International Labour Organization

ILO Brief

June 2020

COVID-19 employment and labour market impact in Thailand

Key points

- The COVID-19 related impact on the economy in Thailand through both direct (generated by domestic lockdown) and indirect (supply and demand shocks in supply chains, including tourism) channels is likely to be severe. There are already signals of the disruptions in the world of work in the first quarter 2020 in Thailand which are expected to deepen and broaden over the next months.
- The sectors that are most at risk to experience a significant (medium or high) reduction in economic output as a result of the COVID-19 crisis employed nearly 21 million of 37 million workers in 2019. The impact on workers within the impacted sectors will come in the form of reduced working hours and wages or even complete job loss. From 6.6 to 7.5 million workers in Thailand are expected to experience such disruption first hand.
- Already the number of hours worked in Thailand declined by nearly 6 per cent in the first quarter 2020, which is the equivalent to the loss of 2.2 million full-time jobs (assuming a 40 hour working week). The decrease is expected to increase to about 10 per cent in the second quarter, thus bringing the estimated loss to a full-time equivalency of 4 million jobs.
- Workers in the informal economy are those most severely affected by the COVID-19 crisis due to their lack of income security and exclusion from most social protection measures. Already, the ten occupations with the highest shares of daily and hourly workers saw a reduction of nearly half a million jobs between the first quarter 2019 and first quarter 2020.
- One of the main impacts of the COVID-19 on the labour market in Thailand will be an increase in working poverty as the volume of work measured in terms of hours worked falls along with declining economic activities. The loss of income among informal workers will push many over the poverty threshold. As a result, the share of the working poor in Thailand is expected to increase from 4.7 per cent to at least 11 per cent of total employment this year.
- The Government of Thailand has been quick in its design of COVID-19 stimulus and relief measures are far-reaching. Yet as the crisis lengthens, the Government will need to adjust its policies towards more consistent support of the most vulnerable and in consideration of mid- to long-term COVID-19 recovery objectives.

1. Introduction

From its initial start in China, COVID-19 has since become a pandemic affecting the whole world. This note concentrates on the impact of the virus on the labour market of Thailand. With sizeable decreases or stoppages in the movement of persons, including tourists, and severely disrupted flow of goods and services through global supply chains, the impact of the virus has brought the typical channels of economic production to a standstill in Thailand, as elsewhere. In 2019, tourism and export-oriented manufacturing remained important segments of Thailand's economy, with shares of GDP accruing at 18 per cent and 39 per cent, respectively. It is exactly these two sectors that are among the most vulnerable in the face of the demand and supply-side shocks associated with the COVID-19 crisis, thus placing the millions of tourism-related and manufacturing jobs in Thailand in a highly precarious situation.

Thailand's economy was already slowing in 2019, with a GDP growth rate of just 2.4 per cent and employment figures that were 250,000 below the number of jobs in the 2018. The recent IMF estimate of a 6.7 per cent decrease in GDP in 2020 signals the severity of the COVID-related shock to the Thai economy. Workers and those dependent on their income are already facing the severe consequences of the COVID-19 inflicted economic crisis.

In Thailand, COVID-19 infection rates are relatively low and the spread has been slow. As of 1 June, Thailand counted 3,084 cases of COVID-19 infections. The global figures at the time was nearly 6.4 million. From late-March, when the majority of cases registered were locally transmitted, the government ramped up its measures to contain the virus spread. On 25 March 2020, the Prime Minister announced an emergency decree to control the pandemic. Subsequently, all schools, universities, malls, markets, dine-in restaurants, salons, spas, gyms, massage parlours, theme parks, sports venues, conference halls, cinemas and theatres were closed.[1] Supermarkets, fresh food markets and restaurants offering takeaway food were exempted from the order. Local school, already on their summer breaks, were ordered to postpone the return of students from May to July.

Preventive measures also included imposition of a nationwide curfew from 10 pm to 4 am, postponing the Songkran Holiday, a major five-day national holiday, and allowing provincial governors to close any gathering spaces and closely regulate travels. International arrivals have been tightly restricted, requiring medical clearances prior to departure and 14-day self-isolation after arrival. The international flight ban was subsequently extended until 30 June. As infection slowed, lockdown measures have been gradually eased in Thailand, but still the effects of the severe disruption to enterprises and livelihoods over the course of the lockdown are being felt.

The remainder of this report examines in detail how the COVID-19 pandemic is impacting the labour market in Thailand, making use of the data available at the end of the first quarter 2020. The following section 2 sets the scene with an assessment of the transmission mechanisms through which COVID-19 is impacting economic activity in Thailand. Section 3 begins the in-depth examination of the first quarter results of the labour force survey. With the country put under lockdown from mid-March, the COVID-19 impact on workers is not expected to have reached full force in the first quarter. Nonetheless, it is interesting to examine already where disruption is occurring as a signal of the amplified impact expected in the second quarter and beyond. Section 4 highlights how the COVID-19 crisis hits the vulnerable population groups in Thailand particularly hard, and section 5 looks into the national policy responses to mitigate the impact of the crisis on workers and enterprises.

1 As of 1 June, most establishments listed have been allowed to re-open under strict guidelines for social distancing.

2. Economic activity in the first quarter of 2020

Tourism activities in Thailand have ground to a halt. According to data published by the Thai Ministry of Tourism and Sports, the total number of international tourists from January to March was 6.7 million, down from 10.8 million in the same period of 2019 (a decrease of 38 per cent).[2] Tourism in April was at a complete stand-still with zero arrivals. Total income brought by international tourists was 333 billion Thai baht (THB) in the first three months of 2020, down from 557 billion THB one year earlier, a decrease of more than 40 per cent.[3]

The spread of the virus to Thailand's principal trading partners has disrupted supply chains, bringing both a supply- and demand-side shock to the country's manufacturing sector. Manufacturing in Thailand is highly reliant on the import of intermediate goods from China, Japan and the Republic of Korea. With factory closures and transportation disruptions in all countries throughout Asia, the manufacturing sector in Thailand is taking a hit. As of April 2020, the Bank of Thailand reported a negative 1.9 per cent growth on exports and negative 6.2 per cent on imports.

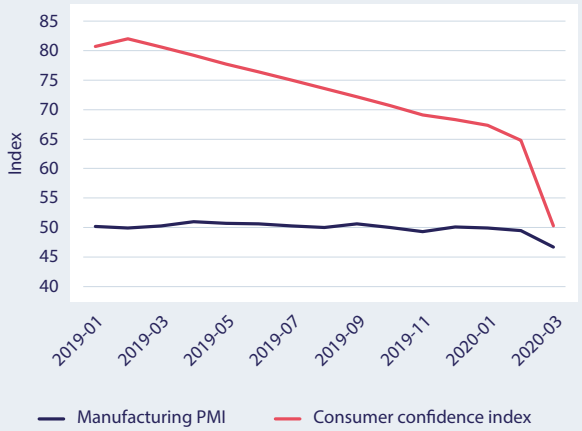
Figure 1 shows the manufacturing purchasing managers' index (PMI), consumer confidence index and retail sales for Thailand. As of March, the manufacturing PMI had decreased slightly to rest 3.4 percentage points below the index in December 2019. More worrisome is the collapse in consumer confidence over the same period with a decline of 18 points, and the striking collapse of retail sales in March (20.5 per cent below the sales value of March 2019).

The manufacturing industries in Thailand that are most dependent on intermediate inputs imported from China – and thus impacted by the COVID-19 crisis from as early as January 2020 when production in China closed down with early lockdown measures – are computer, electronic and optical products, electrical equipment and machinery and equipment. But there is also a reverse dependency, with China being an important source of demand for wood and products of wood and cork, chemicals and chemical products and computer, electronic and optical products produced in Thailand.[4]

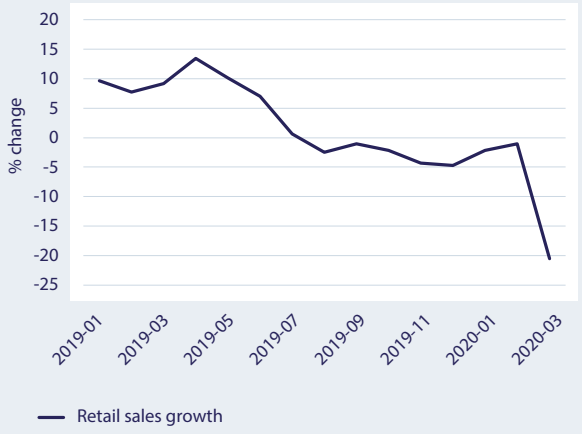
FIGURE 1

Selected production and economic indicators, January 2019 to March 2020

Panel A. Manufacturing Purchasing Managers' Index (PMI) and Consumer Confidence Index



Panel B. Retail sales growth (yoy)



Source: IHS Markit (consumer confidence), Bank of Thailand (PMI) and CEIC Data (retail sales growth).

2 Data from the Thai Ministry of Tourism and Sports.
3 For a more in-depth analysis of the COVID-19 related impact on the tourism sector in Thailand and other countries in Asia and the Pacific, see ILO (2020b).
4 This assessment of value chain linkages with China, is based on the OECD's Inter-Country Input-Output Tables, published in December 2018.

With a few exceptions, manufacturing production in Thailand is below the 2018 level in nearly all sectors in the first quarter 2020 (table 1). This is important as it shows that already before the current crisis, the manufacturing sector in Thailand was showing signs of trouble. From December 2019 to April 2020, manufacturing production is seen to decline by nearly 20 per cent in total. The most significant decreases (by decreasing order) are found in the manufacture of beverage products, other transport equipment, textiles, coke and petroleum products, rubber and plastic products and leather and related products. On the other hand, there are industries that have increased production over the same period, including the manufacturing of electrical equipment, machinery, motor vehicles, pharmaceutical products and chemical products. Except for pharmaceutical products and machinery, production in the industries showing short-term growth were below production levels in 2018.

TABLE 1

Manufacturing production indices by sector

Manufacturing production index (2016=100)	2018	Dec. 2019	Jan. 2020	Feb. 2020	Mar. 2020	Apr. 2020	% change	
							Dec. 2019 to Apr. 2020	2018 to Q1 2020
Manufacturing Production Index (% change)	**3.7**	**-4.4**	**-4.0**	**-5.2**	**-11.2**	**-6.8**		
Total index (2016=100)	**105.6**	**98.9**	**103.9**	**100.9**	**103.7**	**79.0**	**-19.9**	**-2.8**
Food products	110.2	113.9	128.8	117.1	109.8	99.7	-14.2	8.4
Beverages	99.0	111.7	100.7	107.6	120.6	70.0	-41.7	10.6
Tobacco products	69.0	64.2	69.5	58.2	59.6	53.2	-11.0	-6.6
Textiles	103.5	86.0	89.9	95.5	96.1	63.3	-22.7	-9.7
Wearing apparel	100.0	101.7	99.3	99.7	88.5	85.2	-16.5	-4.2
Leather and related products	103.9	101.8	111.4	102.7	103.0	84.4	-17.4	1.8
Paper and paper products	107.3	100.5	111.7	108.1	117.5	106.6	6.1	5.2
Coke and refined petroleum products	110.8	111.6	107.2	101.9	104.7	89.5	-22.1	-6.2
Chemicals and chemical products	106.2	94.1	98.6	93.6	110.2	105.0	10.9	-5.4
Basic pharmaceutical products and pharmaceutical preparations	121.9	138.0	124.3	147.9	156.0	160.5	22.5	20.8
Rubber and plastics products	103.0	96.2	99.5	97.3	96.7	78.5	-17.7	-5.2
Other non-metallic mineral products	102.4	95.3	99.8	107.4	110.5	96.9	1.6	3.5
Basic metals	106.2	86.5	98.9	88.9	89.6	79.6	-6.9	-13.8
Fabricated metal products, except machinery and equipment	98.9	83.9	86.8	86.2	90.4	81.3	-2.6	-11.1
Computer and electronic products	100.9	99.7	90.0	90.0	91.9	100.0	0.3	-10.3
Electrical equipment	98.5	85.9	93.2	93.2	92.1	96.6	10.7	-5.7
Machinery and equipment n.e.c.	93.1	91.1	113.5	113.5	112.7	132.4	41.3	20.1
Motor vehicles, trailers and semi-trailers	112.0	86.1	98.2	98.2	92.4	93.8	7.7	-15.7
Other transport equipment	104.2	103.1	105.0	105.0	102.3	80.3	-22.8	-0.1
Furniture	96.8	85.7	90.7	90.7	86.3	83.2	-2.5	-7.6
Other manufacturing	96.6	88.4	88.2	88.2	86.8	90.5	2.1	-8.9

Source: The Office of Industrial Economics, available from Bank of Thailand "key economic indicators".

3. Labour market profile in Thailand at the onset of COVID-19

The capacity of the labour market to bear the brunt of external and policy shocks depends on the structure of the labour market – where and how people work and the nature of employment relationships. It also depends on the capacity of labour market institutions in the country and the availability of social protection measures to protect enterprises and workers and soften the income losses that come with the crisis.

In 2019, Thailand's labour force participation rate stood at 67.0 per cent, with a very low unemployment rate of 0.7 per cent. Total employment was 37.6 million, of which 45.6 per cent were women. The youth (15-24) population who are not in education, employment or training (NEET) amounted to 1.4 million, giving a NEET rate of 14.9 per cent. A little less than two-thirds of the NEET population were women, most of whom were married.

Thailand's economy and labour market have been shifting from rural and agriculture-dominance to urban manufacturing and service-orientation over the last couple of decades. By 2019, still the majority of workers were in self-employment, although the share has declined significantly over time. There were 19.0 million self-employed workers in Thailand in 2019 compared to 18.7 million wage and salaried workers.

3.1 What does the first quarter data show?

Official national labour force surveys that collect standardized data on a monthly basis are the most reliable source of data to properly gauge the impact of the COVID-19 pandemic on jobs. In Thailand, the labour force survey is collected monthly. At the time of drafting this report, data were available through March, thus completing the first quarter 2020. This section explores whether the impact on jobs in Thailand were visible already in the first quarter, at the time that the virus' impact was accelerating around the world. With the country put under lockdown from mid-March, the COVID-19 impact on workers, if not already apparent, is expected to amplify and show up more clearly in the second quarter and beyond.

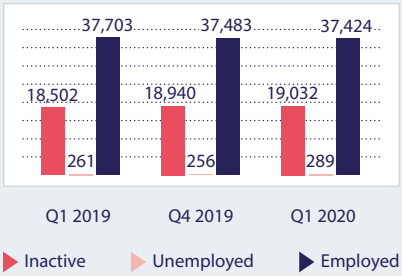
From the fourth quarter 2019 to first quarter 2020, there was an increase of 34,000 person in unemployment, a decline of 59,000 persons employed and an increase of 92,000 in the number of persons outside the labour market (figure 2, panel A). The share of inactive persons over the period increased from 33.4 to 33.5 per cent and the employment-to-population ratio decreased from 66.1 to 66.0 per cent (figure 2, panel B). There is also an increase in the unemployment rate, albeit small for the total working-age (15+) population. From Q1 2019 to Q1 2020, the unemployment rate increased only slightly from 0.7 per cent to 0.8 per cent. The youth unemployment rate (15-24) increased from 3.7 to 3.9 per cent from Q4 2019 (although it is the same as in Q1 2019; figure 2, panel C). The finding is in line with previous crisis where youth unemployment increased faster than adult unemployment and also to a greater degree.[5]

5 ILO (2020c) looks at the COVID-19 impact on youth employment in greater detail. A more in-depth regional analysis on youth is pending.

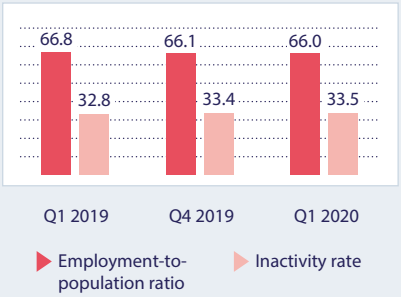
FIGURE 2

Labour market status in Thailand, Q1 2019, Q4 2019 and Q1 2020

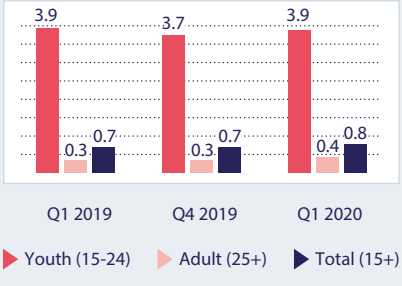
Panel A. Working-age population by labour market status ('000)



Panel B. Employment-to-population ratio and inactivity rate (%)



Panel C. Unemployment rate, total, youth and adult (%)



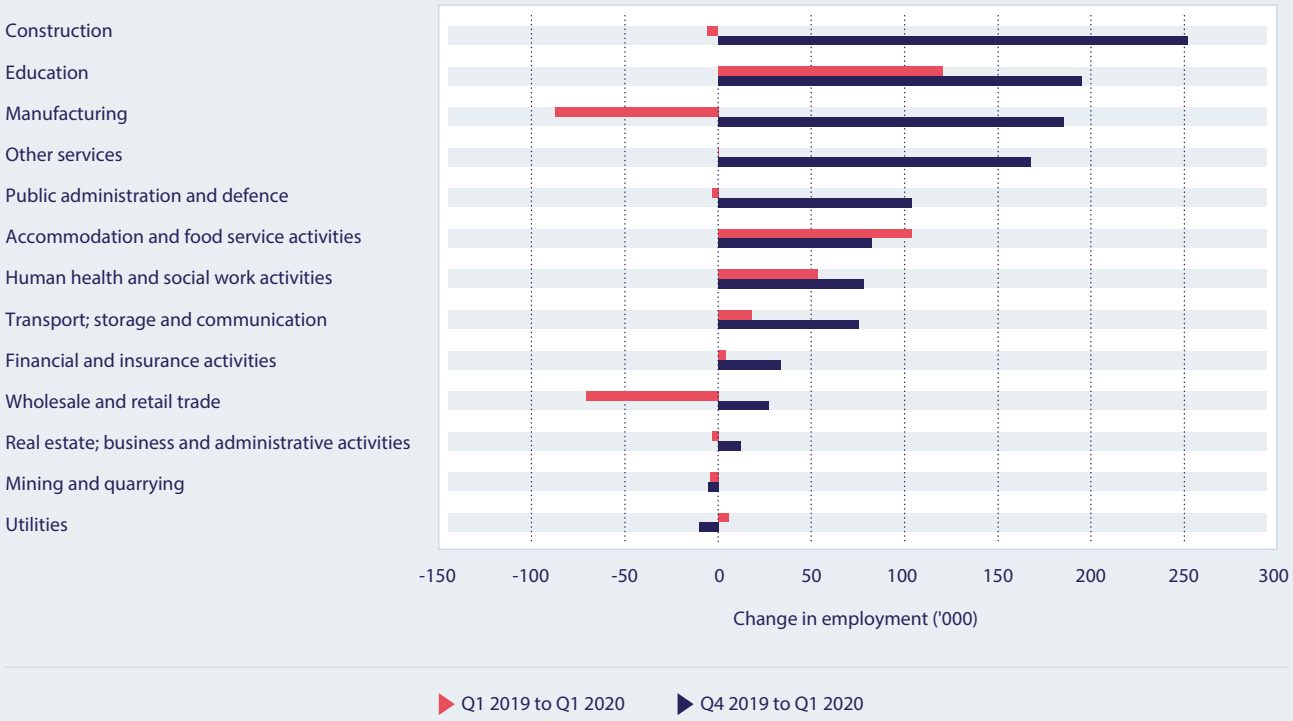
Source: ILO assessment based on Thailand National Statistics Office, Labour Force Survey data, 2019 and 2020.

The decrease in employment between the fourth quarter 2019 and first quarter 2020 was due almost entirely to the sizable decrease of more than one million workers in the agricultural sector between the two quarters. This is likely a reflection of the country's current drought situation.[6] Between the fourth quarter 2019 and first quarter 2020, the number of persons employed increased in all sectors but agriculture, utilities and mining (figure 3). If, however, the comparison is made between first quarters 2019 and 2020 to limit seasonal effects, there are many additional sectors seen to be shrinking in the number of persons employed.

Beyond agriculture, the decrease in employment numbers between the first quarters 2019 and 2020 are largest in the wholesale and retail trade sector and manufacturing, with employment in the two sectors together shrinking by 157,000 person. Smaller decreases were seen also in public administration, construction, real estate and other services. That employment continued to increase in the accommodation and food services sector and also the transport sector, which are sectors linked to tourism, demonstrate the lagged effects of the crisis and will be discussed further below.[7]

FIGURE 3

Change in employment by sector (1-digit), Q4 2019 to Q1 2020 and Q1 2019 to Q1 2020



Note: Due to its large size, the employment change in the agricultural sector is not shown.
Source: ILO assessment based on Thailand National Statistics Office, Labour Force Survey data, 2019 and 2020.

6 See Thailand (2020).
7 For a more detailed analysis of the tourism sector in Thailand and the impact on the sector due to COVID-19, see ILO (2020b).

Despite the fall in the number of tourist by the end of the first quarter 2020, as international travel to Thailand was still possible until late March and the spread of the virus occurred gradually over the period, employment in tourism-related sectors was not yet negatively affected. Overall, from Q4 2019 to Q1 2020, employment in tourism-related sectors on the whole increased by 139,000 workers, or 4 per cent (figure 4). The increase in tourism-related employment from Q1 2019 was 145,000 persons (4.2 per cent). Only in the sub-sectors of water passenger transport and air passenger transport were the employment impacts of COVID-19 starting to decline already (from Q4 2019). Certainly it will be interesting to see what comes with the second quarter results when hotels and other tourism venues were under complete lockdown in the country.

One possible early sign of the impact of the COVID-19 crisis is the strong increase in the number of employed persons who are temporarily absent from work during the first quarter 2020. Compared to the first quarter of 2020, the number increased by 17.8 per cent from 562,000 to 662,000 (table 2). The COVID-19 crisis can provide many reasons for a worker to remain employed yet be absent from work, such as workplace closures, quarantine measures or sickness. The sectors showing the largest increases (100 per cent or more) in the number of "employed but temporarily absent" persons are those in other services, arts, entertainment and recreation, professional, scientific and technical activities, administrative and support services, and also workers in the manufacturing sector. The indicator should be carefully watched as it could be a sign of further decreases in employment to come in the near future if many workers who are currently absent from work end up transitioning to unemployment. It could also be that this indicator is where some persons on telework are showing up.

FIGURE 4

Percentage change in employment in tourism-related sectors, Q4 2019 to Q1 2020 and Q1 2019 to Q1 2020

Source: ILO assessment based on Thailand National Statistics Office, Labour Force Survey data, 2019 and 2020.

TABLE 2

Percentage change in the number of persons employed but temporarily absent from work, by sector, Q1 2019 to Q1 2020

Sector	% change
S. Other service activities	404.9
R. Arts, entertainment and recreation	261.8
M. Professional, scientific and technical activities	169.3
C. Manufacturing	146.3
E. Water supply; sewerage, waste management and remediation activities	100.0
N. Administrative and support service activities	95.4
F. Construction	76.2
H. Transportation and storage	55.9
O. Public administration and defence; compulsory social security	37.9
G. Wholesale and retail trade; repair of motor vehicles and motorcycles	30.9
B. Mining and quarrying	23.3
A. Agriculture; forestry and fishing	4.3
I. Accommodation and food service activities	-5.5
Q. Human health and social work activities	-11.1
L. Real estate activities	-53.6
P. Education	-71.2
K. Financial and insurance activities	-86.6
Total	**17.8**

Source: ILO assessment based on Thailand National Statistics Office, Labour Force Survey data, 2019 and 2020.

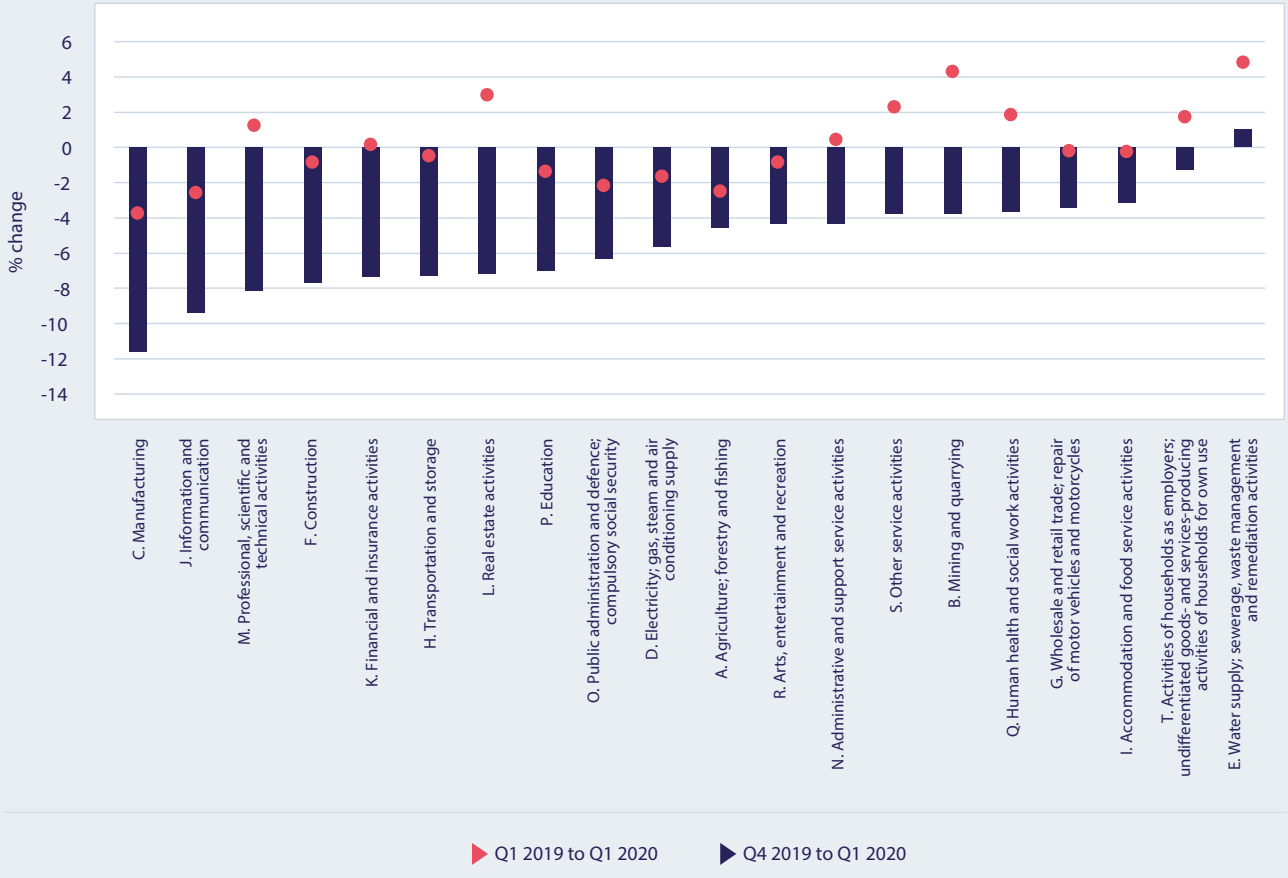
The total number of hours worked in Thailand declined by nearly 6 per cent from the last quarter 2019 through first quarter 2020, which is equivalent to the loss of 2.2 million full-time jobs (assuming a 40 hour working week). The hours actually worked per week in Thailand declined in 2020, from both Q4 2019 and comparing the same quarter (Q1) in 2019. According to the ILO nowcasting model, which tracks reductions in working hours due both to lay-offs and other temporary reductions in working time, working hours in the South-Eastern Asia sub-region is projected to decline by 10 per cent from the last quarter 2019 through the second quarter 2020. It is expected that the reduction in working hours in Thailand will also be higher than the 6 per cent drop seen in the first quarter. **Assuming a 10 per cent reduction in working hours in the second quarter 2020, Thailand would forego the equivalent of 4 million full-time workers (assuming a 40 hour work week).**[8]

8 According to the 3rd Edition of the ILO Monitor, the full-time equivalent employment losses are presented to illustrate the magnitude of the estimates of hours lost. Their interpretation is the estimate of the reduction in hours worked, if those reductions were borne exclusively and exhaustively by a subset of full-time workers and the rest of workers did not experience any hour reduction. The figures should not be interpreted as numbers of jobs actually lost nor increases in unemployment. While the Monitor discusses the FTE at both the 48 and 40 hours per week levels, for the purpose of this Brief, we prefer to refer to the 40-hour per week limit, which is closer to the results of the average hours worked in Thailand.

The sectors that showed the largest declines in the average hours of work per week from Q4 2019 were the manufacturing sector (-11.6 per cent), information and communications (-9.4 per cent), professional, scientific and technical activities (-8.2 per cent), construction (-7.7 per cent) and financial and insurance activities (-7.3 per cent) (figure 5). The average hours worked per week in the wholesale and retail trade sector were 3.4 per cent below the fourth quarter average, but nearly identical to the hours worked in Q1 2019. **The results imply that while the employment effects of the lockdown in the retail sectors, arts and entertainment were not yet strong in Q1 2020, the breakdown of supply chains from China already from January 2020 caused an earlier disruption in the manufacturing sector**.

FIGURE 5

Change in average hours worked per week per employed person by sector, Q4 2019 to Q1 2020 and Q1 2019 to Q1 2020 (%)



Source: ILO assessment based on Thailand National Statistics Office, Labour Force Survey data, 2019 and 2020.

3.2 A closer look at the manufacturing sector

In section 2, the vulnerability of Thailand's manufacturing sector was mentioned, given the production-dependency of several manufacturing sectors on intermediate inputs imported from China and other countries hit hard by the COVID-19 virus. Examining the particular sectors that are linked to the supply chain with China makes sense with regards to the outcomes of Q1 2020 as it was in China that the impact of COVID-19 was first felt. The supply chains linked to other countries have since been disrupted to an equal, if not deeper extent, but that disruption would have started later in Q1. ILO (2020d) notes that the impact of the virus on supply chains is likely to worsen in the near future as countries move progressively through phases of the pandemic and world trade continues to contract from between 13 and 32 per cent in 2020. Also foreign direct investment is expected to fall by as much as 30-40 per cent in 2020–21, according to the Brief.

Among the sectors most aligned to the supply chains linked to China are computer, electronic and optical products, electrical equipment and machinery and equipment. When production in China closed down, the manufacturing sectors dependent on imports of raw materials or intermediate goods from China were impacted. On the demand-side, where China is an important importer of Thai goods, disruption also occurs. Among the manufacturing products frequently exported to China are wood and products of wood and cork, chemicals and chemical products and computer, electronic and optical products.

Recalling the results of the production indices shown in table 1 (section 2), while many of the manufacturing sectors showed slight dips in production early in the year, in the month of April there were also numerous manufacturing sectors that seemed to recover their production by March or April. Among the manufacturing sectors that did not show much change in production over the early months of 2020 (or even showed an increase in the production index) were the sectors listed above as reliant on the supply chains with China. Of the five sectors, however, the indices did show a dip from the 2018 average except for wood products where no data are available and machinery and equipment, which showed a steady increase in production. The COVID-19 linked disruption, therefore, is not made clear from the production figures, but when focusing on the employment trends, we see a decline in employment numbers for all five sectors (figure 6). The decline in employment varied from 13.0 per cent for machinery and equipment to 3.7 per cent for wood. The question then is how much of the decline in jobs was due to COVID-19 – recalling that this was still early days of the crisis – and how much resulted from stagnating demand in these sectors that was already occurring in 2019. The only exception was the computer, electronic and optical products industry, which saw gains in employment in the same time period.

Not only employment but also wages in the supply-chain linked sectors dropped on average in Q1 2020, relative to the year before. This was the case for workers engaged in the manufacturing of wood and wood products as well as chemicals and chemical products, which have seen a decline in wages of 7.8 and 5.9 per cent, respectively, likely driven by the drop in demand for these products from China. Also workers in the machinery and equipment industries, which relies on inputs from China, saw a decline in wages of 2.4 per cent. Wages remained unchanged or close to unchanged as of Q1 2020 for workers in the computer, electronic and optical products industry, as well as in the electrical equipment industry.

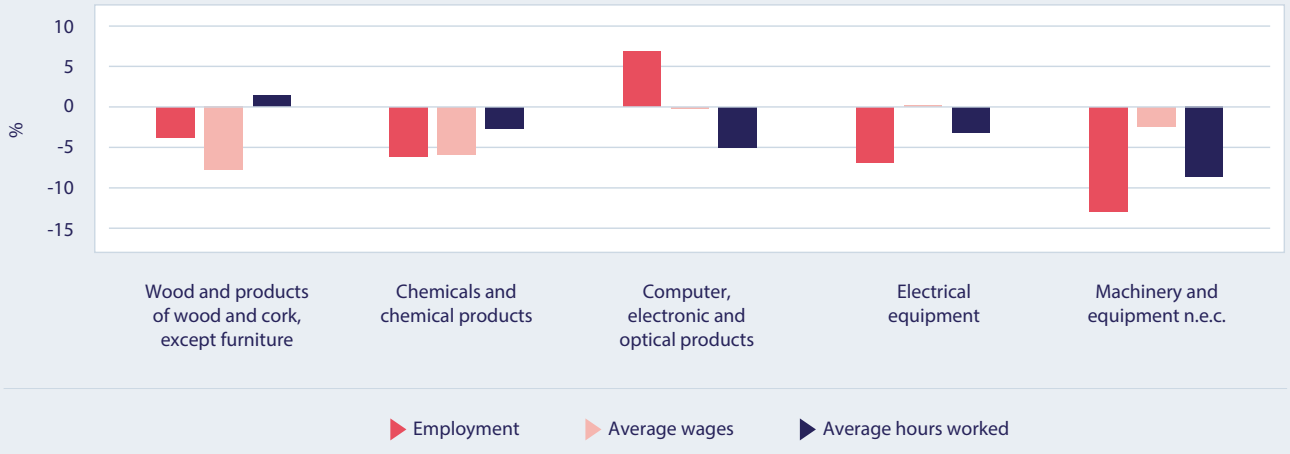
Working hours showed a decline in four out of the five manufacturing industries, including chemicals and chemical products, computer, electronic and optical products, electrical equipment, and machinery and equipment, indicating some adverse impact of COVID-19 through value chains on production. Hours worked have remained unchanged or close to unchanged for workers engaged in the production of wood.

3.3 Sectoral risk

The most recent ILO global assessment of the COVID-19 impact on the world of work estimates that working hours around the world will have declined by 10.7 per cent from the last quarter 2019 through the second quarter of 2020, which is equivalent to the loss of 305 million full-time workers (ILO 2020a). The ILO Monitor also identifies what are expected to be the hardest-hit sectors in terms of declining working hours and job disruption. The key sectors expected – at the global level – to face a severe decline in output and a high risk of workforce displacement include retail trade, accommodation and food services, manufacturing and real estate and business services.

FIGURE 6

Change in employment, wages and hours worked in sector with strongest value chain links to China, Q1 2019 to Q1 2020 (%)



Source: ILO assessment based on Thailand National Statistics Office, Labour Force Survey data, 2019 and 2020.

TABLE 3

Employment by sector, COVID-19 disruption risk assessment and share of informal employment, baseline 2019

Economic sector	Expected impact of crisis on economic output, 2020	Total employment, 2019 (000s)	Share in informal employment, 2019 (%)
Agriculture; forestry and fishing	Low	11,821	91.3
Public administration and defence	Low	1,611	2.4
Real estate; business and administrative activities	Low	1,183	18.2
Education	Low	1,157	4.7
Human health and social work activities	Low	643	6.5
Utilities	Low	215	6.9
Mining and quarrying	Low	61	18.6
Financial and insurance activities	Medium	516	5.1
Manufacturing	Medium	6,125	20.8
Construction	Medium	2,191	44.5
Transport; storage and communication	Medium	1,497	35.7
Other services	Medium	1,497	55.6
Wholesale and retail trade	High	6,245	54.8
Accommodation and food service activities	High	2,850	62.5

Source: ILO assessment based on Thailand National Statistics Office, Labour Force Survey data, 2019 and Informal Employment Survey, 2019. See Annex I for methodology.

To some extent, the outcomes of the first quarter labour force survey of Thailand confirm the projected sectoral disruptions identified in the ILO Monitor even though each country's sectoral risks are expected to differ according to their specific economic structures and the application of COVID-19 lockdown measures. In Thailand, employment was seen to decline in what the Monitor identified as high-impact sectors (manufacturing, wholesale and retail trade, and real estate, but not in accommodations and food services). Even where Q1 2020 results do not yet confirm the expected disruption – as in the tourism sector, for example – we will almost certainly see the disruption in the second quarter results. Also recall that the labour market adjustments that come in the sectors hit by the COVID-19 crisis will first occur in terms of reduced hours worked and reduced wages rather than employment cuts as employers try to hold on to workers and some semblance of activity for all long as possible before their cash runs out.[9]

To further the assessment of sectoral risks from the first quarter onwards, we examined economic sectors based on the International Standard Industrial Classification of All Economic Activities (ISIC), Revision 4, at level 2 of disaggregation and assessed the evidence of economic impact provided in the macroeconomic indicators discussed in section 2 as well as information on the stringency of social distancing measures implemented by the Thai governments. The methodology is described in detail in Annex I. Using the information on hand, we apply a rating of low, medium and high impact to each sector. Results are shown in table 3.[10]

Based on the assessment illustrated in table 3, nearly 21 million workers in Thailand were employed in sectors that are expected to experience medium to high degree of disruption. Among the more vulnerable sectors, the largest shares of workers are in the area of market services, a group that includes wholesale and retail trade, accommodation and food services and transport (51 per cent), followed by the manufacturing sector (29 per cent), construction (11 per cent), other services (7 per cent) and financial and insurance activities (2 per cent) (figure 7, panel A). **With the exception of agriculture, the sectors most at risk of COVID-related disruption to jobs and working hours are also the sectors with the highest shares of informal employment.** The vulnerability of workers in the informal sector will be discussed more in the following section.

Within the more vulnerable sectors, the share by sex in manufacturing is more or less equal (female share is 49 per cent), but because of the higher female share in the high-impact market sectors (especially retail trade and accommodations), the share of women's employment at risk of disruption due to COVID-19 is higher than men's (figure 7, panel B).

The employment impact of the crisis from Q2 2020 will depend on the level of economic disruption and the size of employment in each affected sector. Based on the assessment of reduction in economic output illustrated in table 3, we can estimate the share of workers at risk of losing work either in its entirety or in terms of reduced hours or wages, or both. We envisage two scenarios: one lower-impact scenario in which the containment measures are fairly short-term and not overly stringent and in which production losses are not especially severe, and one higher-impact scenario, where the lockdown measures are severe and the expected economic downturn from the collapse in global demand bring especially negative consequences to the Thailand labour market.

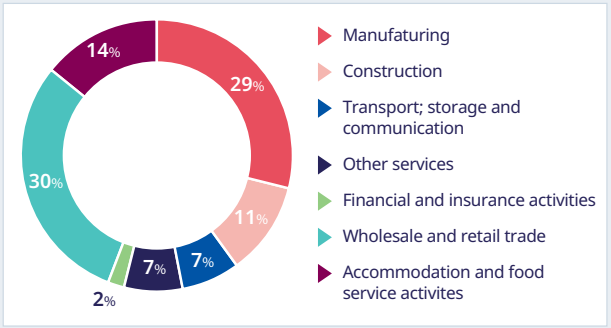
Applying the two scenarios, we estimate that between 6.6 and 7.5 million jobs are likely to be disrupted in the current crisis (see methodology in Annex 1). In total, 3.7 million jobs held by women (22 per cent of the 2019 female workforce) are assessed "at risk" under the high-impact scenario, compared to a nearly equal number (3.7 million) jobs for men (also 22 per cent of the 2019 male workforce). Based on the high-impact scenario, this includes nearly 1.5 million workers in manufacturing, 3.4 million workers in the wholesale and retail trade, repair of motor vehicles and motorcycles sector, 1.1 million in accommodation and food service activities and 690 thousand workers in construction (figure 8). Under the low-impact scenario, 1.5 million workers in manufacturing and 690 thousand in construction are vulnerable to disruption, but the numbers in wholesale and retail trade and accommodation and food service activities are slightly lower at 2.8 million and 1 million, respectively.

9 The authors examined the LFS data on wages but found it to be inconclusive and with too many anomalies to offer an assessment of the early impacts of the COVID-19 crisis on wages in Thailand.
10 The assignment of risk level was made at the 2-digit sectoral level – see Annex I – but results in table 2 are shown at the 1-digit level.

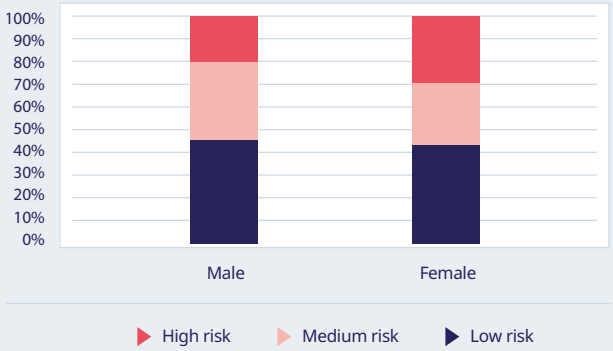
FIGURE 7

Potential COVID-19 job and livelihood disruptions across main sectors and by sex, 2019 baseline

Panel A. Employment distribution in high and medium impact sectors



Panel B. Employment risk level by sex



Source: ILO assessment based on Thailand National Statistics Office, Labour Force Survey data, 2019. See Annex I for methodology.

FIGURE 8

Potential COVID-19 job disruption by sector and sex ('000) (high-impact scenario)

Source: ILO assessment based on Thailand National Statistics Office, Labour Force Survey data, 2019 and 2020.

Agriculture, forestry and fishing, which overall employed 11.8 million workers in 2019, is considered a low-risk sector overall, but challenges may arise for sub-sectors related to the export market. Rural households are also potentially impacted as urban migrant workers returned to rural areas when they lost work in urban areas due to lockdowns. With more household members, rural households may find their household incomes overly stretched, increasing the likelihood of poverty. Also, a decline in demand for agricultural products due to reduced operations of restaurants and other catering services could lead to an overall decline in demand for agricultural products, putting downward pressures on prices and further impacting the income levels of rural households.

The Q1 2020 results discussed above reflect the early days of the COVID-19 disruption. **Some jobs were shed in the high risk sectors – the manufacturing and wholesale and retail trade sectors – while hours were lost in almost all of the sectors designed at medium and high-risk.** In the earlier days of lockdown – recalling that the emergency decree in Thailand was not imposed until mid-March – many workers with formal jobs are somewhat protected by labour regulations that require enterprises to maintain employees, albeit on reduced salary, for as long as possible. As the lockdown measures lengthen and with a much deflated consumer confidence around the world impacting demand for Thailand's exports, some enterprises will run out of cash to pay salaries and will resort to layoffs. At the same time, disruption of informal enterprises and workers will have hit in full by the end of Q1 when the emergency decree took effect. It is for these reasons that we can expect to see an exacerbation of job losses and reduced working hours in the at-risk sectors through the second quarter and beyond.

For informal workers, unemployment is rarely an option as many cannot afford to remain without income for long. Such necessity forces a degree of resilience among informal workers, pushing them to move quickly from one income-seeking task to another. **With 54 per cent of workers in informal employment in 2019, we expect that a large share of the disrupted workers will continue to do some work, albeit many on severely reduced hours and/or wages, rather than move into full unemployment**. Unemployment is expected to increase over the course of 2020, but not by the full amount of workers deemed at risk to disruption (7.5 million in the high-impact scenario).[11]

Some of the projected 7.5 million disrupted workers (high-impact scenario) are expected to join the ranks of the "working poor", a term used to indicate persons who work yet do not earn an income sufficient to keep themselves and their families above the international poverty thresholds (below US$1.90 a day at the extreme level). **ILO's 3rd Edition Monitor as well as ILO (2020e) estimates that the earnings of informal workers in the first month of the crisis in the Asia-Pacific region decreased by 22 per cent.** The report also estimates that the rate of relative poverty, which is defined as the proportion of workers with monthly earnings that fall below 50 per cent of the median earnings in the population, is expected to increase from 22 to 36 per cent in the Asia-Pacific region.

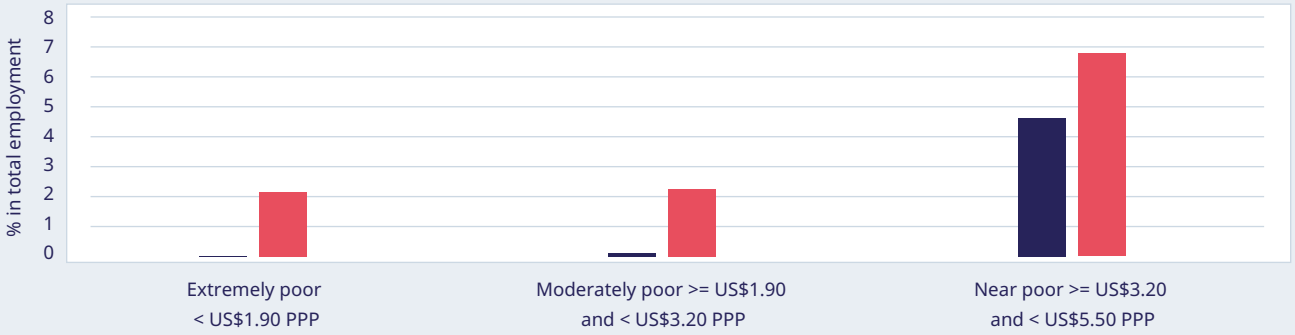
The scenario presented in figure 9 is one in which we assume that at least two-thirds of the 7.5 million workers whose jobs are disrupted due to COVID-19 remain on the job but with fewer hours and lower wages, thus pushing many of them into working poverty. The pre-COVID estimates of working poverty in Thailand are those published by the ILO in its employment by economic class series as of January 2020. The revised scenario (post-COVID) is one in which we inflate the categories of the working poor by 2.5 million (based on the assumption that two-thirds of the disrupted 7.5 million continue working, and of these, half are working in the informal economy and will find themselves struggling to earn an income above the US$5.50 a day poverty threshold. In the revised scenario, the share of workers living extreme poverty (on less than US$1.90 a day) increased from 0 to 2.1 per cent of total employment. The share of workers in moderate poverty (earning between US$1.90 and US$3.20 a day) could increase from 0.1 to 2.3 per cent and the near poor workers (earning between US$3.20 and US$5.50 a day) could increase from 4.6 to 6.8 per cent. In total, **the three categories of working poverty together could see an increase from 4.7 to 11.2 per cent of total employment in Thailand this year, (and this is likely to be a conservative estimate)**.

Regardless of the exact numbers and share of working poverty, there is no doubt that **one of the main impacts of the COVID-19 on the labour market in Thailand will be an increase in working poverty as the volume of work measured in terms of hours falls along with the declining economic activities**.

11 Recall, that in Q1 2020, the number of unemployed persons increased by only 34,000 over the number in Q4 2019.

FIGURE 9

Working poverty projections, 2020



Source: Employment by economic class, ILO modelled estimates, Nov. 2019, www.ilo.org/ilostat (pre-COVID-19 estimate) and authors' projections based on the distribution of workers at-risk to COVID-19 disruption.

4. Impact on vulnerable population groups

Job security in terms of fixed contracts and regularly paid salaries has long been a feature of the labour market in Thailand that benefit the few over the many. **As of 2019, nearly half (47.7 per cent) of employment was classified as vulnerable, that is, 18 million workers working in self-employment as own-account workers or contributing (unpaid) family workers**. Yet even for wage earners, many are paid on an hourly or a daily basis and have no guarantee from one day to the next that the work that they do will continue. **There were 6.1 million workers paid hourly or daily in Thailand in 2019 and another 35,000 paid on a weekly basis. As a share of total employment, daily/hourly workers were 16.3 per cent of total employment in 2019**.

The share of employment in the informal economy was 54.3 per cent, totalling about 20 million workers without contributory social protection and entitlements at workplaces, such as paid leave or sick leave (Thailand 2019). As seen in table 3 above, the sectors with the highest shares of informal workers correspond exactly to those deemed most at-risk to disruption during the COVID-19 crisis.

These include accommodation and food services (62.5 per cent in informal employment), wholesale and retail trade (54.8 per cent), transportation, storage and communications (35.7 per cent) and construction (44.5 per cent). Also in the manufacturing sector, one in five workers is working informally.

The daily and hourly workers are concentrated in sectors like construction, agriculture production, food processing, metalworking and cleaning, etc. (table 4). At the height of emergency lockdown measures in Thailand from 25 March through end of May, informal sector activities were operating at a much more limited scale. The usual bustling streets of Bangkok with their mazes of street vendors, massage parlours, tuk-tuk drivers, restaurants and bars were ghostly quiet. We, therefore, expect to see some increase in unemployment and underemployment among the more precarious workers, and more importantly, a large negative impact on incomes for those who were still operating in the services sector due to the circulation of fewer customers.[12] The COVID-19 impact to these workers should be much more visible in the second quarter results of the labour force survey, compared to what was found in the first quarter.

TABLE 4

Ten occupations with largest shares of hourly and daily paid workers, 2019, and change in employment from Q1 2019 to Q1 2020

Occupation	Employed ('000)	Share of hourly/daily workers in occupation (%)	Change in employment ('000)	Change in employment (%)
Labourers in mining, construction, manufacturing and transport	1,472.8	74.9	-70.6	-4.5
Agricultural, forestry and fishery	1,013.7	70.0	-219.8	-16.1
Building and related trades workers	1,140.8	65.2	-21.4	-1.8
Refuse workers and other elementary occupations	593.5	59.1	-75.2	-12.0
Stationary plant and machine operators	1,403.0	48.6	-33.7	-2.3
Food preparation assistants	102.2	47.5	14.5	14.3
Assemblers	587.2	34.3	-59.6	-10.0
Cleaners and helpers	699.6	30.2	22.7	3.1
Metal, machinery and related trades workers	984.9	26.2	51.1	5.2
Food processing, wood working, garment and other craft and related trades workers	1,168.8	24.3	-61.7	-5.0

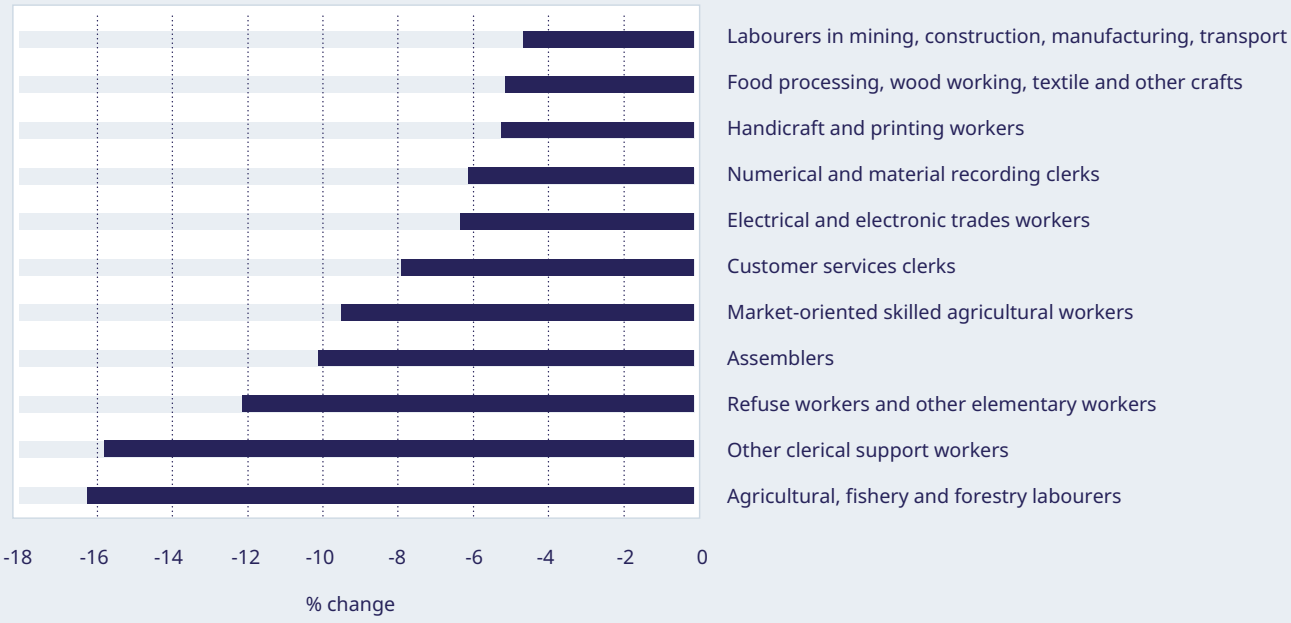
Source: ILO assessment based on Thailand National Statistics Office, Labour Force Survey data, 2019 and 2020.

12 Although to a certain extent, the loss of foot customers can be compensated by an increase in online customers.

The ten occupations with the highest shares of daily and hourly workers saw a reduction of 454,000 persons employed between the first quarter 2019 and first quarter 2020. Figure 10 shows the occupational groupings that saw the number of persons employed decrease by 5 per cent or more over the period. The occupations that saw the greatest decrease are those in agriculture (consistent with the employment by sector data presented above), but also what are primarily low-skilled workers doing clerical work including customer service, refuse workers and other elementary occupations, assemblers, handicraft workers and persons in the electrical and electronic trades. Only agricultural workers and assemblers overlap to the list above of occupations with large shares of daily and hourly workers.

FIGURE 10

Occupations experiencing a decline in persons employed of more than 5 per cent, Q1 2019 to Q1 2020 (% change)



Source: ILO assessment based on Thailand National Statistics Office, Labour Force Survey data, 2019 and 2020.

The reduction of daily/hourly workers was greater than the overall reduction of workers for all the occupational categories of table 4 but agricultural, forestry and fishery workers, refuse workers and other elementary occupations, stationary plant and machine operators and assemblers. This implies that it could indeed be the more precarious daily and hourly workers who are first affected with job loss in the early days of the COVID-19 pandemic (although we cannot directly correlate the decreases in these occupations to COVID-19).

Another comparison can be made to the occupations that have the lowest shares of workers on daily/hourly wages. Within the same period (Q1 2019 to Q2 2020), the occupations with less than 5 per cent of workers paid daily or hourly saw an increase of 386,000 persons. **The most sizable increase in occupations over the period goes to health professionals, which increased by 18 per cent over the last year**. From Q4 2019 through Q1 2020, the health profession added 20,500 persons, with most recruits likely to have been brought on board in the fight against COVID-19.

The wage data from the labour force survey do not yet show anything conclusive regarding lost earnings due to the COVID-19 lockdown, and while there is some evident decreases in hours worked, this is showing up more among workers in the manufacturing sector than in the market services sector, where more informal workers are located. From April, we will expect the data to demonstrate an increase in working poverty among informal workers, recalling from section 3 (figure 9) that the share of workers in the categories of working poverty (extreme, moderate and near poverty categories) is projected to increase from 4.7 to 11.2 per cent this year. Recall also the estimate of the ILO Monitor (3rd edition) that expects the earnings of informal workers in the region to have already declined by approximately one third. Unfortunately, it is likely that those who were already in the more precarious circumstances will be those who suffer the worst of the COVID-19 economic impact.

The crisis has also exacerbated the challenges faced by migrant workers in Thailand. As lockdown measures in Thailand tightened, many migrant workers attempted to move back to their home countries under the understanding that remaining in Thailand means no job, no income, no access to health care and risk of food shortages and homelessness. With many migrant workers from neighbouring Cambodia, Laos People's Democratic Republic and Myanmar, some found themselves stuck at border crossings. At the same time, Thai migrants outside of the country often faced difficulties returning to the country given the border closures and international flight bans.

ILO (2020f and 2020g) discuss the difficult plight of migrant workers in Thailand as they struggle to avoid infection – in some cases despite the lack of protection provided by employers – and to maintain some income as opportunities become more and more limited. While migrant workers have the same right to access social security as Thai workers including health care and paid sick leave, in reality many are excluded. This includes migrants working in the informal sectors (including domestic work, agriculture, and fishing) and undocumented migrant workers. If workers in these groups were to become sick, they might not seek medical support due to the costs involved and the fear of engaging with authorities.

5. Conclusions and looking ahead

The health impact of COVID-19 in Thailand has been comparatively small, with just over 3,000 infections in early June 2020. Nonetheless, the COVID-19 related impact on the economy through both direct (generated by domestic lockdown) and indirect (supply and demand shocks in supply chains, including tourism) channels are likely to be severe. There are signals of the disruptions in the world of work in the first quarter 2020, but we can expect to see deeper and broader deterioration in both economic and labour market indicators over the next months.

The sectors that are most at risk to experience a significant (medium or high) reduction in economic output as a result of the COVID-19 crisis employed nearly 21 million of 37 million workers in 2019. One sector thought to be most at risk in Thailand – or at least certain industries within the sector – is the manufacturing sector, given its dependency on global supply chains. Other at-risk sectors are labour intensive and employ millions of often low-paid, low-skilled workers, particularly in the case of accommodation and food services and retail trade.

The ILO estimates that between 6.6 and 7.5 million jobs are likely to face disruption in the current crisis, either with decreased working hours and wages or complete job loss. In total, 3.7 million jobs held by women (22 per cent of the 2019 female workforce) are estimated as at risk in the higher impact scenario, compared to a nearly equal number (3.7 million) jobs for men (also 22 per cent of the 2019 male workforce).

From the fourth quarter 2019 to first quarter 2020, already there has been an increase of 43,000 unemployed persons, a decline of 101,000 persons employed and an increase of 126,000 in the number of persons outside the labour market based on the national labour force survey. **Workers in the informal economy are those most severely affected due to their lack of income security. Already, the ten occupations with the highest shares of daily and hourly workers saw a reduction of 435,000 persons employed between the first quarter 2019 and first quarter 2020**. The occupations that saw the greatest decrease are those in agriculture (which could be a seasonal effect), but also low-skilled workers doing clerical work including customer service, refuse workers and other elementary occupations, assemblers, handicraft workers and persons in the electrical and electronic trades.

The average hours of work in Thailand have declined in the first quarter of 2020, which fits to the ILO estimation that enterprises first attempt to cope with the COVID-19 impact by reducing the hours of employees. The biggest declines occurred in some sub-sectors of manufacturing, including machinery, computer, motor vehicles, and other transport equipment. The reduction in hours of work in certain manufacturing sub-sectors seem to be related to the import-dependent global value chains. As the national lockdown in Thailand began in full in early April, the hours of work of own-account workers who earn their livelihoods through the retail sector (street vendors, etc.) are also expected to see a sharp decline from the second quarter.

Another early sign of the impact of the COVID-19 crisis might be the strong increase in the number of employed persons who are temporarily absent from work during the first quarter 2020. The COVID-19 crisis can provide many reasons for a worker to remain employed yet be absent from work, such as workplace closures, quarantine measures or sickness. The sectors showing the most sizable increases in the number of "employed but temporarily absent" persons are those in other services, arts, entertainment and recreation, professional, scientific and technical activities, administrative and support services, and also workers in the manufacturing sector.

The unprecedented nature of the COVID-19 pandemic as a health and economic shock makes it difficult to predict its developments by means of comparison with any past crises. While the IMF estimates a devastating 6.7 per cent contraction of economic growth in Thailand in 2020, **the actual extent of livelihood loss will depend on the continuing evolution of the pandemic and on the effectiveness of the measures taken by the government to stimulate the economy, sustain enterprises and protect livelihoods**. The magnitude of the task of government mitigation measures calls for integrated responses including: measures to stimulate the economy and employment; support to enterprises, jobs and incomes for the months to come; protecting workers in the workplace; and relying on social dialogue for solutions (figure 11).

FIGURE 11

ILO four key pillars for a COVID-19 policy response

Source: ILO (2020a).

Thailand has been quick in the design of its COVID-19 stimulus and relief measures, but as the crisis lengthens questions are likely to arise on the effectiveness of measures to reach the most vulnerable, and also on the capacity of the government to sustain its fiscal expansion. Details of the government responses are made available on the ILO website of country response and are therefore not repeated here.[13] Separate notes are also available in relation to what Thailand (along with other countries) is doing in the area of social protection (ILO 2020h, 2020i).

In times of crisis, the needs faced by employees and self-employed differ. The policy responses will need to differ as well, targeting the specific needs of each group. For the self-employed, it is about supporting the regular cash flows, whether on a monthly or weekly basis. If the self-employed could no longer work (e.g. their shops are ordered to close) or face a drastic reduction in demand (e.g. taxi drivers as people are told not to move around), it will not be possible to pay regular rent or fees, salary of hired workers or repay debt instalments on time. For those who are no longer employed, looking for an alternative job may not be an option when the businesses are closed and people are told to stay immobile.

For employees, concerns include whether they would be able to return to their jobs once the lockdown measures are eased, whether or not they are paid during the work stoppage period and at what percentage. If their wages are reduced, employees, like the self-employed, may face challenges to meet their living costs. The length of the queues at the numerous free food distribution spots that are popping up around the country are a clear sign that many persons in Thailand are finding it difficult to sustain themselves and their families during this period.

Governments around the world are finding that it is no easy matter to find the right balance between caution in the protection of national health and the re-opening of economic activities. While the peaks of infections may be over in many countries across the world some time during the first half of 2020 (assuming no second waves of infections), the spread of COVID-19 is unlikely to subside completely in the near future. Treatment drugs may become available sometime during the middle of the year, but there are still many uncertainties about their effectiveness, and also concerns over side effects. Even when effective treatments become more widespread, a "return to normal" when it comes to the movement of people, consumption and production of goods and services is bound to take some time. Even as the Thailand government allows certain business to re-open under precautionary measures from early May, it is clear that not all businesses will be able to fully operate in the near future.

The following are some specific guidance to consider as the country moves away from its immediate support objectives to its mid- to long-term COVID-19 recovery phases:

- **Identify occupations and sectors that face an increase in demand.** Upon casual observation, the distribution industries, including delivery services, face increased demand for workers. Whether the increased demand for the same services during lockdown period will sustain itself can be questioned, but some portion of the increased demand will likely stay. Identifying occupations and services where there has been a rising demand for workers may be an early indication for policies to facilitate transitions of workers toward such occupations or subsectors.

13 The policy response measures taken in Thailand in response to COVID-19 are available on website: https://www.ilo.org/global/topics/coronavirus/country-responses/lang--en/index.htm#TH. Information is updated regularly.

- **Identify occupations and sectors that may not immediately return to normal.** The transmission mechanism of COVID-19 is increasingly well understood. Even if some services reopen, customers may be reluctant to use such services for fear of contagion. Many sectors will require clear guidelines to the service providers and users about practices that can minimize the risk of contagion needs. At the same time, policymakers need to be prepared for some, if not many, enterprises to go out of business in the coming months, which includes readiness with income support to the newly unemployed.
- **Protecting against future shocks.** Thailand's vulnerability to demand-side shocks are partially behind its expected severe economic contraction in 2020. In steering the recovery period, there is scope to re-assess the country's economic and labour market structure. Risk dispersion usually involves structural diversification, whether in trade or production relationships. Some of the more shock-resistant economies are usually characterized by the dominance of its domestic economy, and building a balanced or a strategic partnership with the external economy. The current crisis re-invites policymakers in Thailand to re-focus on the importance of strengthening its domestic economy, including consumption, production and a focus on local linkages.
- **Reducing inequalities.** The COVID-19 crisis adds significantly to existing vulnerabilities and inequalities. In the recovery phase, greater attention should be paid to strengthening employment policies to support enterprises and workers, along with strong labour market institutions and comprehensive and well-resourced social protection systems. Only by promoting a job-rich recovery will inequalities be lessened and inclusive and sustainable post-COVID era of growth made possible.

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Annex I: Methodology note

The number of jobs vulnerable to disruption as a result of the COVID-19 crisis is estimated by using a two-step process. First, we assess the level of expected impact to economic output in each sector in a manner similar to that used for the ILO global analysis in its *ILO Monitor on COVID-19 and the world of work* (latest available is third edition; ILO (2020a)). As a second step, we estimate the share of jobs at risk within each impacted sector.

To complete the first step, we examine economic sectors based on the International Standard Industrial Classification of All Economic Activities (ISIC), Revision 4, at level 2 of disaggregation. As a measure to evaluate the indirect impact on each sector, we looked at the composition of exports in the country and associated macroeconomic indicators related to production of goods and services in the trade-related sectors. We combine this information with data from the Oxford COVID-19 Government Response Tracker, which ranks the stringency of social distancing measures implemented by Governments in 144 countries and territories. Using the information on hand, we apply a rating of low, medium and high risk of economic disruption (see table 2 for 1-digit aggregated results and detailed results in Annex table 1).

The term "at risk sector" in this context is adapted from the term applied first in the *ILO Monitor 2nd edition.* In the Monitor, the assessment of the impact of the crisis on economic output by different sectors is based on real-time economic and financial data. A similar approach is applied here, but at the country level only and applying the risk assessment at the 2-digit level.

As a next step, we assign coefficients representing low and high level of economic output reduction to each sector. We applied a lower- and higher-risk scenario with differences in the coefficients multiplied by the number of persons employed in the detailed sector to generate a range of workers impacted. The employment data used are the 2019 annual average of the quarterly Labour Force Survey produced by the National Statistics Office of Thailand.

Annex table 1

COVID-19 disruption risk assessment for employment in Thailand at the 2-digit sector level

2-digit ISIC code	Risk assessment	2-digit ISIC code	Risk assessment
01 Crop and animal production, hunting and related service activities	Low	16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	Medium
02 Forestry and logging	Low	17 Manufacture of paper and paper products	Low
03 Fishing and aquaculture	Low	18 Printing and reproduction of recorded media	Low
06 Extraction of crude petroleum and natural gas	Low	19 Manufacture of coke and refined petroleum products	Medium
07 Mining of metal ores	Low	20 Manufacture of chemicals and chemical products	Medium
08 Other mining and quarrying	Low	21 Manufacture of pharmaceuticals, medicinal chemical and botanical products	Medium
09 Mining support service activities	Low	22 Manufacture of rubber and plastics products	Medium
10 Manufacture of food products	Medium	23 Manufacture of other non-metallic mineral products	Medium
11 Manufacture of beverages	Medium	24 Manufacture of basic metals	Medium
12 Manufacture of tobacco products	Low	25 Manufacture of fabricated metal products, except machinery and equipment	Medium
13 Manufacture of textiles	Medium	26 Manufacture of computer, electronic and optical products	Medium
14 Manufacture of wearing apparel	Low	27 Manufacture of electrical equipment	Medium
15 Manufacture of leather and related products	Medium	28 Manufacture of machinery and equipment n.e.c.	Medium

Continue on next page ▸

Annex table 1. (cont.)

2-digit ISIC code	Risk assessment	2-digit ISIC code	Risk assessment
29 Manufacture of motor vehicles, trailers and semi-trailers	Medium	66 Activities auxiliary to financial service and insurance activities	Low
30 Manufacture of other transport equipment	Medium	68 Real estate activities	Medium
31 Manufacture of furniture	Medium	69 Legal and accounting activities	Low
32 Other manufacturing	Medium	70 Activities of head offices; management consultancy activities	Low
33 Repair and installation of machinery and equipment	Low	71 Architectural and engineering activities; technical testing and analysis	Low
35 Electricity, gas, steam and air conditioning supply	Low	72 Scientific research and development	Low
36 Water collection, treatment and supply	Low	73 Advertising and market research	Low
37 Sewerage	Low	74 Other professional, scientific and technical activities	Low
38 Waste collection, treatment and disposal activities; materials recovery	Low	75 Veterinary activities	Medium
41 Construction of buildings	Medium	77 Rental and leasing activities	Medium
42 Civil engineering	Low	78 Employment activities	Medium
43 Specialized construction activities	Medium	79 Travel agency, tour operator, reservation service and related activities	High
45 Wholesale and retail trade and repair of motor vehicles and motorcycles	Medium	80 Security and investigation activities	Low
46 Wholesale trade, except of motor vehicles and motorcycles	Medium	81 Services to buildings and landscape activities	Low
47 Retail trade, except of motor vehicles and motorcycles	High	82 Office administrative, office support and other business support activities	Low
49 Land transport and transport via pipelines	Low	84 Public administration and defence; compulsory social security	Low
50 Water transport	High	85 Education	Low
51 Air transport	High	86 Human health activities	Low
52 Warehousing and support activities for transportation	High	87 Residential care activities	Low
53 Postal and courier activities	Low	88 Social work activities without accommodation	Low
55 Accommodation	High	90 Creative, arts and entertainment activities	Medium
56 Food and beverage service activities	Medium	91 Libraries, archives, museums and other cultural activities	Medium
58 Publishing activities	Low	92 Gambling and betting activities	Medium
59 Motion picture, video and television programme production, sound recording and music publishing activities	Medium	93 Sports activities and amusement and recreation activities	High
60 Programming and broadcasting activities	Medium	94 Activities of membership organizations	Medium
61 Telecommunications	Low	95 Repair of computers and personal and household goods	Low
62 Computer programming, consultancy and related activities	Low	96 Other personal service activities	Low
63 Information service activities	Low	97 Activities of households as employers of domestic personnel	Medium
64 Financial service activities, except insurance and pension funding	Medium	99 Activities of extraterritorial organizations and bodies	Low
65 Insurance, reinsurance and pension funding, except compulsory social security	Medium		