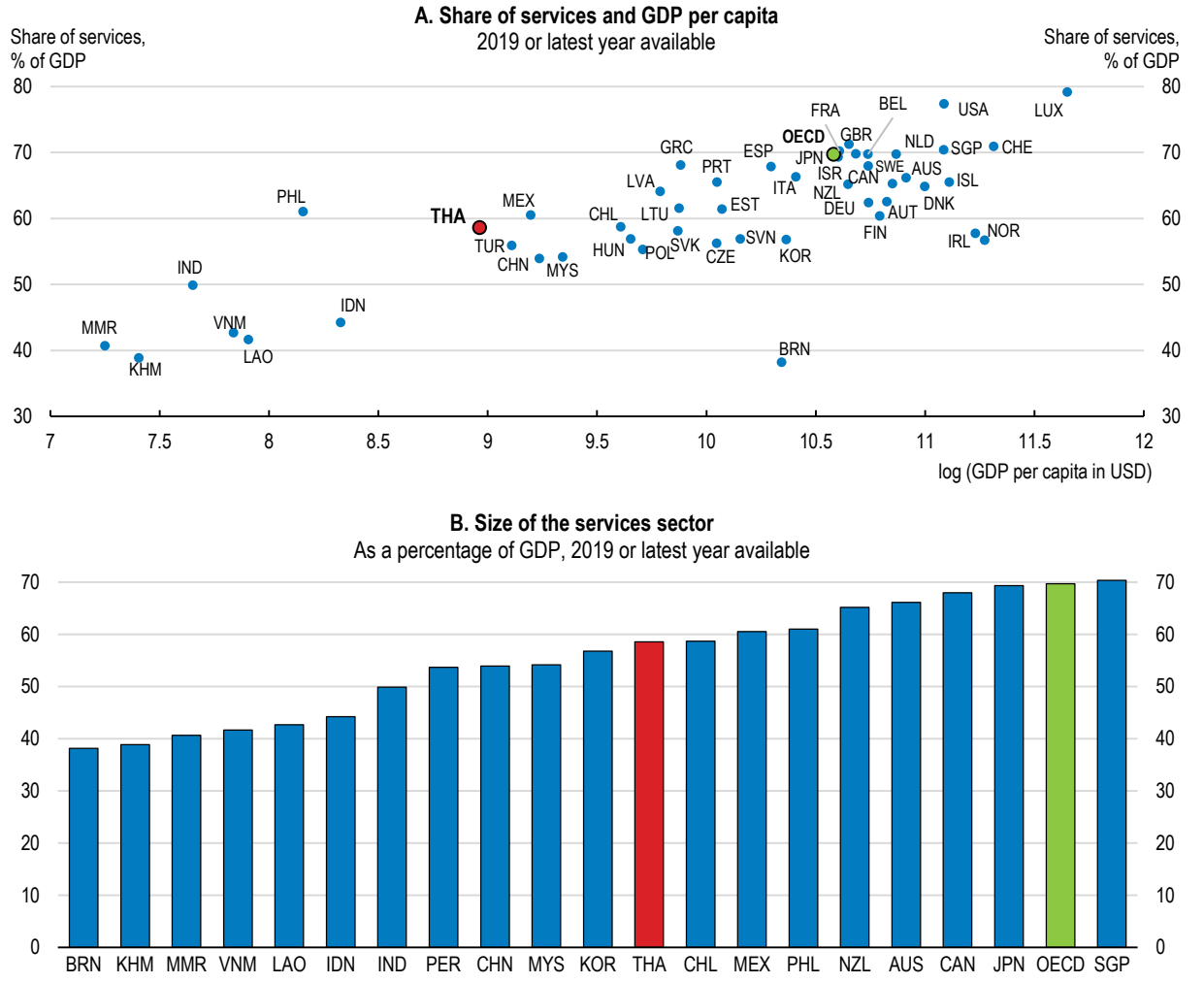
Reflecting the increase in the country's standards of living, the demand for services has also expanded. Households purchase more services, such as leisure, or outsource household chores as their incomes grow. In Thailand, the shares of "restaurants and hotels" and "recreation and culture" in household consumption expenditure increased from 19% to 27% between 2000 and 2018. Rapid urbanisation has enhanced this trend (Asian Development Bank, 2012[1]). The growing number of foreign tourists has also created strong demand for these services. In addition, firms in developed economies tend to purchase business services as intermediate input, such as financial services and information services, to satisfy their customers' needs and to improve their products. In Thailand, the share of "financial and insurance activities" in GDP increased from 4% to 8% between 2000 and 2018, which shows that, along with its economic development, more sophisticated business services sectors have been growing fast. Nevertheless, despite its increasing presence, the services sectors' productivity shows a mixed picture. The productivity level of some services sectors, which embrace a high share of employment, such as the hospitality and restaurant industry (a quarter of the total employment) is lower than that of others, while high-productivity business services employ a smaller share of workers (see Chapter 1). Lifting the productivity level of the former sectors while stimulating job creation in the latter is therefore essential to improve overall productivity level, but this also calls for a new policy focus to foster the development of novel services sectors that can drive higher productivity growth in the long run in Thailand.

Despite its fast increase, the services sector is still smaller in Thailand than in most OECD countries (Figure 3.3). The services sector is therefore expected to continue expanding in the future. A simple assumption suggests that its share in GDP could reach approximately 70% (i.e. 10 percentage points higher than the current level) when GDP per capita reaches the OECD average. The expansion of the sector is likely to accelerate as Thailand approaches the high-income status, as previously happened in other countries (Asian Development Bank, 2012[1]), (Park and Shin, 2012[2]) , (Eichengreen and Gupta, 2009[3]). However, this may be a lower bound. New technologies – such as digitalisation, artificial intelligence, and blockchain – offer new opportunities for the services sector, and could make it an even more important driver of Thailand's economic growth than is currently expected (Box 3.1). In fact, the usage of digital technologies – from teleworking to telemedicine – has spiked globally due to a historic pandemic of COVID-19 starting from early 2020. While efforts to contain the virus continue around the world, this new development would accelerate even further and become enduring after the pandemic, including in Thailand.

Figure 3.3. The share of the services sector is still lower in Thailand than in OECD countries



Source: World Bank, World Development Indicators Database.

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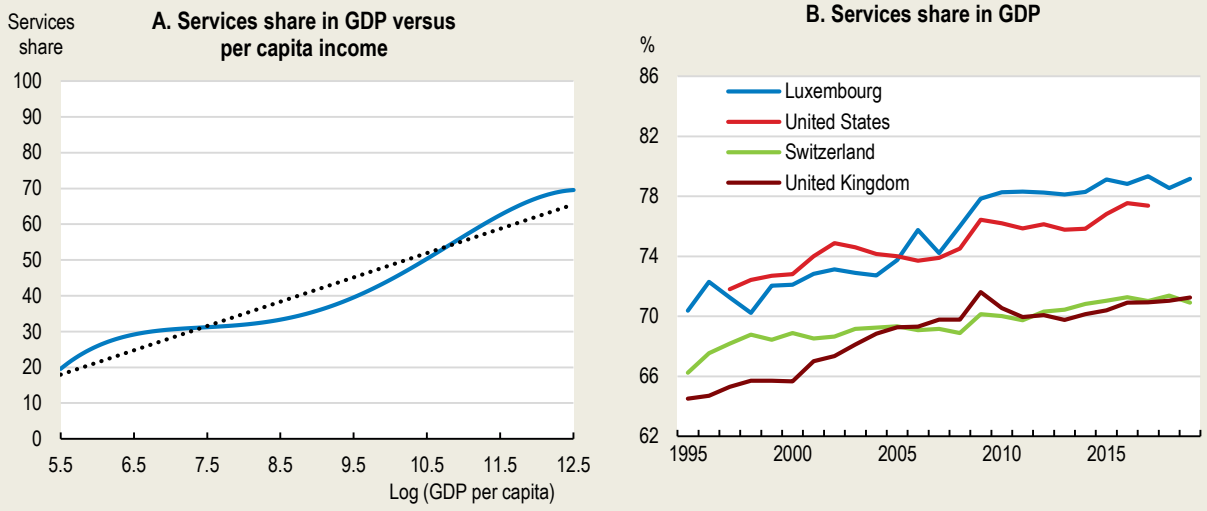
Box 3.1. Is a higher services share associated with a higher income level?

As the economy grows, modern business services, such as banking, insurance and information and communications, will become more important across the country, and complement existing traditional services produced and consumed locally, such as restaurants and hotels. Empirical work suggests that the economy experiences two waves of services sector growth as its income level rises, but the services share is expected to level off ultimately (Figure 3.4) (Park and Shin, 2012[2]), (Eichengreen and Gupta, 2009[3]). However, the recent rapid expansion of digitalisation might amplify this second wave and prolong its period (see Annex 3.A). For example, the services share in GDP keeps growing in some advanced countries, where financial and information services, among other services, are thriving (Figure 3.4). Besides, the increased dependency of society on information technologies triggered by the COVID-19 pandemic would result in a permanent level shift in the services share through the change of people's behaviour.

Figure 3.4. The share of services in GDP has risen



Note: Panel A shows a hypothetical case based on Eichengreen and Gupta (2009) and Park and Shin (2012).
Source: Eichengreen, B. and P. Gupta (2009), The Two Waves of Service Sector Growth; Park, D. and K. Shin (2012), The Service Sector in Asia: Is It an Engine of Growth?; World Bank, World Development Indicators Database.

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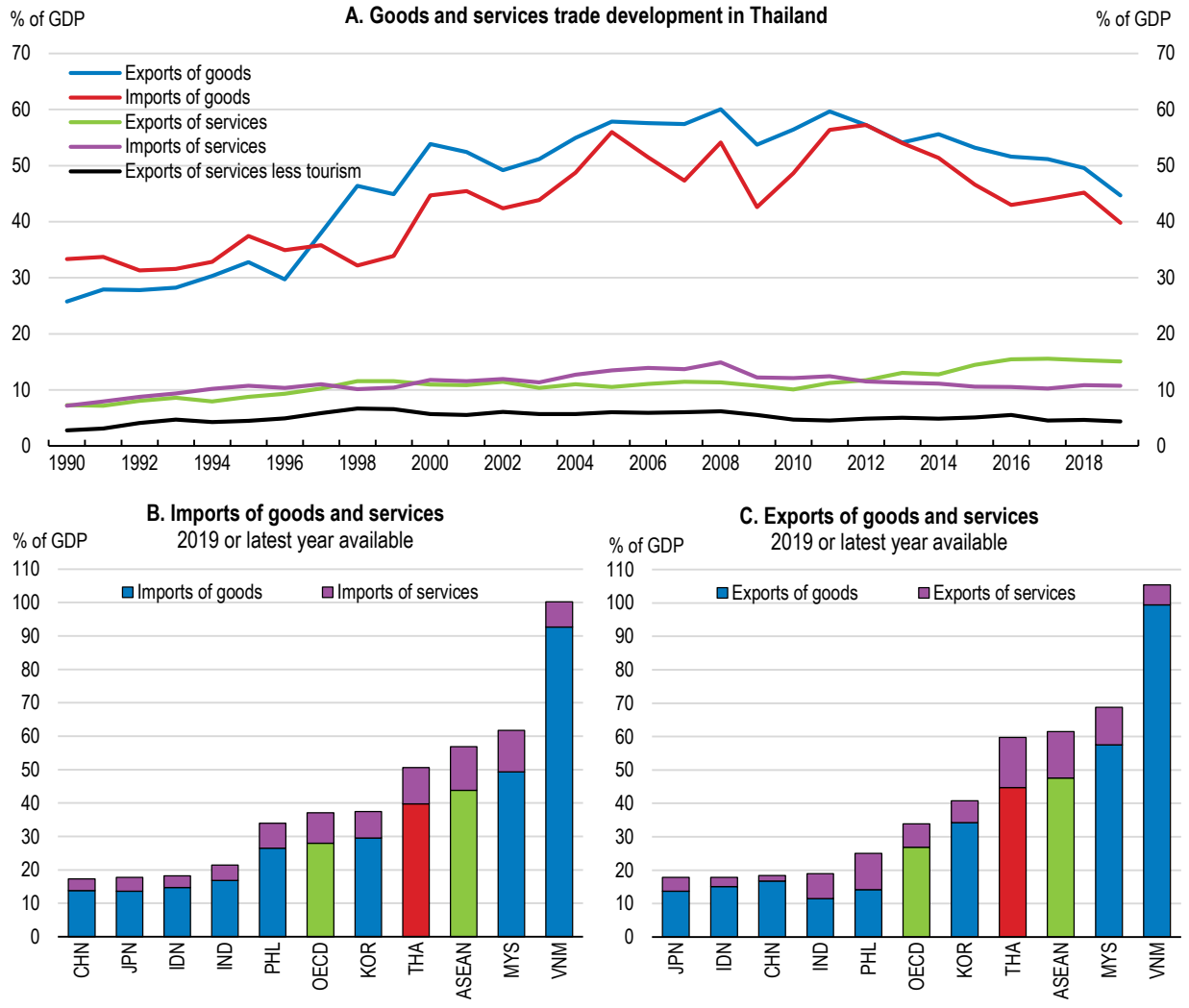
Services also play an important role in international trade

Services, which are conventionally viewed as less tradable, are now frequently traded across national borders. Although less vigorously than trade in goods, Thailand's international trade in services has increased along with the expansion of its GDP, and its services trade share in GDP is now comparable to other regional peers and larger than in OECD countries (Figure 3.5). Particularly, inbound tourism constitutes a considerable part of Thailand's services exports, as the country is one of the most popular destinations. The number of tourists, particularly from China, grew rapidly recently, though it has plummeted since early 2020 due to the COVID-19 outbreak abroad.

The development of Global Value Chains (GVCs) accentuates the growing trade in services. As GVCs intensify trade in intermediate goods, they also increase cross-border transactions of associated intermediate services, such as logistics. The COVID-19 pandemic has revealed some vulnerabilities of GVCs, such as stretched value chains and lean stock management. However, the strengthening of GVCs would not reduce the importance of these associated services trade, but rather increase it, as value chains would need to become more diverse and redundant.

Figure 3.5. Although less vigorous, trade in services has increased gradually



Source: World Bank, World Development Indicators Database; Thai National Statistical Office; CEIC.

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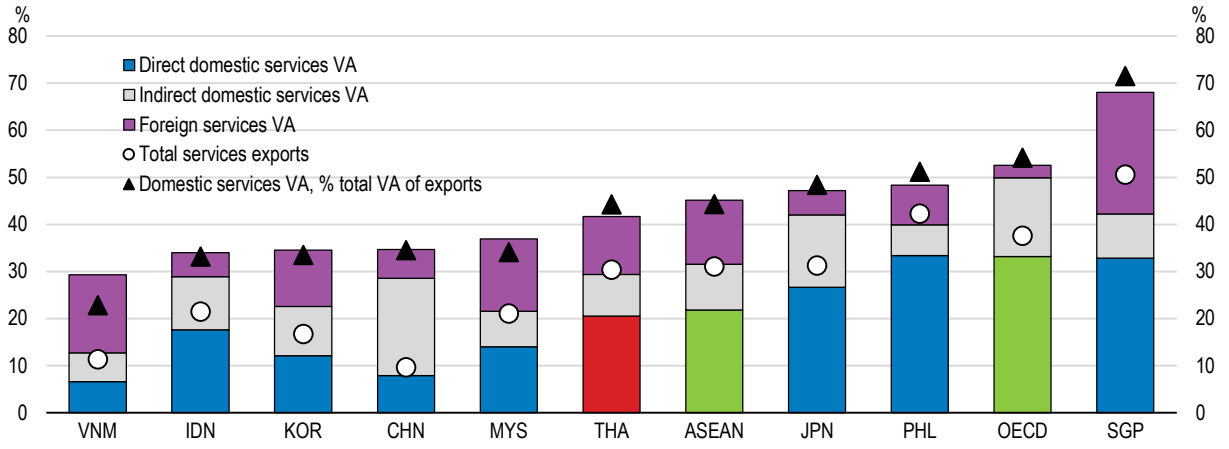
Moreover, as modern manufacturing requires more services input, such as marketing, industrial design and information services, more services are embodied in intermediate and final goods. Although many goods that embody services are crossing borders in GVCs, these services are not captured in conventional trade statistics. According to the OECD Trade in Value Added Database, which can capture embodied products and services in trade, services have a much larger share than gross services exports if these embodied services are taken into account (Figure 3.6). The emerging pattern of services is more significant

in value-added terms, which deduct imported services, than in gross terms that include imported services used to produce exporting products.

Figure 3.6. Services play an important role in global value chains

As a percentage of gross exports, 2015



Source: OECD, Trade in Value Added (TiVA) Database.

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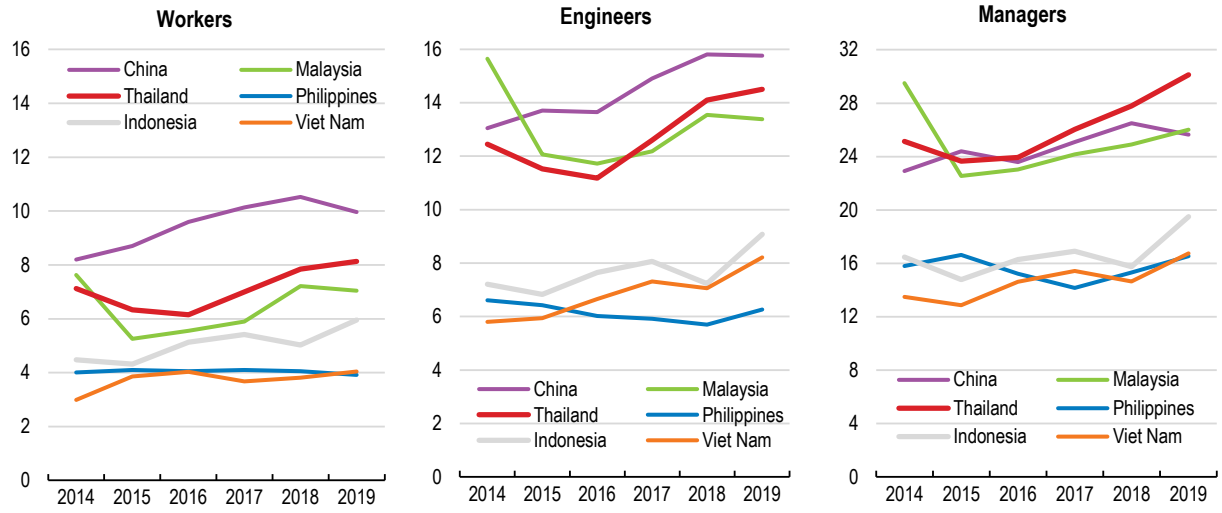
A stronger policy focus on services trade is promising

The dynamism of Thailand's services sector needs to be boosted further. The manufacturing sector, which has actively participated in international trade, has been the main driver of growth of Thailand. However, this goods-exporting economic development model may have matured. As Thailand is becoming a high-income country, its cost competitiveness is getting eroded (Figure 3.7). Regional competition on product quality has become more significant because of technological progress made in neighbouring countries, such as China and Viet Nam. Manufacturing needs to further improve its products and production processes by using highly advanced technologies to compete in international markets. Besides, as modern manufacturing products are associated with unbundled services contents that are provided separately, such as maintenance and customer services, more trade in goods goes hand in hand with more trade in services. This will provide Thai firms tremendous business opportunities.

Figure 3.7. Thailand's relatively high wages erode the competitiveness of its manufacturing sector

Annual wages in manufacturing by occupation, current USD thousand



Source: JETRO (2019), Survey on Business Conditions of Japanese Companies in Asia and Oceania.

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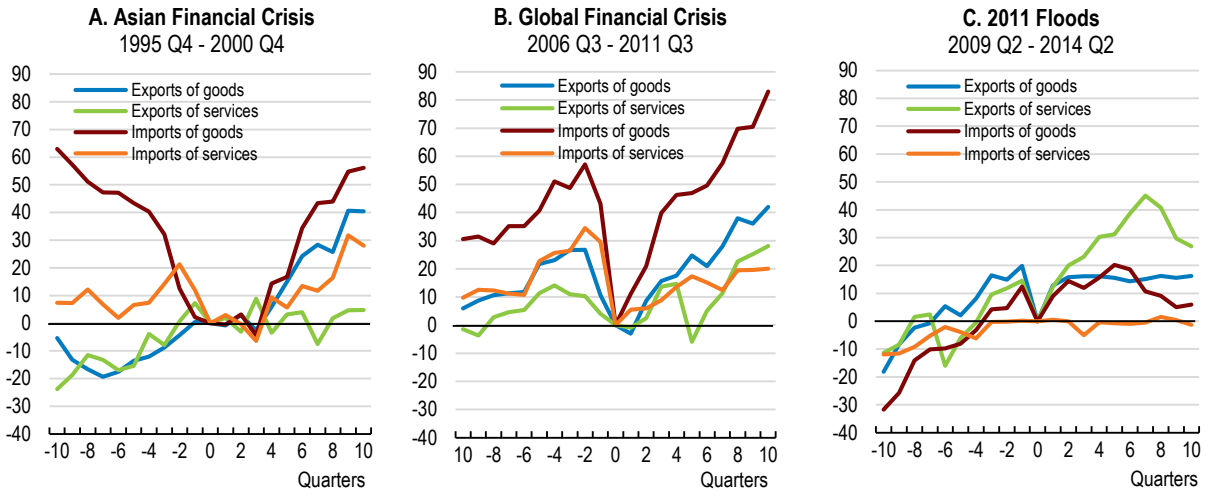
Moreover, as advanced manufacturers conduct core services businesses required in upstream and downstream production processes, such as information and distribution services, by themselves, the nature of manufacturing is changing. These developments call for policies shedding more light on the service economy. Nevertheless, the rise of services does not itself guarantee economic prosperity in the future. The productivity levels of some services sectors are lower than that of manufacturing in Thailand (see Chapter 1) (Noland, Park and Estrada, 2012[4]). In addition, the competitive edge of some high-end business services – namely, IT and information, and other business services, the latter of which includes professional services – is rather weak in Thailand, which needs to be enhanced (see Annex 3.B).

Strengthening export-oriented services sectors would also help economic growth of Thailand be more resilient. During the past crises, Thailand's services trade was more stable but less vigorous than its merchandise trade. Nevertheless, inbound tourism, where Thailand has a competitive edge, contributed a lot to a strong economic recovery from the 2011 floods (Figure 3.8). Nurturing newly evolving services sectors would help expand Thailand's export markets, and thus would make its exports more robust (see Annex 3.C). Given the accelerating digitalisation, strengthening the export competitiveness of high-end business services sectors would be crucial. In addition to its strong commitment to international trade, thanks to a wide range of exports products from agriculture to manufacturing goods, Thailand's exports consist of an extensive coverage of products and are more distributed compared with regional peers (Figure 3.9). Developing new and competitive services exports would further strengthen its export diversification.

Figure 3.8. The recovery of services exports was strong after the last crisis



Note: The curves show the percentage change of the trade indicators relative to the trough (quarter 0) of each period crisis. Quarter 0 corresponds to 1998 Q2 for the Asian Financial Crisis, 2009 Q1 for the Global Financial Crisis, and 2011 Q4 for the 2011 Floods.
Source: NESDC.

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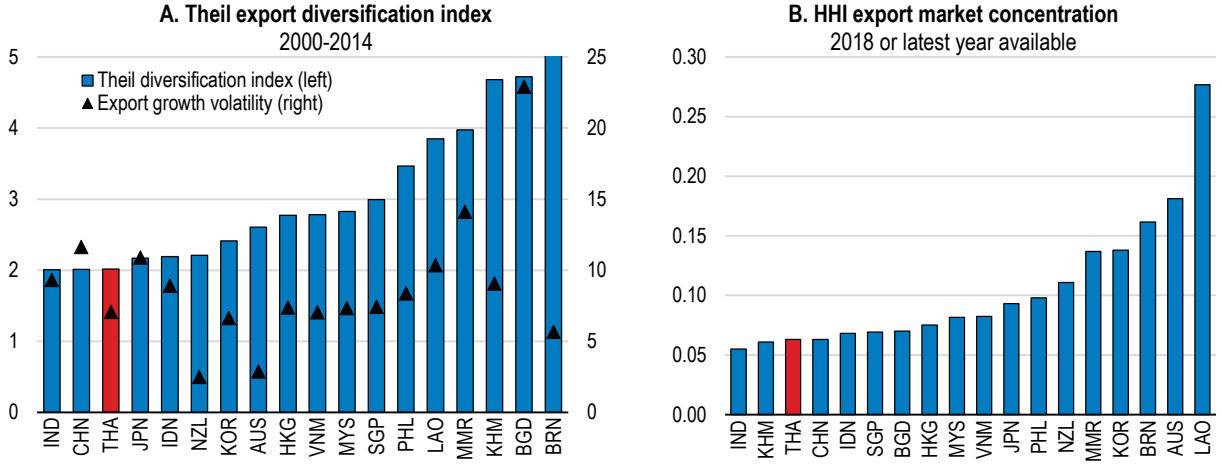
Figure 3.9. Thailand's exports are more diverse



Note: The Theil index measures the extent of diversification across a country's exports on products and partners. A country with exports that are more distributed or contain a wider range of products and partners has a smaller value.
The Hirschman Herfindahl index (HHI) is a measure of the dispersion of trade value across an exporter's partners. A country with trade (exports or imports) that is concentrated in a very few markets will have an index value close to 1. Similarly, a country with a perfectly diversified trade portfolio will have an index close to zero.
Source: IMF; World Bank, World Integrated Trade Solution Database.

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Promoting services trade calls for holistic reforms in services markets

As more services are crossing borders, Thailand could consider more services market reforms in the context of globalisation. However, policy for trade in services should focus not only on cross-border trade but also on the functioning of domestic markets, since services are provided through a range of modes, such as foreign affiliates or foreign workers in Thailand (Box 3.2). For example, foreign affiliates can act as suppliers of more sophisticated services to the Thai manufacturing and consumers, expanding the services sectors in Thailand thus also benefiting Thailand's domestic economy. Estimates suggest that the services provided in Thailand are important contributors to productivity of manufacturing (see Annex 3.D). Ameliorating services quality needs the overall reforms in services markets. Particularly, the following four areas are most relevant to Thailand.

- Opening the services markets more to foreign firms and workers;
- Developing more service-oriented Preferential Trade Agreements (PTAs);
- Nurturing high-end business services, such as information and professional services;
- Improving the quality of consumer services, such as tourism and higher education.

Reforming the services sector would also benefit the Thai consumers. Throughout the last two decades, the share of services in total household consumption has declined despite their increasing volume. As consumer services, such as retail trade and leisure, are more geared to domestic demand, particularly towards household consumption, this would also help rebalance economic growth to a more stable and durable path amid the looming ageing society. In an ageing society, elderly people may purchase different types of services compared to younger people: in addition to health-related services, demand for leisure with high value-added would increase. If elderly people decide to participate in the labour market more actively, education services might be more consumed than now for re- and up-skilling.

Due to the global pandemic of COVID-19, a number of countries including Thailand have imposed border restrictions to ban the entry of foreign visitors. However, as a wide range of services trades is associated with the cross-border mobility of people (e.g. experts are dispatched to a host country to set up a new factory or to renew equipment), it would be also essential to keep the country open to abroad, while containing the resurgence of virus infections.

Box 3.2. What is international trade in services?

As most services are intangible and cannot be stored, the notion of international trade in services is quite different from that of goods, the latter of which is discernible when goods cross the national borders. The scale and scope of trade in services are much broader than those of goods. The World Trade Organisation (WTO) distinguishes four different types of trade in services.

- **Mode 1**: Cross-border trade of services – this is similar to trade in goods. An example is information and audio-visual services provided by foreign firms via the Internet;
- **Mode 2**: Consumption abroad – consumers purchase services visiting other country. This includes tourism, education and healthcare services;
- **Mode 3**: Service provision by commercial presence abroad – Firms establish affiliates in other country to provide their services directly to foreign customers. Foreign investment is a snapshot of this activity, as foreign investment, if it is not merger and acquisition, aims at setting up commercial presence abroad;
- **Mode 4**: Service provision by foreign workers – foreign workers provide services visiting or living in other country as an independent supplier or employee. Professional services, such as engineering and consultancy, are included in this category.

The traditional trade statistics, i.e. the Balance of Payment, can only capture trade in Mode 1 and a fraction of Mode 2 (tourism) and 4 (part of commercial services). Besides, there are two other types of trade in services, which the traditional trade statistics cannot capture appropriately. The OECD Trade in Value Added Database is a tool to analyse embodied services trade.

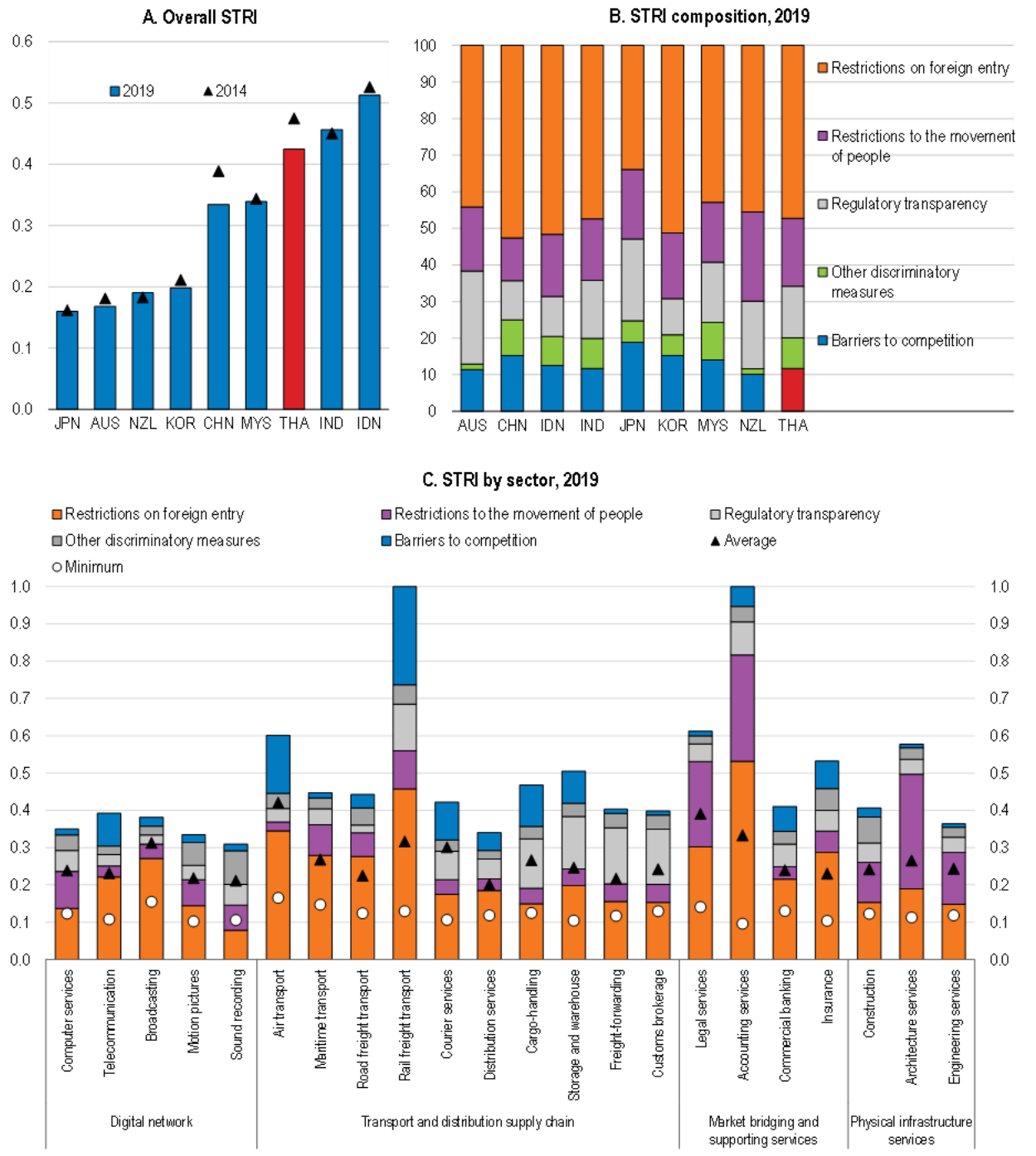
- **Embodied services**: Services are indirectly traded as embodied contents of goods, such as marketing and industrial design. GVCs amplify the volume of embodied services trade;
- **Within-firm transaction**: Multinational firms trade services internally, such as management.

Opening up services markets would improve Thailand's competitiveness

The OECD Services Trade Restrictiveness Index (STRI), which is newly available for Thailand, provides a landscape of regulatory openness in 22 business services sectors (Box 3.3). The index suggests that, overall, Thailand is less open to the delivery of foreign services compared with OECD countries, China and Malaysia, while less restrictive than Indonesia and India (Figure 3.10). Rail freight transport, accounting services and insurance services are the three sectors with the highest score relative to the averages of other countries (OECD, 2020[5]). Besides, the restricted sectors in Thailand are likely to be less competitive in international trade (Figure 3.11). A further opening of the markets would not only boost productivity and improve export performance through enhanced resource allocation, but also provide the long-run dynamic gains by facilitating knowledge transfer and innovation, which are more crucial for Thailand's economic achievement (Box 3.4). Competition and regulatory reforms would also invigorate domestic services sectors. The OECD's Competition Assessment Toolkit (CAT) identifies potential competition barriers in the Thai logistics sector (OECD, 2020[6]) (Box 3.5).

Figure 3.10. Thai services markets are more restricted than those in OECD countries

Index score from 0 (open) to 1 (closed)



Source: OECD, Services Trade Restrictiveness Index Regulatory Database.

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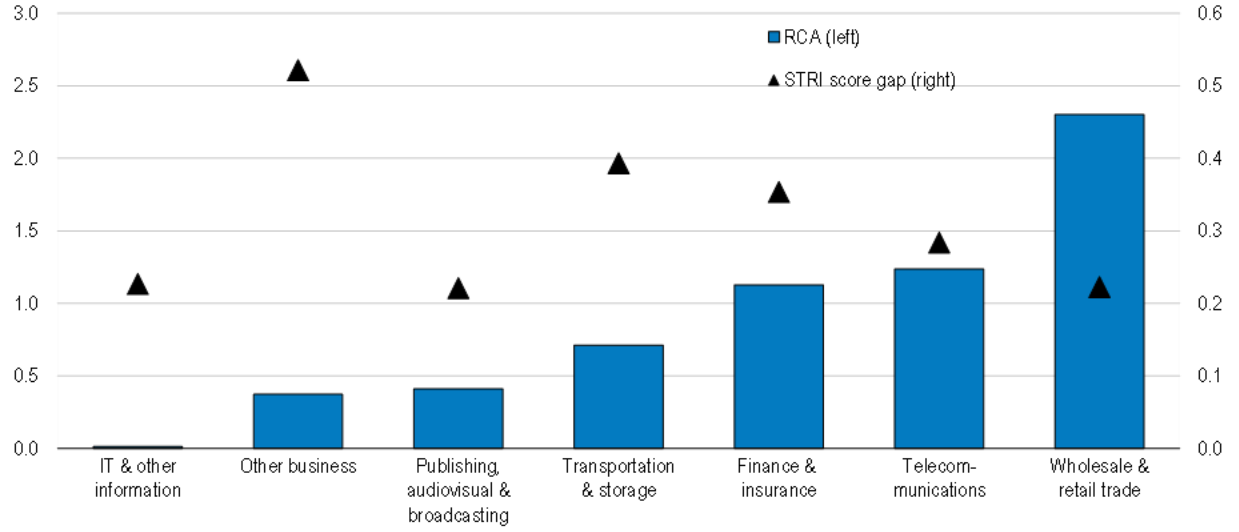
Figure 3.11. Restricted markets are likely to have a weak competitive edge



Note: RCA is the revealed comparative advantage in terms of value added (for more detailed information, see Annex 3.B). An industry with an RCA > 1 has a comparative advantage. STRI score gap is the difference between the minimum score and the score of the sector (calculated by simple average of the corresponding sub-sectors).
Source: OECD, Trade in Vaue Added (TiVA) Database and Services Trade Restrictitiveness Index (STRI) Regulatory Database.

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Box 3.3. The OECD Services Trade Restrictiveness Index

The OECD Services Trade Restrictiveness Index (STRI) is a regulatory database containing policy information on 22 major services sectors for the 36 OECD member countries, key partners (Brazil, China, India, Indonesia and South Africa) and Colombia, Costa Rica, Russia. In 2019, Thailand was added to the STRI covering laws and regulations in force since 2014.

STRI is composed of two distinct but complementary instruments: a services trade regulatory database, which collects information on applied services trade policy, and a services trade restrictiveness index measuring the trade restrictiveness of such policies. These instruments provide a rich source of information for trade policy analysts, trade negotiators and researchers, and a tool for the impact assessment of trade liberalisation as well as unilateral services sector reform. It can also help governments identify best practice and focus their domestic reform efforts on priority sectors and measures. It helps trade negotiators to identify restrictions that impede trade and is a source of regulatory transparency for business seeking to enter foreign markets.

The database records not only limitations on market access and national treatment of foreign services suppliers, but also behind the border regulations that *de facto* impede the establishment and operation of foreign services suppliers. However, STRI does not take into account preferential trade agreements.

Launched in 2014, STRI is updated annually, offering a comprehensive and transparent overview of global trends in services trade regulations, while facilitating deeper analysis of the effects that such regulations have on trade in services and the wider economy. The yearly update incorporates changes that have been introduced through new or amended laws and regulations.

Note: This note is prepared by Trade and Agriculture Directorate, OECD.

More mobility of foreign workers would spur business activity

Facilitating the cross-border movement of skilled workers is an important element in services trade. Foreign investment entails expert visits, and professional services are often provided with close proximity. As these services tend to be more skill-intensive, this is particularly relevant to Thailand, given the shortages of skilled labour (see Chapter 2).

Thailand has a range of restrictions on the movement of foreign workers. A company is entitled to hire up to ten foreign workers at a ratio of THB 3 million in capital per foreign worker. The rule of 4:1 ratio of local and foreign employees on a full-time basis is applied, although exemptions exist, subject to approval by the Board of Investment (BOI) and joint ventures with major Thai shareholders. Thailand also applies labour market tests and the duration of stay is limited to 12 months: the ability to compete and the opportunity to work for Thai nationals need to be considered prior to issuance of work permit for foreigners. Besides, foreigners have to notify their current addresses every 90 days. Given the importance of the issue, the BOI can expedite immigration process of skilled foreign workers. With the Smart Visa procedure, foreign skilled workers earning more than THB 200 000 per month are exempted from some restrictions, including a four-year stay instead of a general one-year stay. As the Smart Visa only covers the targeted industries, this could be expanded further to other fields.

In March 2019, the Thai Immigration Bureau announced the enforcement of the “Notification of Residence of Foreigners” (TM30) rule under the longstanding Immigration Act, B.E. 2522 (1979) due to security reasons. This requires property owners to report all foreigners who stay overnight on their premises within

24 hours. Foreigners who fail to provide an official receipt for TM30 compliance will not be eligible to apply for visa extensions. The government has been reviewing the rule under the on-going regulatory reform, and the restrictions have been partially relaxed. From June 2020, if the foreigner returns to the same premises after a temporary leave, the property owners no longer need to file the report once again with an immigration office. Nevertheless, as the extra reporting of TM30 constitutes an additional burden for foreign firms to extend their businesses in Thailand, this could be further streamlined.

Moreover, ASEAN has developed Mutual Recognition Arrangements (MRAs) for skilled labour mobility within the region since 2005, which now cover seven different professional occupations. So far, the number of registered professionals is limited; in case of engineers, only 3 735 were registered as of 2019, of which 220 from Thailand, probably due to differences in languages and strong family ties in Asian countries. Nevertheless, Thailand could attract engineers from other ASEAN countries because of a wage premium for engineers (Asian Development Bank, 2019[7]). Adding more professions, particularly other high skilled vocational occupations, to these agreements would be useful (Asian Development Bank, 2019[7]).

Box 3.4. Policies of opening services markets to international trade

Framework of services trade liberalisation under the GATS

As trade in services occurs through the broader channels of transactions (see Box 3.2), policy measures affecting trade in services are also broader than those for goods. WTO members agreed on the General Agreement on Trade in Services (GATS) to advance services trade liberalisation progressively. It covers 12 different business and consumer services.

Table 3.1. Services sectors in the GATS

Services Sectoral Classification List	
Business services (including professional services and computer services)	Financial services (including insurance and banking)
Communication services	Health-related and social services
Construction and related engineering services	Tourism and travel-related services
Distribution services	Recreational, cultural and sporting services
Educational services	Transport services
Environmental services	Other services not included elsewhere

Source: World Trade Organisation.

Two aspects of policy measures are relevant to services trade liberalisation, namely:

- **Market Access**: This is whether or not a country imposes restrictions on service activities (i.e. limitations on the number of suppliers, volume of transaction, assets, output or employees), the type of legal entity or joint venture and participation of foreign capital;
- **National Treatment**: This is whether or not a country gives non-discriminatory treatments to foreign services and foreign suppliers compared to domestic ones, such as tax exemptions and residency requirements.

Under the GATS, WTO members have announced the extent of market openness with regard to the three dimensions, which is called the country's "schedule of commitments":

1. 12 sectors (which embrace some 160 sub-sectors);
2. Market Access and National Treatment;
3. Four modes of supply (see Box 3.2).

The OECD Services Trade Restrictiveness Index (STRI) evaluates the degrees of market liberalisation focusing on Mode 1, 3 and 4 together with general regulatory frameworks and barriers to competition, such as favourable treatments of state-owned enterprises.

Preferential Trade Agreements as a driving force of services trade liberalisation

Preferential Trade Agreements (PTAs), which cover services, often use the same framework as the GATS. The thrust of PTA participation is whether or not participants liberalise services markets beyond the commitments made under the GATS ("WTO plus"). In case a country imposes similar restrictions on domestic service suppliers, such as the restriction on opening new merchandise stores, trade liberalisation entails domestic market reforms, which would bring benefits to domestic consumers.

Box 3.5. How to improve the competitiveness of the logistics sector – OECD Competition Assessments in the Logistics Sector in Thailand

The logistics market in Thailand has been growing rapidly following a significant investment in infrastructure over the last few years, so ensuring competition in the logistics services sector is important to reap the benefits of those investments.

The OECD has undertaken two competition projects in the logistics services sector in Thailand by year end 2019 – one on the assessment of rules and regulations and another of the analysis of competitive neutrality and the role and competition impacts of state-owned enterprises (SOEs) in the small package delivery services – crucial for the flow of e-commerce.

The competition assessment project focused on five subsectors of the logistics market (freight transportation (excluding air), freight forwarding, warehousing, small package delivery services and value-added services). Working in close co-operation with the Office of Trade Competition Commission (OTCC) and other public stakeholders in Thailand, the OECD scrutinised more than 100 pieces of sector-relevant legislation in Thailand and issued more than 60 recommendations. Some recommendations are:

- Publish a consolidated, updated version of every law relevant to logistics, including subsequent amendments;
- Introduce digitalisation for all application procedures for logistics-related authorisations and allow online applications;
- Remove the provision requiring a multimodal transport operator (MTO) to hold an authorisation for each branch it operates;
- Regularly assess market demand and consider re-negotiating with co-signatories the maximum number of licences for cross-border freight transport by road;
- Adopt an implementing act (e.g. ministerial regulations or OTCC guidelines) to clarify (a) that SOEs are clearly covered by the Trade Competition Act, and (b) the scope of the "public interest" exemption under Section 4(2) of the 2017 Trade Competition Act.

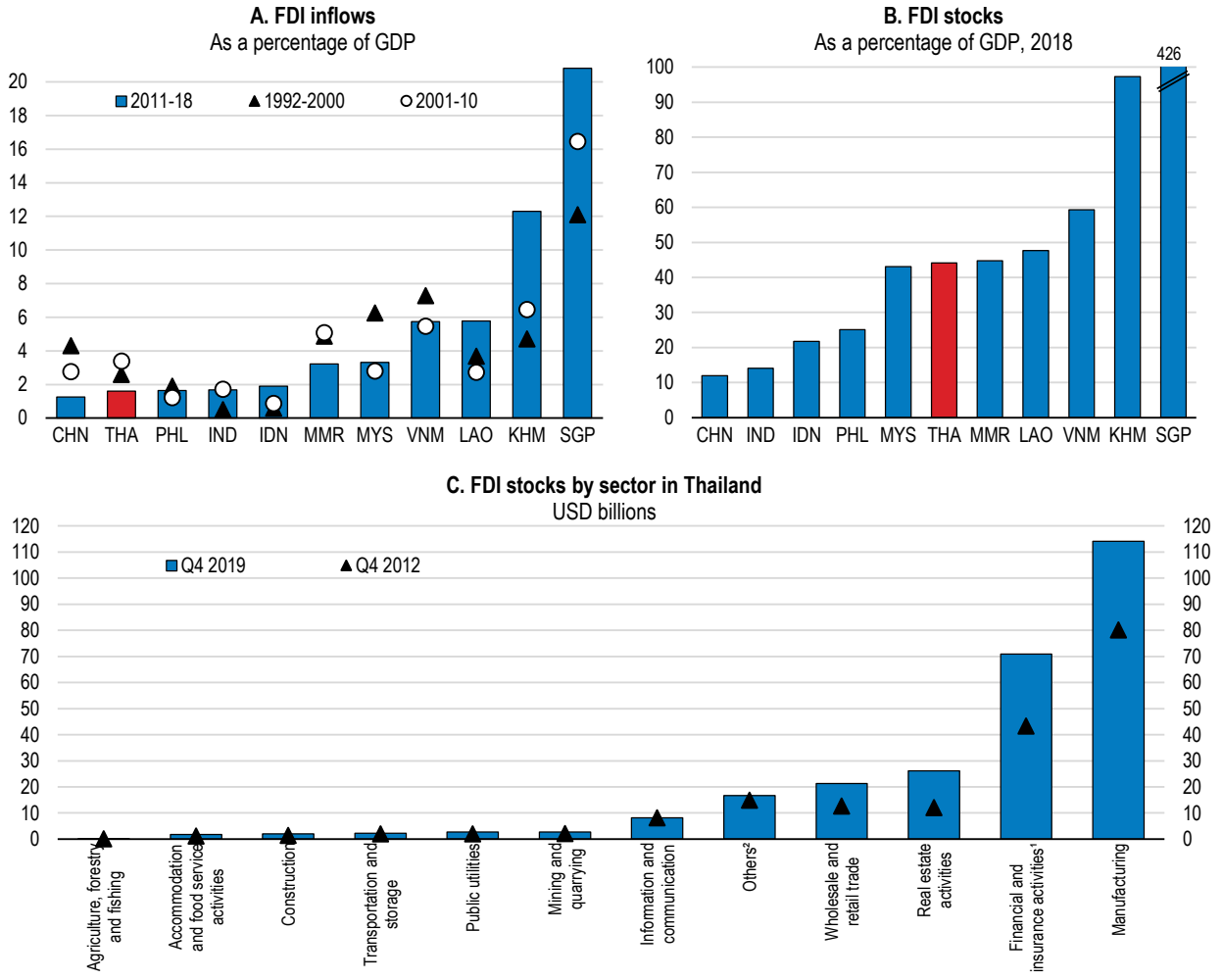
If fully implemented, these recommendations can be expected to generate significant benefits to the Thai economy, and more broadly to ASEAN. The full implementation of the recommendations set out in this report is expected to deliver positive long-term effects on employment, productivity, growth and positively affect the ability of businesses to compete.

Note: This note is prepared by Directorate for Financial and Enterprise Affairs, OECD.
Source: (OECD, 2020[6]), (OECD, 2020[8]).

Relaxing FDI rules would improve the quality of services

While the manufacturing sector has a dominant share in inward FDI, the services sector also has a significant share, particularly the financial sector (mostly in the form of mergers and acquisitions), the real estate sector, and the wholesale and retail trade sectors (Figure 3.12). Nevertheless, with Cambodia, Laos, Myanmar and Viet Nam (the CLMV countries) having considerably increased their inward FDI flows over the past decade, Thailand needs to restore its attractiveness as an FDI destination, particularly in services sectors.

Figure 3.12. Thailand is competing for FDI with its regional peers



1. Includes investments in investment companies.
2. Includes transactions in debt securities, and trade credits between affiliated enterprises.
Source: UNCTAD; Bank of Thailand.

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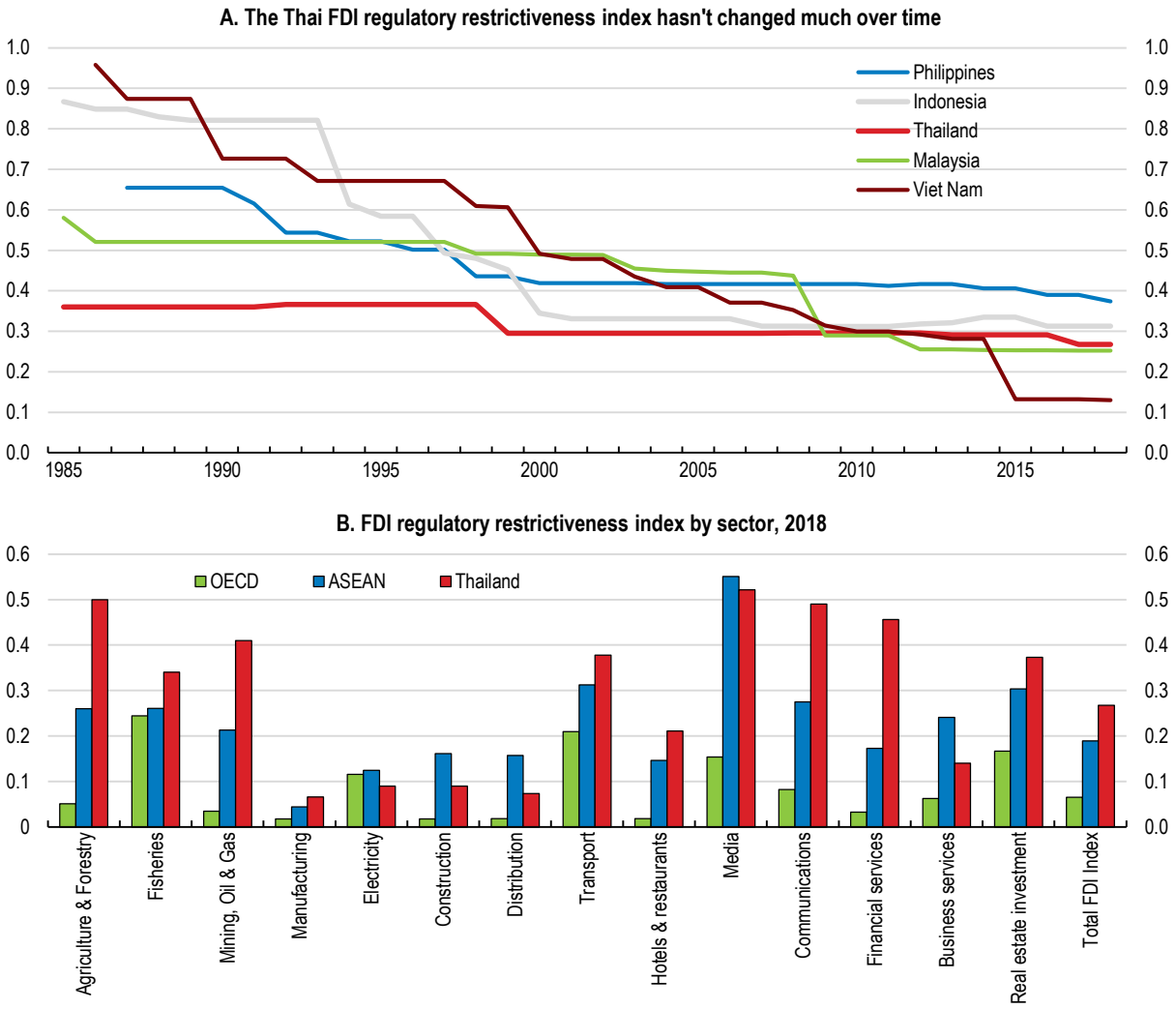
The OECD FDI Restrictiveness Index suggests that, despite past policy efforts, Thailand's FDI restrictions are no longer the lowest in the region as they used to be, because regional peers have opened their markets drastically (Figure 3.13). Moreover, Thailand tends to be stricter in services sectors. Thailand imposes minimum capital requirements on foreign investment (THB 2 million in general), which is quite high compare with other emerging economies. The Foreign Business Act B.E.2542 (1999) is the main law governing FDI and defining foreign ownership, which is a 50% or more foreign shareholding. The law restricts foreign access to certain businesses for security reasons (List 2: such as domestic transport including railways) and the promotion of domestic firms (List 3: 21 sectors, mostly services). The BOI has the power to grant permission of full foreign ownership of firms in these sectors, as long as other laws do not state restrictions. Nevertheless, these rules generate uncertainty and risk rent-seeking behaviour by incumbents. Reviewing these rules, in view of lower thresholds and a negative list, actually narrowing down the list of sectors and activities in which foreign investors are treated in a discriminatory manner, would likely spur foreign investment in services sectors (OECD, 2020[9]).

Figure 3.13. Thailand's FDI restrictions are becoming relatively more stringent

OECD FDI Regulatory Restrictiveness Index, scaled from 0 (open) to 1 (closed)



Note: The OECD FDI Regulatory Restrictiveness Index covers only statutory measures discriminating against foreign investors (e.g. foreign equity limits, screening & approval procedures, restriction on key foreign personnel, and other operational measures). Other important aspects of an investment climate (e.g. the implementation of regulations and state monopolies, preferential treatment for export-oriented investors and special economic zones regimes among other) are not considered. The data reflects regulatory restrictions as of end-December 2018. See Kalinova et al. (2010) for further information on the methodology.

Source: OECD FDI Regulatory Restrictiveness Index Database, http://www.oecd.org/investment/fdiindex.htm; see also the ASEAN FDI Regulatory Restrictions Database for information on the underlying measures captured in the Index, https://qdd.oecd.org/subject.aspx?Subject=ASEAN_INDEX.

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Developing more service-oriented trade agreements would boost growth

Because trade in goods and services are more intertwined than ever, trade barriers to both must be addressed in a coherent manner. Particularly, due to the increasing importance of embodied services, manufacturing exports will benefited from services trade liberalisation. Moreover, as trade liberalisation in

goods has progressed more than that of services within ASEAN and beyond, advancing the latter becomes more crucial and its gains would be larger. Thailand could therefore reap benefits from the engagement with more service-oriented Preferential Trade Agreements (PTAs). Particularly, if PTAs contained ambitious liberalisation objectives for services markets, which go beyond the current commitments, this would enhance competition and facilitate reforms in domestic markets. PTAs, such as, the Regional Comprehensive Economic Partnership (RCEP) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTTP) that contain progressive regulatory reforms "behind the borders" would boost Thailand's economic growth. For example, under the framework of the Association of South-East Asian Nations (ASEAN), the members are pursuing trade integration, which embraces services trade liberalisation including the facilitation of skilled labour mobility (The ASEAN Secretariat, 2015[10]). In its services element, the ASEAN Framework Agreement on Services, Thailand relaxed the restrictions on the number of foreign workers in the banking sector beyond the GATS commitments with regard to workers from the ASEAN countries (ASEAN, 2019[11]).

OECD simulations suggest that Thailand could reap larger gains from PTAs with services trade liberalisation compared with trade liberalisation on goods. The OECD METRO model has been used to estimate the impact of a stylised PTA on Thailand (Box 3.6). A simulation of f our scenarios – tariff reduction on goods, reduction of trade costs related to non-tariff measures on goods, services liberalisation, and simultaneous implementation of the three types of measures – shows that the GDP increase is the largest for services trade liberalisation. This stems both from the relatively large direct share of services sectors in the economy and from the fact that manufactured products have a high content of embodied services. The estimation also suggests that the gains from trade liberalisation including both goods and services would be the largest. As the model does not consider the effects of services trade liberalisation on FDI, productivity growth and the movement of skilled workers, including the long-run dynamic effects, it is likely to be a lower-bound estimate and the actual benefits could be larger.

Box 3.6. Impacts of an Asia-Pacific-wide trade agreement

The OECD METRO model has been used to quantify the impacts on Thailand of a large preferential trade agreement in the Asia-Pacific region. The included countries are Australia, Brunei Darussalam, Cambodia, China, India, Indonesia, Japan, Korea, Malaysia, New Zealand, the Philippines, Singapore, Thailand and Viet Nam. The simulations are designed to allow decomposition of the effects of various trade policy instruments:

- **Case 1: Reduction of tariffs** – a preferential cut in tariffs on manufacturing goods to 0% and on food, agricultural goods and natural resources by 50%;
- **Case 2: Reduction of trade cost of non-tariff measures (NTMs) on goods** – a preferential cut in the *ad valorem* trade cost equivalents (AVEs) of NTMs on imported goods by 50% of those differences between a country's AVE of NTM cost and the average cost among all the PTA countries in that sector;
- **Case 3: Reduction of NTMs on services** – a preferential cut in the AVEs of services trade restrictions in the communication, financial, insurance and business and transport sectors by 50% and 25% for high and low restrictive countries respectively;
- **Case 4: Simultaneous trade liberalisation** – all the three reductions are applied.

Key results are as follows (as dynamic effects are not considered, the results would be a lower bound):

- Among the four scenarios, GDP increases the most in the simultaneous trade liberalisation scenario, as Thailand would benefit from enhanced access on key markets, next to reduced costs of imports from lowering its trade barriers (Table 3.2). The services trade liberalisation shows the largest contribution. GDP is slightly contained for Case 1, as government expenditure declines because of smaller revenue due to the tariff reduction.
- Production in financial, insurance and business services, which include professional services, decline except under Case 1, as firms substitute away from domestic providers, which have less competitiveness (Figure 3.14). This suggests the importance of nurturing high-end services. Downstream industries that rely on these services as input benefit from the fall in prices.
- Exports and imports increase most of the sectors in the simultaneous liberalisation scenario (Figure 3.15). Both the tariff and NTM reduction on goods increase imports of services input used by the manufacturing sectors, while exports of those services decline. This suggests the importance of simultaneous trade liberalisation embracing services.

Table 3.2. Macroeconomic impacts

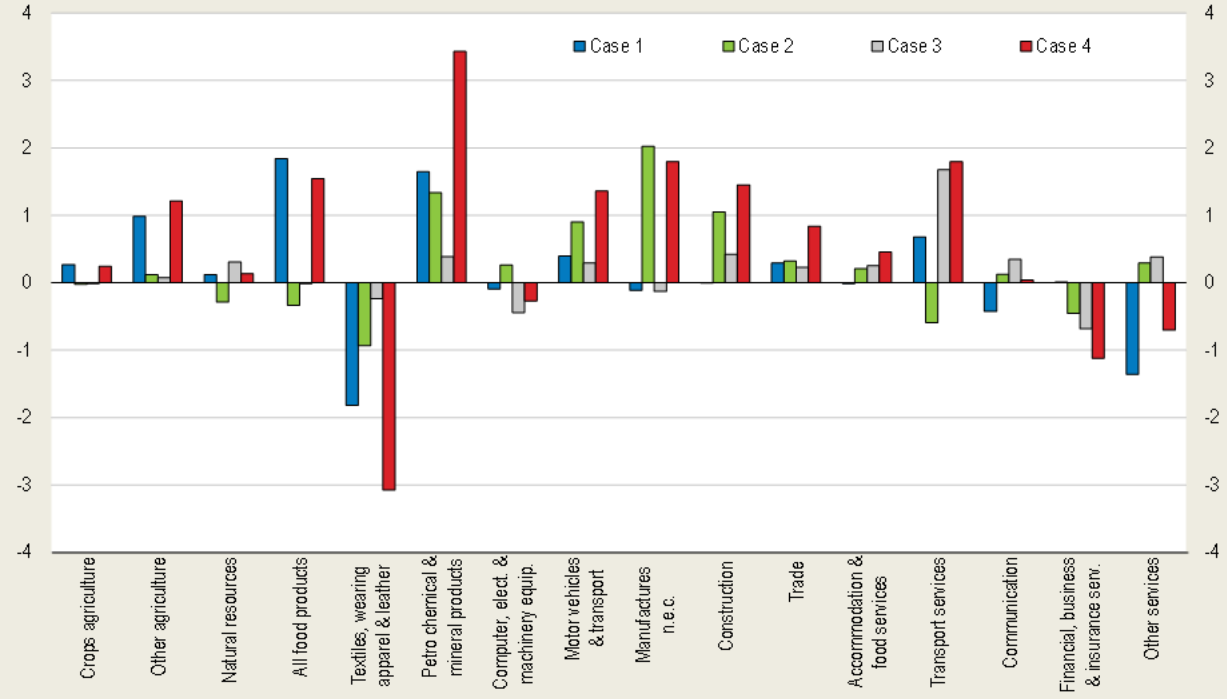
Percentage change from baseline

	Reduction in tariff rates	Reduction in NTMs on goods	Reduction in NTMs on services	Simultaneous liberalisation
GDP	-0.01	0.16	0.44	0.58
Private consumption	0.73	0.72	0.67	2.14
Investment	0.04	1.09	0.44	1.55
Exports	1.24	0.92	0.35	2.51
Imports	1.05	1.89	0.51	3.45
Domestic production	0.24	0.42	0.17	0.82

Source: OECD estimates based on the METRO Model.

Figure 3.14. Impacts on domestic production by sector

Percentage change from baseline



Source: OECD simulations based on the METRO model.

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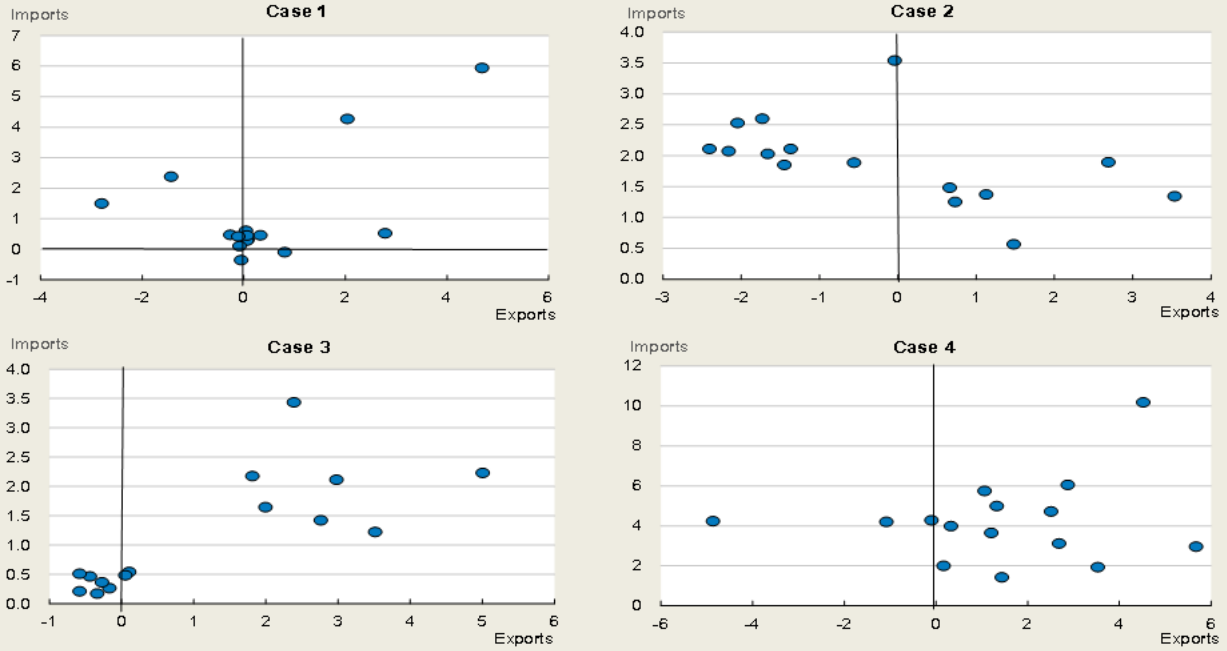
Figure 3.15. Impacts on exports and imports by sector

Percentage change from baseline case



Source: OECD simulations based on the METRO model.

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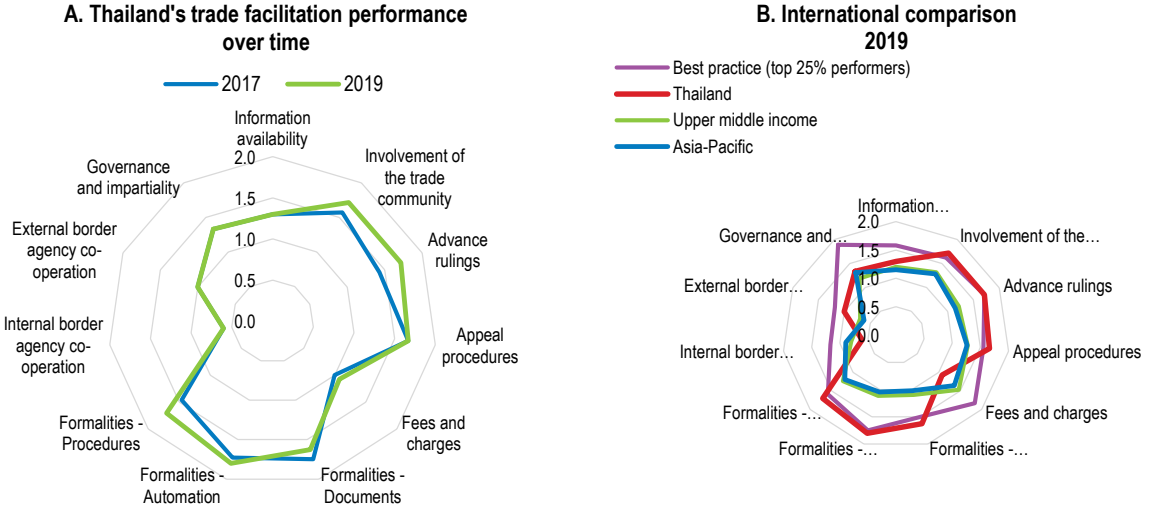
Trade facilitation is more effective together with services trade liberalisation

Since the logistics service has become an essential element in international trade, trade facilitation, such as border management, is now an important policy tool to achieve smoother trade in general (OECD, 2018[12]). As trade facilitation implementation reduces transaction costs for SMEs, it is also helpful for SMEs to connect to international markets. Thailand's scores in the OECD Trade Facilitation Indicators are better than the average of Asia-Pacific, although a gap remains with best practice countries (Figure 3.16). Since the mid-2010s, the government has taken a couple of measures to reduce the number of documents and improve transparency. Nevertheless, the two weakest performing areas, the transparency and proportionality of fees and inter-agency co-operation have barely improved. As was recommended by the UNCTAD (UNCTAD, 2014[13]), Thailand established a high-level committee to facilitate inter-agency co-operation. Further improvement in functioning, financing and sustainability of the committee would help address remaining shortcomings in both the policy areas (International Trade Centre, 2015[14]).

Figure 3.16. Thailand's trade facilitation performance has improved

Score from 0 (worst performance) to 2 (best performance)



Note: The 2019 series applies the same methodology as 2017, which introduces new measures across all dimensions and particularly in the area of external and internal border agency co-operation, procedures, automation, documents, information availability and involvement of the trade community.
Source: OECD, Trade Facilitation Indicators, http://www.oecd.org/trade/indicators.htm.

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Thailand's high-end business services can become more export-oriented

High value-added services for businesses now play essential roles in the economy: notably, IT and information services, and professional services, the latter of which includes design, consultancy, advertisement, marketing, scientific research and engineering, among others. Nurturing these services to expand into overseas markets would therefore be an important policy agenda for Thailand.

Domestic suppliers need to leverage FDI to be more competitive

Developing high-end business services is crucial to restore competitiveness of the Thai manufacturing sector, which has weakened recently (see Annex 3.B). Estimates using the OECD TiVA Database reveal that these services contents are already embodied in intermediate goods when they are shipped to Thailand (Figure 3.17). This indicates that the Thai domestic service suppliers cannot deeply integrate in GVCs, because their services are not sufficiently sophisticated to match the needs of export-oriented manufacturers.

Seizing the opportunity borne by FDI is one of the most effective ways to enhance the GVC participation of domestic suppliers in high-end business services. Particularly, domestic suppliers can advance their knowledge and technologies through direct contracts with foreign affiliates. Some emerging countries have succeeded in strengthening this linkage (Figure 3.18). However, not all suppliers meet standards required by foreign affiliates, and both sides do not know the potential needs and services provision each other. While encouraging foreign affiliates to purchase more from domestic suppliers proves less effective, levelling up domestic suppliers' capacity and addressing information asymmetry between the both sides are useful. Although not confined to the services sector, RROCOMER, Costa Rica's trade promotion agency, helps domestic suppliers develop their skills and capacity including market research, while making co-operation among public institutions more efficient. Likewise, Chile has conducted a Suppliers Development Program since the late 1990s, which provides financial incentives for foreign affiliates to train domestic suppliers.

Innovation in business services could boost their direct exports

Thailand could expand direct exports of high-end business services, including IT and information services, and professional services. Although the share in overall exports is still small, these direct exports have been expanding rapidly, contrary to the embodied exports of the same services (Figure 3.19). As Thai enterprises, such as in manufacturing and financial services, are extending their businesses more actively in neighbouring countries, demand for high-end business services provided by Thai suppliers including marketing and maintenance would increase further. Strengthening these Thai services suppliers would also be conducive to their participation in GVCs.

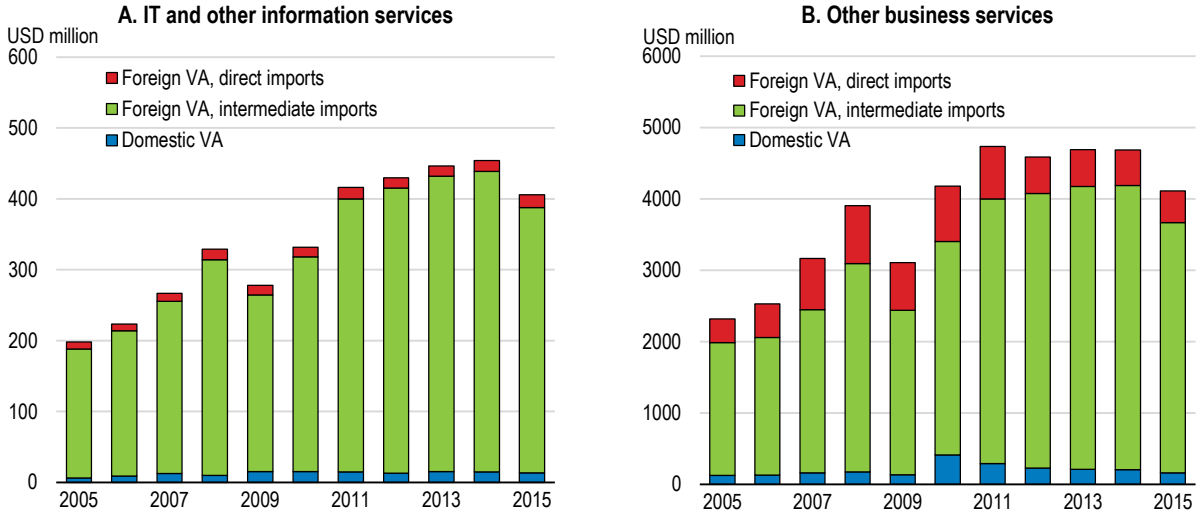
Countries are grappling with policy development that can stimulate service innovation. As these services could also be provided by non-service sectors, the government would need to prepare an economy-wide enabling environment for innovation rather than focusing on specific services sectors. Regulatory reforms would help promote new services (OECD, 2018[15]). In Thailand, regulatory sandboxes have been introduced to facilitate innovation and technology advancement in the services sector, including the one for financial services starting in 2016, which has resulted in the flourishing Fintech sector (see Chapter 1). Moreover, stimulating business investment in R&D is still essential. Nevertheless, compared with traditional manufacturing, where in-house R&D-driven innovation in products is relevant, other types of innovation are deemed more important for these service activities: namely, innovation in process, market and organisation. As the sectors are more data-driven and knowledge-intensive, encouraging investment in ICT and intangible assets would also be essential (Uppenberg and Strauss, 2010[16]). Public investment in digital infrastructure would expedite this development (see Chapter 1). Besides, promoting corporate branding like in Korea, which helps private companies sophisticate their brands including those for exports, would encourage these innovative processes, particularly among SMEs.

Accelerating the digital economy more broadly is also crucial. This is particularly the case for knowledge-intensive services, such as marketing, research and design. Protection of Intellectual Property Rights (IPR), including non-technical innovation, must be a key policy priority (see Chapter 1). Besides, as recent developments in IT services are more consumer-oriented, protection of personal data is also essential. Thailand is making progress in this area. Under the new Personal Data Protection Act 2019, although its implementation is delayed due to the COVID-19 outbreak, it is not allowed to forward or transfer personal

data to a third party unless the data subject has given their written consent. Moreover, the transfer of personal data to foreign countries is possible only if the receiving party has similar personal information protection standards.

Figure 3.17. Most of imported high-end services are embodied in intermediate goods

Origin of value added in selected services, embodied in Thai gross manufacturing exports



Note: Other business services include professional, scientific and technical services, and administrative and support services.
Source: OECD, Trade in Value Added (TiVA) Database.

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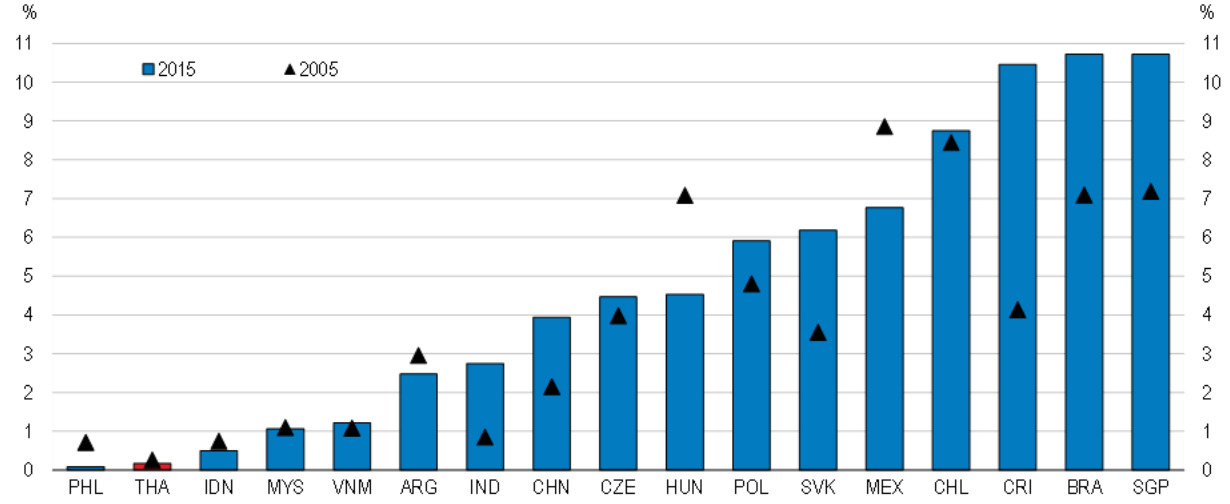
Figure 3.18. Thailand's high-end business services participate less in manufacturing GVCs

Share of domestic high-end business services embodied in manufacturing exports



Note: High-end business services are defined as the sum of IT and other information services, and other business services. Exports are measured in domestic value-added terms.
Source: OECD, Trade in Value Added (TiVA) Database.

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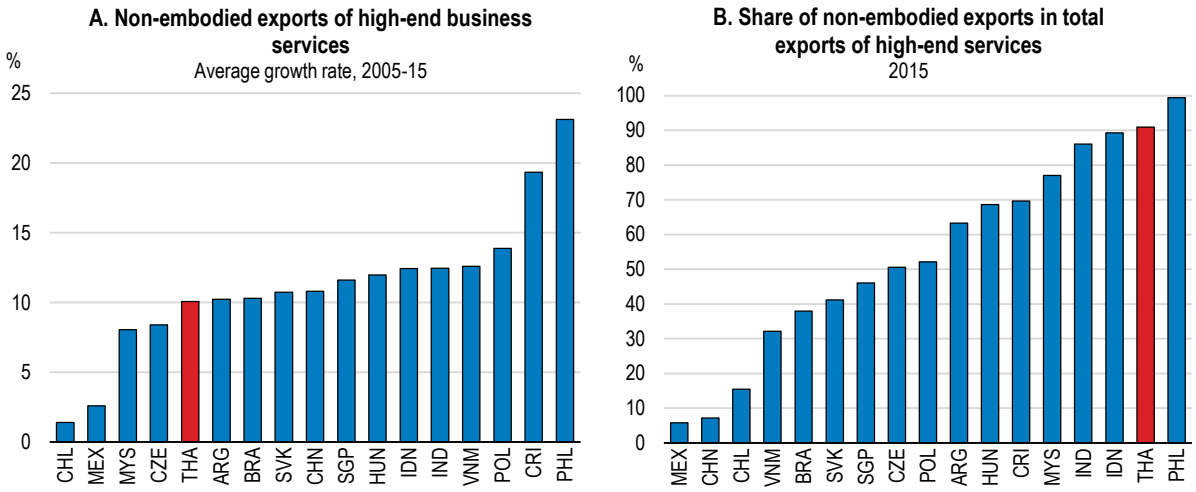
Figure 3.19. Some emerging countries have increased direct exports of high-end services



Note: High-end business services are defined as the sum of IT and other information services, and other business services. Exports are measured in domestic value-added terms.
Source: OECD, Trade in Value Added (TiVA) Database.

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Improved consumer services also benefit the Thai people

Consumption by foreign customers in a country, such as inbound tourism and education, is essential part of trade in services (Box 3.2). Particularly, the increasing number of outbound tourists, at more than 4% growth per year for the last two decades, provided tremendous economic opportunities to competitive countries in tourism, including Thailand, though severely affected by the global COVID-19 pandemic. Since domestic residents are major consumers of these services, improving the quality of the services will have economy-wide impacts and be beneficial to the Thai people as well.

The tourism sector needs to overcome sustainability challenges

The tourism industry is a major export sector for Thailand. Thanks to its rich nature, unique culture and high hospitality, Thailand is one of the most popular tourist destinations in the world (Figure 3.20). English is mostly usable in major tourist spots, and medical tourism is one of Thailand's competitive edges. Tourism exports, i.e. consumption by non-resident, account for 11% of GDP in 2018, much higher than those of regional peers.

Nevertheless, the Thai tourism industry needs to transform itself into a more productive and high quality services sector to sustain its competitiveness. Even before the global COVID-19 pandemic, the industry was aiming for a higher value-added sector, which provides tourists with unique and vernacular experiences, rather than merely a sector of mass services provision with budget prices and low productivity, such as lodging and meal services. Thailand's second comprehensive National Tourism Development Plan 2017-2021 has sought to support the sustainable growth of tourism by strengthening its brand and safety. As uncertainty is high about the future course of the pandemic and its long-term impacts on people's behaviour, transforming the tourism industry is now more urgent. A number of countries are grappling with the sector's medium- and long-term resilient recovery beyond short-term mitigation and rehabilitation, stressing the importance of sustainable tourism and digitalisation (OECD, 2020[17]), which Thailand is also pursuing (The Tourism Authority of Thailand, 2020[18]).

As small- and medium-sized enterprises are predominant in the tourism industry, encouraging digitalisation of the sector as a whole could improve its productive capacity through connecting a wider range of consumers and suppliers. Particularly, since the broadband penetration rate is still low in Thailand (15% of population in 2020, Office of National Broadcasting and Telecommunications Commission), potential benefits of digitalisation would be large in rural areas. Facilitating digitalisation would also be conducive to broader sustainability development by improving the industry's overall efficiency and helping manage environmental burdens stemming from tourist activities, such as by through time-ticketed entry (OECD, 2020[19]). For example, a number of districts in the EU countries use digital tools to analyse demand, deliver services to targeted groups, and manage tourist flows (European Commission, 2020[20]). In addition to the infrastructure development, nurturing digital skills among rural areas and SMEs could also be prioritised.

Although endowed with rich natural environment and cultural heritages, Thailand needs to preserve these tourism resources to maintain and even further boost its attractiveness as a tourist destination, while reducing environmental burdens (Figure 3.21). Since 2018, Thailand has restricted visitors' entry to Maya Bay to restore its coral ecosystem damaged by excessive tourism activities. A number of countries have introduced economic tools or direct measures to conserve tourist sites. The post-COVID-19 recovery would be an important opportunity to take away from mass tourism to this direction, by utilising user fees to manage congestion and environmental pressure, such as dynamic pricing, or limiting the number of visitors in the long run.

The need to enhancing the industry's sustainability capacity also calls for a more comprehensive community-based strategy that involves a wider range of stakeholders and coordinates with other socio-economic policy measures, as tourism development would entail conflicts of interest within and outside of local communities. For example, air pollution caused by open burning of sugar cane farming is considered as a concern for Si Thep, an ancient town in the central highland, which Thailand nominates on its tentative list to the UNESCO World Heritages. Moreover, protecting heritage sites from natural disasters also requires local communities' involvement as protection measures should be part of the community's overall disaster-risk-reduction strategy. Thailand has a long history of community-based tourism. It aims at facilitating co-operative tourism development in villages, and aims for broader distribution of tourism revenue. Nevertheless, not all households have access to business opportunities, as some activities, such as rafting and homestay, require a large sum of initial investment. Partial co-operation in rural communities and poor financial conditions result in deterioration of tourism resources, which are public goods, in these communities. In some OECD countries, recently, more emphasis is given to management and promotion of local destinations, particularly through the creation of Destination Management Organisations (DMOs) which are formally constituted to deliver local tourism benefits with the involvement of the private sector. Strengthening the function of the community-based tourism, with strong support for local governments would help maintain and restore local tourism resources, while achieving a more equitable distribution of the economic gains. In this regard, the broader environment of local areas should be treated as "common" tourism resources, which is an essential element of high quality destinations. Given that local governments are responsible for water and waste management, these matters would be well integrated with a locally driven tourism development strategy.

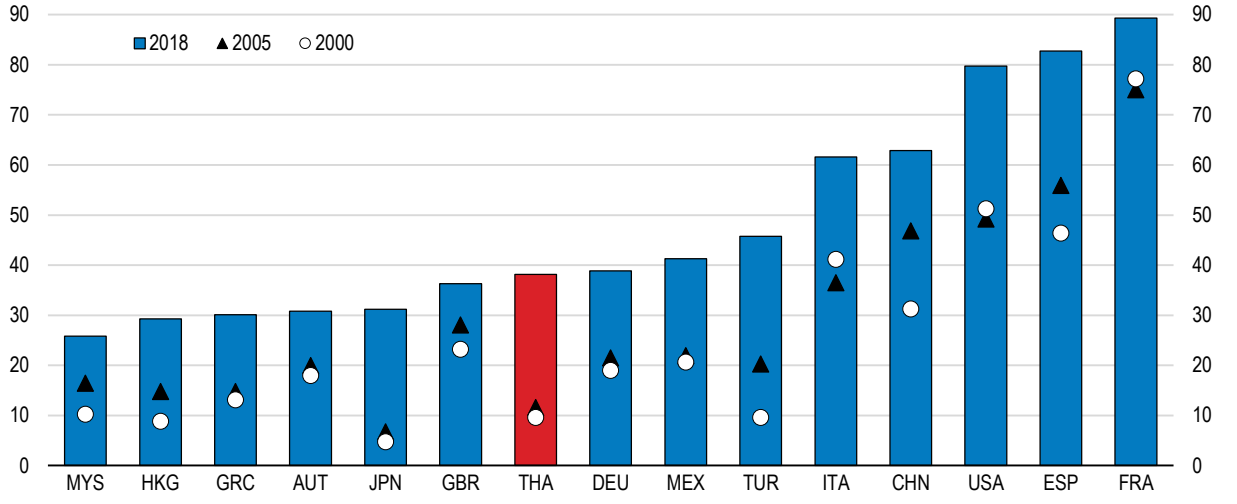
Tourism activities in Thailand show strong seasonality, and the length of stay is shorter than in other competing countries: 9.55 days in 2015, while 26 days in Australia and 18 days in the United States. Since tourists tend to spend more and stay longer for cultural and artistic purposes irrespective of season, a number of countries stress the importance of these types of tourism to seek for new market opportunities. For example, New Zealand highlights arts and culture as core priorities for sustainable tourism growth (Creative New Zealand, 2019[21]). Further strengthening culture- and art-based tourism would also help the industry to diversify its demand and to become a higher value-added sector, creating more skilled jobs. Digitalisation would help equip the tourism industry with more innovative capacity. For example, West of England in the United Kingdom has experimented 5G technology to provide more interactive information on cultural sites to tourists, using some advanced technologies, including Augmented Reality (AR) and

Virtual Reality (VR). Besides, medical tourism, where Thailand has a competitive edge, could be strengthened further on condition that a high level of universal services to the Thai people is maintained. While a well-managed outbreak containment would furnish its healthcare system with a high reputation, the accelerating digitalisation could also provide new market opportunities abroad.

In Thailand, the bulk of tourists concentrate in a few areas, notably Bangkok and the South. Since ground and port infrastructure is deemed as one of the weaknesses in the Thai tourism sector (Figure 3.21), improving transportation infrastructure and services would contribute to better connections of potential tourist spots and stimulate the local economy, while reducing environmental burdens caused by over-tourism. Moreover, the gateway of international tourist arrival is concentrated in Bangkok. This bottleneck could be addressed by a railway network connecting U-Tapao International airport in the Eastern Economic Corridor and Bangkok.

Figure 3.20. Thailand is one of the most popular tourist destinations

International arrivals, millions



Source: World Bank, World Development Indicators Database.

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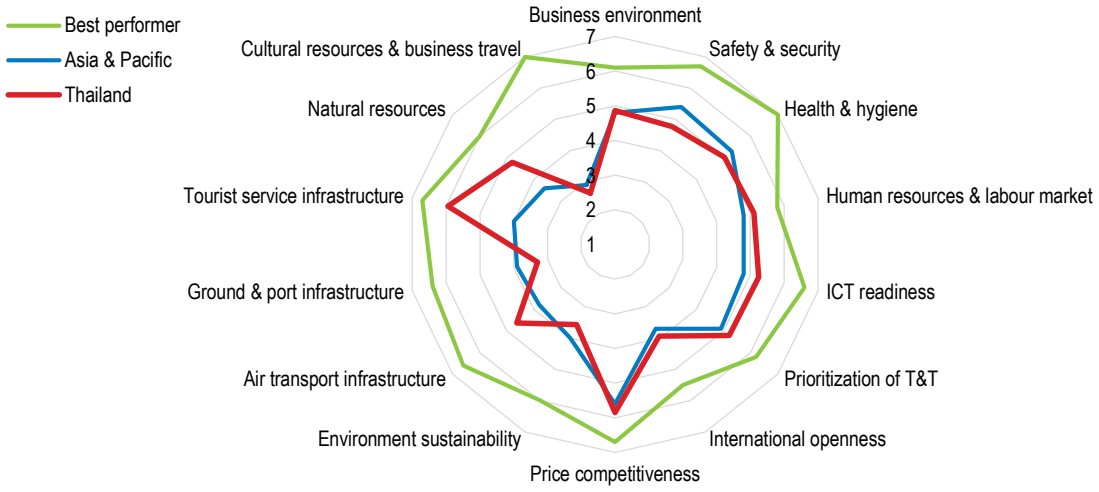
Figure 3.21. Thailand's tourism has an advantage in service infrastructure and natural resources

Index scale: 1 to 7 (best), 2019



Source: World Economic Forum (2019), The Travel & Tourism Competitiveness Report 2019 - Travel and Tourism at a Tipping Point.

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Global connection can hone higher education's competitive edge

Expanding international student enrolment in higher educational institutions would benefit the overall economy, by attracting global talents, improving research and education output and nurturing innovative environment through diversification. Moreover, longer-term business and trade links are also expected to occur as a result of hosting international students (Evennett, 2018[22]). In Asia and its surrounding regions, a number of countries seek to become a global hub of higher education. Considering the intensified competition in connecting global talents, making Thailand's higher education more attractive to foreign students would also benefit Thai students. As safety concerns caused by the COVID-19 pandemic would affect students' destination choices, it would be a good opportunity for newcomers, such as Thailand, to consider the internationalisation of the education system.

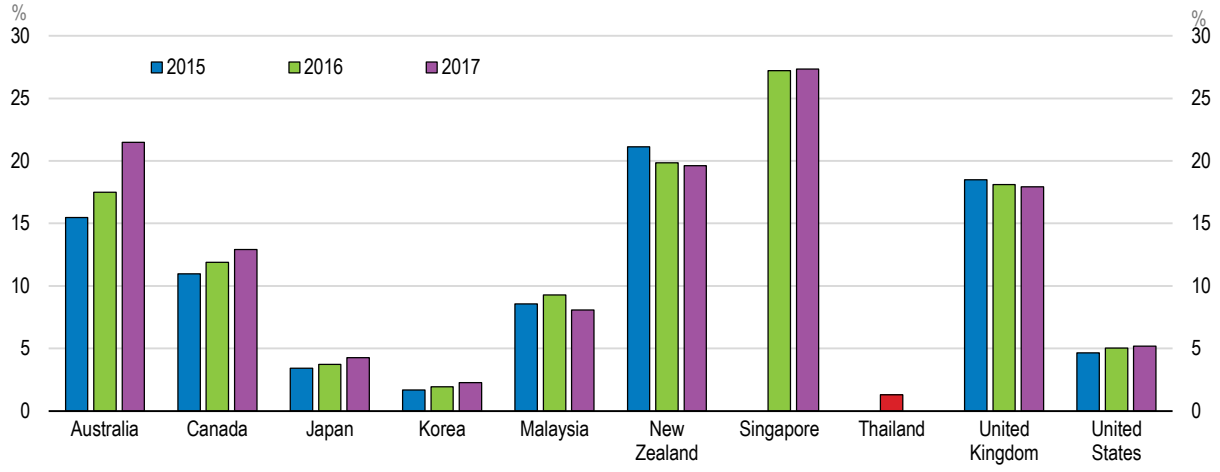
International rankings of Thai universities are not high and the number of foreign students in higher education is small compared with neighbouring peers (Figure 3.22), such as Malaysia and Singapore, although tuition fees are less expensive for public universities and programmes are taught in English since the early 2000s. To attract foreign students, a range of policy measures should be appropriately coordinated, including student visas, grants and scholarships, high-quality curriculums and an enabling research environment. Therefore, a number of countries, notably Australia, New Zealand and Malaysia, have developed a comprehensive strategy to strengthen synergies among different policies, while explaining the benefits of accepting foreign students to the public. Aiming for a regional education hub in ASEAN, Thailand supports international student mobility in the region. Nevertheless, a further emphasis could be given to the internationalisation of higher education beyond the ASEAN region. To this end, the government has already sought for collaboration with the EU.

In addition to establishing join or dual degree programmes with foreign universities, supporting foreign universities to open branch campuses within the country is one way to attract foreign students. A number of economies, who host international branch campuses, have succeeded in inviting foreign universities with a high global reputation. This would push up the overall quality of the host economy's education. Dubai has used international branch campuses as a tool to attract skilled foreign workers. Malaysia has

encouraged the establishment of international branch campuses in the country since the mid-1990s with the aim of becoming the knowledge-based economy and preventing the persistent brain drains. Other Asian countries, such as Viet Nam and Indonesia also moved to this direction recently. In Thailand, under the Foreign Business Act B.E. 2542 (1999), foreign owned or foreign majority entities can set up a branch campus subject to the approval of the Foreign Business Commission. Moreover, since 2017, the government has encouraged reputed overseas universities to set up international branch campuses of the targeted fields in the Eastern Economic Corridor (EEC) area. A wide range of incentives is provided, such as exemptions to foreign ownership of land and the relaxation of visa requirements for overseas staffs. Three foreign universities have already obtained approval. Although it would require full-fledged reforms amid the declining number of students, depending on the outcome evaluation of the current scheme, the government could consider the extension of the scheme beyond the EEC area. Foreign teachers working in the strategic fields outside the EEC area can also apply for the streamlined visa procedure. To facilitate internationalisation of higher education, this could be extended to other disciplines.

Figure 3.22. Foreign students become more important in higher education in many countries

Number of students from abroad studying in a given country, percent of total tertiary enrolment in that country



Note: For Thailand, data available for 2016 only.
Source: UNESCO, Education Database.

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A different skills strategy is needed for trade in services

Trade integration induces the shift in production activities among sectors in a country, which results in job displacement and wage adjustment. Therefore, governments need to take policy measures that enable workers to move between the sectors without frictions (OECD, 2018[23]). Moreover, as GVCs are highly developed in Thailand, employment in supporting business services that contribute to the production of manufacturing products is significant. This requires more policy focus on skills development required in these services sectors, in addition to the mitigation policies against labour adjustment.

To facilitate the transformation to a more service-driven economy, policy measures should support the re- and up-skilling of workers and the mobility of workers to skill-intensive service jobs. Empirical work suggests that, although the number of workers with higher education attainment has increased, Thailand faces substantial skills shortages and surpluses, with a significant degree of mismatch (see Chapter 2).

Trade liberalisation would boost demand of business services in Thailand, benefiting highly skilled workers including those who are over-qualified. However, to maximise the benefits of services trade integration, Thailand needs to step up policies to re- and up-skill workers and make the labour market more flexible. This could address the skills shortages and mismatches effectively. Particularly, given the significant regional disparities and a large share of agriculture employment in Thailand, facilitating labour force adjustment among different sectors and occupations is crucial.

OECD simulations suggest that participation in PTAs with services trade liberalisation would increase the demand for high skilled workers in the Thai services sectors. The OECD METRO model, which can distinguish five different skills, has been used to estimate the impact of PTAs on sectoral labour demand and on different skills levels (see Annex 3.E). A PTA containing services trade liberalisation increases the demand for mid-skilled jobs, such as clerks, in the business-related services sectors, except for the financial and professional service sectors, which reduce production due to increased imports. Moreover, PTAs that embrace trade liberalisation in goods, both by reducing tariffs and non-tariff barriers, would be likely to increase the demand for high skilled jobs, namely, office management and professionals, and technical and assistant professionals, in a broad range of services sectors (see Annex 3.E). This is because the manufacturing firms that would benefit from a liberalisation of trade in goods require more services input produced by high skilled workers. On the other hand, the demand for lower skilled workers is most likely to decline in services sectors in response to goods trade liberalisation. As the OECD METRO model does not take into account the impact of trade liberalisation on FDI, productivity growth and the movement of skilled workers, including the long-run dynamic effects, the estimates are likely be a lower bound of the actual impact.

Table 3.3. Recommendations to enhance Thailand's services trade integration

Findings (main findings in bold)	Recommendations (key recommendations in bold)
Removing barriers to services trade integration	
Services sector markets in Thailand are more strictly regulated than in other Asian countries.	**Remove barriers in restricted sectors, particularly regarding the international mobility of skilled workers by expanding the coverage of Smart Visa.**
Hiring foreign workers has various impediments.	Consider further streamlining the extra residence reporting of foreign workers (TM30).
Cross-border movement of professional workers is restricted.	Add more professionals to the mutual agreements in ASEAN.
Restrictions on FDI tend to be stricter in the services sectors.	**Remove obstacles to FDI by relaxing the rules of capital thresholds and narrowing listed sectors.**
Trade integration not only entails job displacement and wage adjustment, but also increases demand for high skilled workers.	Prepare a two-prong skills strategy: facilitating skills development required in the skill-intensive services sectors in addition to enhancing policies to mitigate job displacement.
Developing more free trade agreements and implementing trade facilitation	
Thailand has concluded preferential trade agreements (PTAs), some of which contain services elements.	**Pursue PTAs that contain ambitious regulatory reforms beyond the current commitments under the General Agreement on Trade in Services (GATS)**.
Concerning trade facilitation, the transparency and proportionality of fees and inter-agency co-operation have barely improved and lag behind compared with the Asia-Pacific region.	Use the National Logistics Committee and its sub-committee effectively to step up trade facilitation.
Nurturing high-end services	
Not all domestic service suppliers meet standards required by foreign affiliates, so that they are not integrated into GVCs.	Help level up domestic suppliers' capacity and facilitate matchmaking between domestic services suppliers and foreign affiliates.
There is no stylised policy frameworks and high-end services can be provided by non-service sectors.	Set up an economy-wide enabling environment for innovation covering broader sectors including non-service sectors.
Making tourism services more sustainable	
Mass tourism and narrow stakeholder involvement have caused degradation of tourism resources, while the overall productivity level of the tourism industry has been low.	**Encourage further digitalisation of the tourism industry, especially in rural areas and the reduction of its environmental footprint.** **Involve wider local communities to retain broader environmental resources, including the management of water and waste.**
The length of tourist stay is shorter than those of other countries.	Strengthen culture- and art-based tourism.
Tourists concentrate in a few areas.	Improve transportation infrastructure and services.
Internationalising higher education	
The number of foreign students in higher education is smaller than other countries, while the declining number of Thai students would lead to supply-demand imbalances in higher education institutions.	Consider developing a strategy to attract foreign students beyond the ASEAN region. Expand the disciplines covered by Smart Visa to facilitate international mobility of foreign teachers in higher education.

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Annex 3.A. Estimation of the services share

To estimate Thailand's services share in GDP, similar calculations to (Park and Shin, 2012[2]) and (Eichengreen and Gupta, 2009[3]) were conducted for this report.

A quartic relationship between per capita income and the value-added services share is assumed to capture the two waves of services growth. By using the panel data for 155 economies between 1995 and 2018 derived from the World Bank Development Indicators Database, OLS regressions are estimated.

Different from the previous research, the results show negative coefficients for cube items and positive coefficients for quartic items (Table Annex 3.A.1), which suggests that the estimations might capture the growing share of new services sectors, such as digital services, in high-income countries. As it is impossible for the services share to keep increasing, the current situation is considered as a transitional period. (Eichengreen and Gupta, 2009[3]) conducted regressions on disaggregated services sectors. Their estimation result also shows that the share of high-end services in GDP, notably computer, legal, technical and advertising, financial intermediation, other business services, and post and telecommunications, increases over the entire range of middle- and high-income levels, and particularly rapidly at high income levels, with no sign of growing more slowly at the high end.

Based on the estimation result of the quartic relationship, Thailand's services share would be 68.5% if the per capita income of the OECD average in 2018 is applied, which is slightly higher than the calculation based on the linear relationship, 67.8%.

Table Annex 3.A.1. A prolonged second wave of services growth

Regression of services share in GDP on per capita income

	Dependent variable is services share in nominal GDP	
	(1)	(2)
Constant	491.4380	-4.159998
	(3.893348)	(-1.602327)
Log per capita income	-239.1386	6.746076
	(-3.754191)	(21.89026)
Log per capita income, squared	45.16894	
	(3.809056)	
Log per capita income, cube	-3.646159	
	(-3.779235)	
Log per capita income, quartic	0.109212	
	(3.771794)	
Country Fixed Effects	Yes	Yes
Observations	3720	3720
Adjusted R-squared	0.882020	0.881298

Note: Per capita income is in terms of 2010 constant USD.
Source: OECD calculations.

Annex 3.B. Revealed comparative advantages

The Revealed Comparative Advantage (RCA) is an indicator to analyse an industry's comparative advantage of a given country in international trade under the assumption that the market is sufficiently competitive. If a country's industry has a comparative advantage, an RCA index is above one.

The traditional RCA in terms of gross exports is calculated as the share of a country's exports of a product in total exports divided by the share of world exports of the same product in total world exports. However, as the gross exports of a product include intermediate input imported from other countries, the RCA in terms of gross exports is not an accurate indicator to assess a country's competitive edge in the context of GVCs.

The OECD Trade in Value Added (TiVA) Database can capture the value added created by each country's industry in the fragmented production processes. By using this database, two alternative RCAs were calculated for this report to evaluate Thai industry's competitiveness in GVCs.

As more business services are used as intermediate input of manufacturing, to evaluate the comparative advantage of a given service sector, all exported services either directly or indirectly (i.e. embodied in manufacturing goods) should be taken into account, while deducting imported services (Miroudot and Cadestin, 2017[24]).

The RCA in the value-added terms is calculated as the share of value added originating from a given service sector in a country's exports divided by the share of value-added originating from this service sector of all economies in world exports. Similar to the RCA in the gross export terms, a country's industry has a comparative advantage, when an RCA index is above one.

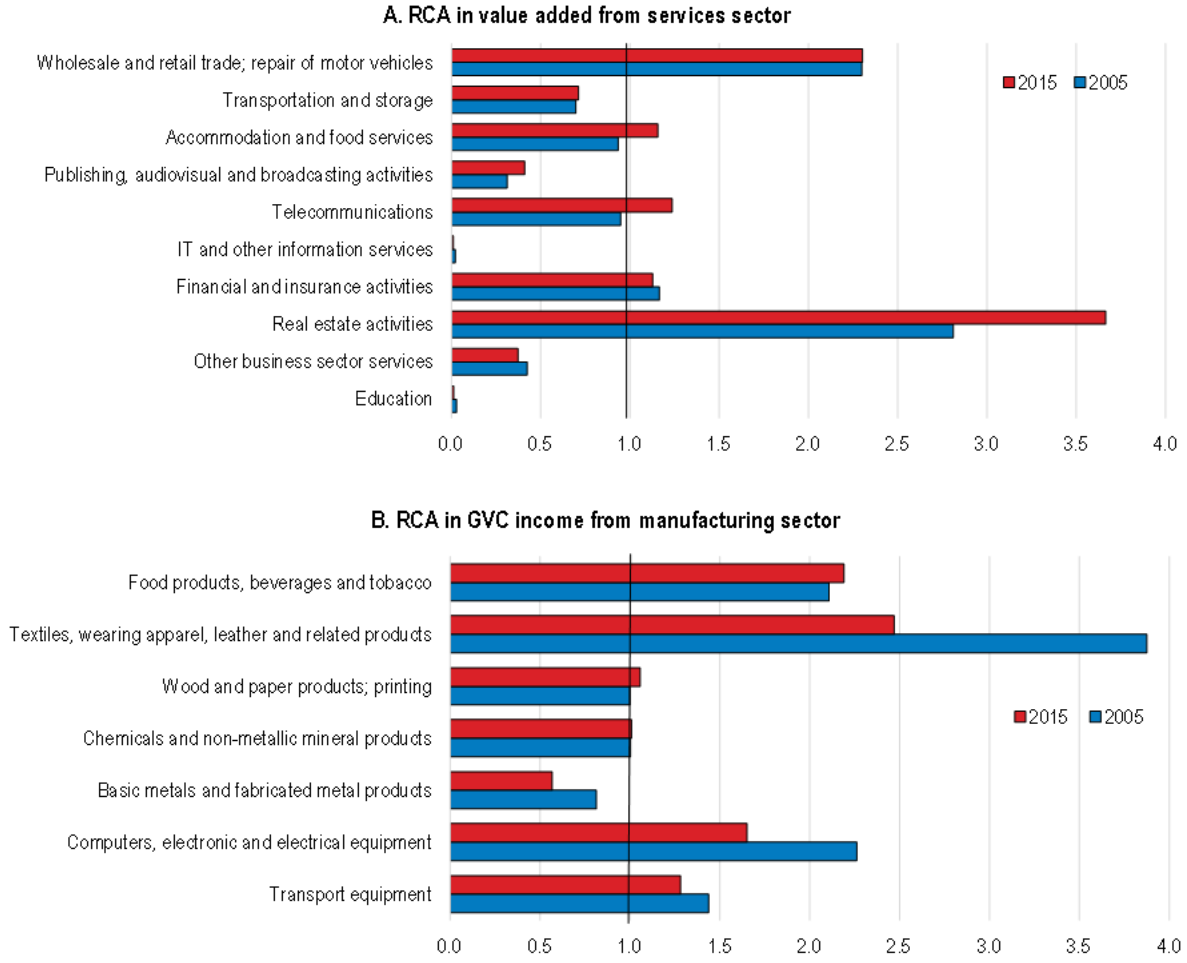
Estimates of the RCA in terms of value added suggest that Thailand has a comparative advantage in basic business services (wholesale and retail trade, financial, and telecommunications services) and tourism-related services (real estate activities, and accommodation and food services). However, it does not have a comparative advantage in transportation and storage (including logistics) and high-end business services (IT and information, and other business services including professional services) (Figure Annex 3.B.1).

On the flip side of a coin, manufacturing products now contain a lot of services input. Therefore, a comparative advantage indicator needs to consider all domestic value added ("GVC income") embodied in a given sector's final products (i.e. final demand in a given country or exports). This includes value added generated by supporting industries within a country, but excludes imported value added.

The RCA is defined as the share of domestic value-added contents of a sector's final products in a given economy's total value added as compared to the average share in all economies (Timmer et al., 2013[25]). For example, as for automobile products, it looks at the share of value added in a given country as compared to the average share contributed by all economies. Similar to the RCA in the gross export terms, a country's industry has a comparative advantage, when an RCA index is above one.

Estimates of the RCAs in terms of GVC income suggest that the Thai manufacturing still maintains its competitive edge, but it is deteriorating except for the food processing industry (Figure Annex 3.B.1). The material industry does not have a comparative advantage.

Figure Annex 3.B.1. Revealed comparative advantages of the Thai services and manufacturing sectors



Note: An industry has a revealed comparative advantage if its RCA is greater than 1.
Source: OECD calculations based on OECD, Trade in Value Added (TiVA) Database.

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Annex 3.C. Recovery of exports from the Global Financial Crisis

To estimate how diversification and trade openness could affect the recovery of a country's exports from shocks, simple calculations were conducted with regard to the export performance of the OECD countries and some emerging economies during the Global Financial Crisis (GFC).

The recovery length (the number of periods from the trough to the time when export volume restored the pre-crisis peak) and the depth (the ratio between the pre-crisis peak export volume and the trough) were measured for each economy. For export diversification, the Export Diversification Index (IMF) and the HH market concentration index (World Bank) were utilised. The former captures a country's export diversity in products and partners and the latter captures the diversity in trade partners only. The both indexes are smaller, if an economy's exports are more diverse. Trade openness is measured as the share of exports and imports in GDP. By using the data for 53 economies, OLS regressions are estimated.

The estimation suggests that the depth is the main determinant of the recovery length (Table Annex 3.C.1). An exponential relationship between them suggests that the deeper the export drop is, the longer a recovery would be. This is because it would be difficult to restore the previous markets as new competitors emerge, reconstruct more damaged supply chains and recover the previous level of production capacity due to the loss of productive labour and capital. Since the sample size is small, the result needs to be interpreted carefully, but an economy that made efforts to expand its trade openness before the crisis would be likely to recover faster. Diversification of trade partners would also be likely to reduce the recovery length.

Table Annex 3.C.1. Export recovery from the GFC – trade openness and export diversification

Regression of recovery length on depth of export decline, export diversification and trade openness

	Dependent variable is log of recovery length			
	(1)	(2)	(3)	(4)
Constant	0.961724	0.802263	0.938110	0.965498
	(4.357741)	(3.597037)	(4.462092)	(4.724609)
Depth	0.065242	0.075929	0.073968	0.073957
	(5.282051)	(6.020628)	(6.143983)	(6.386507)
Total diversification		0.756282		
		(1.524398)		
Partner diversification			7.419033	
			(1.872373)	
Trade openness				-0.012218
				(-2.636149)
Observations	53	53	53	53
Adjusted R-squared	0.336671	0.398124	0.411420	0.447009

Note: Total diversification is calculated from IMF's Export Diversification Index and partner diversification is calculated from World Bank's HH market concentration index. Trade openness is the share of exports and imports in GDP. The three variables are the difference between the averages of 2000-2003 and 2004-2007. If the variable is negative, exports are more diverse in 2004-2007 than in 2000-2003. For trade openness, if the variable is positive, a country is more open in 2004-2007 than in 2000-2003.
Source: IMF; World Integrated Trade Solution (World Bank); World Bank Development Indicators Database; OECD calculations.

Annex 3.D. Estimation of productivity in GVCs

Estimates were conducted for this report to analyse the contribution of value chains on productivity of the Thai manufacturing.

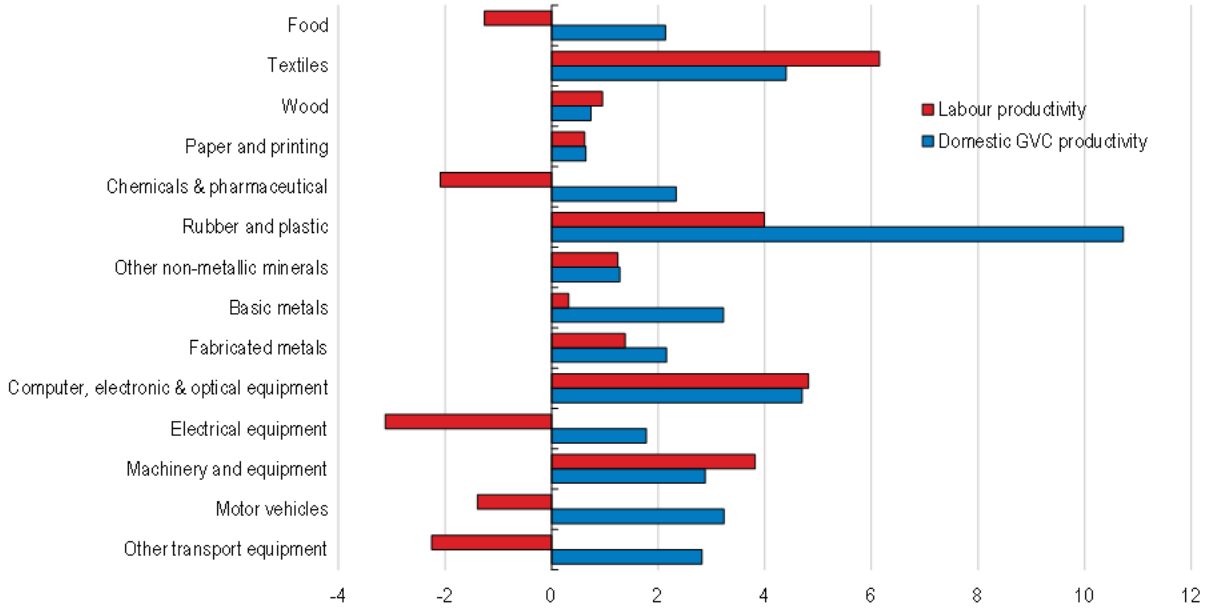
In GVCs, manufacturing involves a range of supporting industries, including services, beyond the national boundaries. Productivity calculation that takes into account production processes in value chains, such as outsourcing, captures a more accurate picture of the economy (Dietzenbacher et al., 2012[26]). Extending this framework, recent empirical work suggests that domestic services input contributes to boosting productivity of manufacturing in many countries (Miroudot and Cadestin, 2017[24]).

Instead of focusing on economic activity of a given industry, economic activities of all the industries in Thailand that contribute to produce final products (i.e. domestic final demand and exports) of a given industry are considered. Services provided by foreign affiliates are also included. For example, an automobile consists of parts, software and services, such as design and testing. An alternative labour productivity ("domestic GVC productivity") is calculated along with these fragmented production processes by using the OECD TiVA Database.

Estimates suggest that domestic GVC productivity of the electrical equipment industry and the automobile industry, which have large supporting industries, grew faster than labour productivity (Figure Annex 3.D.1). Approximately, half of the employment involved in the production of these sectors' final products are in services sectors.

Figure Annex 3.D.1. Domestic GVC productivity by manufacturing sub-sectors

Average annual growth between 2005-2015, per cent



Note: Labour productivity is defined as value added divided by employment.
Source: OECD calculations based on OECD, Trade in Value Added (TiVA) Database; Bank of Thailand; NESDC, National Accounts; and National Statistical Office of Thailand (NSO), Labour Force Survey.

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Annex 3.E. Effects of trade agreements on labour

To investigate the impacts of preferential trade agreements on the labour market in Thailand, particularly demand shifts among five different skill levels, the OECD METRO model has been used for this report. The results from stylised simulation are as follows (Table Annex 3.E.1):

Table Annex 3.E.1. Impacts of PTAs on different skill levels

Percentage change from the baseline

		Office management and professionals	Technical and assistant professionals	Clerks	Service and shop assistants	Agricultural and other low skill workers
Trade	Case 1	1.2	0.6	0.3	1.3	-2.4
	Case 2	0.2	0.4	0.1	0.3	0.6
	Case 3	-0.1	0.2	0.0	-0.1	0.0
	Case 4	1.3	1.2	0.5	1.5	-1.9
Accommodation and food	Case 1	0.9	0.3	0.1	1.0	-2.7
	Case 2	-0.2	-0.1	-0.3	-0.1	0.2
	Case 3	-0.1	0.2	0.0	-0.1	0.1
	Case 4	0.6	0.5	-0.2	0.8	-2.5
Transport	Case 1	1.3	0.8	1.6	2.6	-1.2
	Case 2	-1.3	-1.1	-1.5	-1.4	-1.1
	Case 3	1.1	1.4	1.2	1.0	1.2
	Case 4	1.2	1.0	1.2	2.2	-1.1
Communication	Case 1	0.5	0.0	1.2	2.2	-1.6
	Case 2	-0.1	0.1	-0.4	-0.2	0.1
	Case 3	-0.1	0.2	0.0	-0.2	0.0
	Case 4	0.4	0.2	0.8	1.8	-1.5
Financial, insurance and business	Case 1	0.7	0.2	-0.1	0.9	-2.8
	Case 2	-0.6	-0.5	-0.7	-0.6	-0.2
	Case 3	-1.1	-0.8	-1.0	-1.1	-1.0
	Case 4	-1.0	-1.1	-1.8	-0.8	-4.1
Other services	Case 1	-0.8	-1.3	-1.4	-0.4	-4.1
	Case 2	0.1	0.2	-0.1	0.1	0.4
	Case 3	0.2	0.4	0.3	0.1	0.3
	Case 4	-0.6	-0.7	-1.2	-0.2	-3.5

Note: Case 1: Reduction of tariffs; Case 2: Reduction of trade cost of non-tariff measures (NTMs) on goods; Case 3: Reduction of NTMs on services; Case 4: Simultaneous trade liberalisation. For the details, see Box 3.6.
Source: Source: OECD estimates based on the METRO model.

OECD Economic Surveys

THAILAND

ECONOMIC ASSESSMENT

Thailand has made impressive economic and social progress over several decades. However, the COVID-19 crisis has interrupted this progress. Thanks to its sound macroeconomic policy framework, Thailand was well placed to respond rapidly to the sharp economic downturn. Nevertheless, achieving high-income country status will require, in addition to a strong recovery programme, a set of policy reforms focused on productivity growth and human capital accumulation. Thailand has made remarkable progress in expanding access to education, and the share of highly educated workers has increased significantly. Nevertheless, because of skills mismatches, substantial labour shortages have prevailed in a range of occupations and industries, which makes it important to improve vocational education and adult training programmes. As the demand for services has become important globally, Thailand has an opportunity to boost its exports of services, diversify its economic activity, and therefore become more resilient in the face of unexpected shocks. This would involve a focus on digital services and business-to-business services, which represent a large share of the value of manufacturing products. Focus on human capital, skills, digital technology, and high-value services would help Thailand resume strong economic growth and social progress after the COVID-19 crisis.

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