



▶ ILO Monitor 2nd edition: COVID-19 and the world of work Updated estimates and analysis

7 April 2020

Key messages

- ▶ Since the first ILO Monitor, the COVID-19 pandemic has further accelerated in terms of intensity and expanded its global reach. Full or partial lockdown measures are now affecting almost 2.7 billion workers, representing around 81 per cent of the world's workforce.
- ▶ In the current situation, businesses across a range of economic sectors are facing catastrophic losses, which threaten their operations and solvency, especially among smaller enterprises, while millions of workers are vulnerable to income loss and layoffs. The impact on income-generating activities is especially harsh for unprotected workers and the most vulnerable groups in the informal economy.
- ▶ Employment contraction has already begun on a large (often unprecedented) scale in many countries. In the absence of other data, changes in working hours, which reflect both layoffs and other temporary reductions in working time, give a better picture about the dire reality of the current labour market situation.
- ▶ Using this approach, as of 1 April 2020, the ILO's new global estimates indicate that working hours will decline by 6.7 per cent in the second quarter of 2020, which is equivalent to 195 million full-time workers.
- ▶ The final tally of annual job losses in 2020 will depend critically on the evolution of the pandemic and the measures taken to mitigate its impact. For this reason, the ILO will continue to monitor the situation and regularly update its estimate of working hours lost and equivalent employment loss.
- ▶ The majority of job losses and declining working hours will occur in hardest-hit sectors. The ILO estimates that 1.25 billion workers, representing almost 38 per cent of the global workforce, are employed in sectors that are now facing a severe decline in output and a high risk of workforce displacement. Key sectors include retail trade, accommodation and food services, and manufacturing.
- ▶ Particularly in low- and middle-income countries, hard-hit sectors have a high proportion of workers in informal employment and workers with limited access to health services and social protection. Without appropriate policy measures, workers face a high risk of falling into poverty and will experience greater challenges in regaining their livelihoods during the recovery period.
- ▶ Those who continue to work in public spaces, in particular health workers, are exposed to significant health and economic risks. In the health sector, this affects women disproportionately.
- ▶ Indeed, no matter where in the world or in which sector, the crisis is having a dramatic impact on the world's workforce. Policy responses need to focus on providing immediate relief to workers and enterprises in order to protect livelihoods and economically viable businesses, particularly in hard-hit sectors and developing countries, thus ensuring the conditions for a prompt, job-rich recovery once the pandemic is under control.
- ▶ Limited public resources need to be used to encourage enterprises to retain and/or create jobs.

Context: Worsening crisis with devastating effects on the world of work

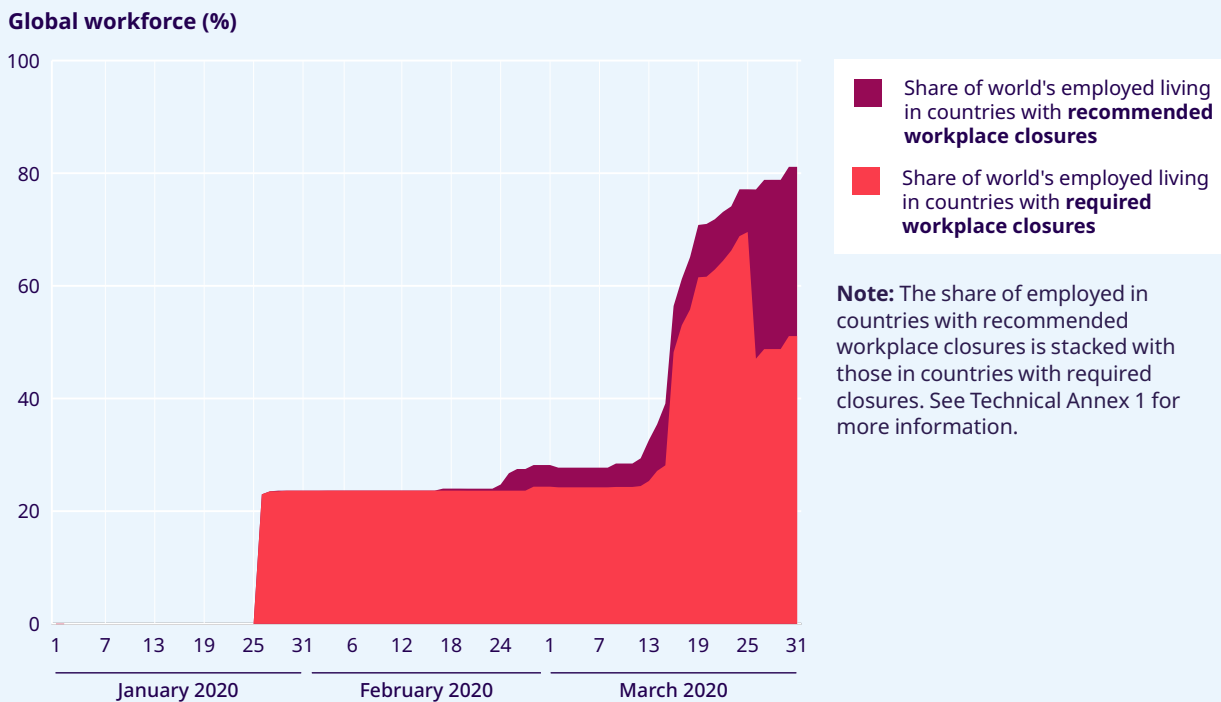
During the past two weeks, the COVID-19 pandemic has intensified and expanded in terms of its global reach, with huge impacts on public health and unprecedented shocks to economies and labour markets. It is the worst global crisis since the Second World War. Since the ILO’s preliminary assessment of 18 March, global COVID-19 infections have risen more than six-fold and stood at 1,030,628 on 3 April 2020; an additional 47,600 people have lost their lives, bringing the total number of deceased to 54,137.¹ Many countries have initiated social distancing policies to slow the virus’s spread, with the aim of avoiding catastrophic outcomes for national health systems and minimizing lives lost.

Lockdowns and related business disruptions, travel restrictions, school closures and other containment measures have had sudden and drastic impacts on workers and enterprises. ILO estimates show that

workplace closures have increased so rapidly in recent weeks that 81 per cent of the global workforce lives in countries with mandatory or recommended closures (figure 1). Employment in countries with mandatory or recommended workplace closures represents 87 per cent of the workforce of upper-middle-income countries and 70 per cent of the workforce in high-income countries. COVID-19 is now also impacting the developing world, where capacities and resources are severely constrained.

Through the massive economic disruption, the COVID-19 crisis is affecting the world’s workforce of 3.3 billion. Sharp and unforeseen reductions in economic activity are causing a dramatic decline in employment, both in terms of numbers of jobs and aggregate hours of work. Economic activity across whole sectors has been severely curtailed in many countries, leading to steep declines in revenue streams for many businesses. With increasing numbers of partial or total lockdowns in place that restrict operations of business and movement of the vast majority of workers, for many it has become impossible to work; others have experienced

► **Figure 1. Employment in countries with workplace closures**



Source: ILOSTAT, ILO modelled estimates, November 2019 and The Oxford COVID-19 Government Response Tracker

¹ Johns Hopkins University Center for Systems Science Engineering; <https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6>

dramatic alterations in their methods of work. The interventions have severely affected many service sector activities (accommodation and food services, retail trade, etc.), while manufacturing is experiencing disruptions along supply chains (e.g. the automobile sector) and sharp drops in demand for goods.

The employment impacts of COVID-19 are deep, far-reaching and unprecedented. Employment adjustment typically follows economic contraction with some delay (see, for example, the increase in the unemployment rate following the global financial crisis in 2009). In the current crisis, employment has been impacted directly as a result of lockdowns and other measures and on a greater magnitude than initially predicted at the start of the pandemic, including when the first ILO Monitor was prepared. For this reason, this second Monitor presents new global, regional and sectoral estimates that aim to capture the effect of the crisis as it stands at present (particularly in terms of the effects of the containment measures). Nonetheless, uncertainty around the further evolution of the crisis implies that these updated estimates stand as the best possible indications of the **current impact** on labour markets based **on available data**.

The most severe crisis since the Second World War: Employment losses are rising rapidly around the world

To more accurately capture the current features of the COVID-19 crisis, the ILO methodology for generating global estimates has been revised to provide updated figures on the impact on the labour market. The latest estimates are based on a new ILO “nowcasting” model, which relies on real-time economic and labour market data to predict the loss in working hours in the second quarter of 2020 (on the basis of data available on 1 April) (see Technical annex 2 for more details on the methodology).

The global estimates from the ILO’s nowcasting model show that the crisis is causing an unprecedented reduction in economic activity and working time. As of 1 April 2020, estimates indicate that working hours will decline in the current quarter (Q2) by around 6.7 per cent, which is equivalent to **195 million full-time workers (assuming a 48-hour working week).**² This implies that many of these workers will face a loss of income and deeper poverty,

even if substitute activities can be found (e.g. returning to agriculture in rural areas). The largest decline is expected in upper-middle-income countries, but the impact is comparable across all income groups.

► **Table 1. Crisis is leading to a severe decline in working hours and employment (FTE)**

	Decline in working hours (%)	Full-time equivalent (40 hours, million)	Full-time equivalent (48 hours, million)
World	6.7	230	195
Low income	5.3	14	12
Lower-middle income	6.7	80	70
Upper-middle income	7.0	100	85
High income	6.5	36	30
Africa	4.9	22	19
Americas	6.3	29	24
Arab States	8.1	6	5
Asia and the Pacific	7.2	150	125
Europe and Central Asia (Europe)	6.0	24	20
	7.8	15	12

Note: (1) Magnitudes above 50 million are rounded to the nearest 5 million, magnitudes below that threshold are rounded to the nearest million; (2) 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 remaining workers did not experience any hour reduction. The figures should not be interpreted as numbers of jobs actually lost nor increases in unemployment. See Technical annex 2 for full details of the estimation methods.

The eventual increase in global unemployment over 2020 will depend substantially on how quickly the economy will recover in the second half of the year and how effectively policy measures will boost labour demand. As it stands, there is a

² Given the widespread use of measures that allow workers to retain their jobs, the increase in the reported unemployment levels is likely to be lower than 195 million.

high risk that the increase in the global number of unemployed at the end of 2020 will be significantly higher than the initial projection (25 million) in the ILO's first Monitor. The production losses for many enterprises are also likely to be devastating and long-lasting, especially in developing countries where the fiscal space for economic stimulation is restricted.

Beyond unemployment: Work at risk

Through the massive economic disruption and impact on working hours, the COVID-19 crisis is affecting the world's workforce of 3.3 billion.

However, the shock to the labour market is far from uniform, with specific sectors bearing the brunt of the collapse in economic activity.

Sectors most at risk

Many of those still working, especially health workers, are at the frontline, fighting the virus and making sure that people have their basic needs met, including workers in transport, agriculture, and essential public services. Globally, there are **136 million workers** in human health and social work activities, including nurses, doctors and other health workers, workers in residential care facilities and social workers, as well as support workers, such as laundry and cleaning staff, who face serious risk of contracting COVID-19 in the workplace. Approximately 70 per cent of jobs in the sector are held by women.

Based on real-time economic and financial data, the impact of the crisis on economic output can be assessed at the sectoral level (with limitations to disaggregation due to available global data). Drawing from this assessment, a number of key economic sectors can be identified as suffering from a drastic fall in output, including accommodation and

► Table 2. Workers at risk: Sectoral perspective

Economic sector	Current impact of crisis on economic output	Baseline employment situation (global estimates for 2020 prior to COVID-19)			
		Level of employment (000s)	Share in global employment (%)	Wage ratio (av. monthly sector earnings/av. total earnings)	Share of women (%)
Education	Low	176560	5.3	1.23	61.8
Human health and social work activities	Low	136244	4.1	1.14	70.4
Public administration and defence; compulsory social security	Low	144241	4.3	1.35	31.5
Utilities	Low	26589	0.8	1.07	18.8
Agriculture; forestry and fishing	Low-Medium*	880373	26.5	0.72	37.1
Construction	Medium	257041	7.7	1.03	7.3
Financial and insurance activities	Medium	52237	1.6	1.72	47.1
Mining and quarrying	Medium	21714	0.7	1.46	15.1
Arts, entertainment and recreation, and other services	Medium-high*	179857	5.4	0.69	57.2

Transport; storage and communication	Medium-high*	204217	6.1	1.19	14.3
Accommodation and food services	High	143661	4.3	0.71	54.1
Real estate; business and administrative activities	High	156878	4.7	0.97	38.2
Manufacturing	High	463091	13.9	0.95	38.7
Wholesale and retail trade; repair of motor vehicles and motorcycles	High	481951	14.5	0.86	43.6

Note: ILO's assessment of real-time and financial data and ILOSTAT baseline data on global estimates of sectoral distribution of employment (ISIC Rev. 4). See Technical annex 3 for further details.

* denotes sectors that include subsectors that have been affected in different ways.

food services, manufacturing, wholesale and retail trade, and real estate and business activities (table 2). These 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 economic risks will be felt particularly hard by workers in these sectors.

These sectors employ 1.25 billion workers around the world, representing almost 38 per cent of the global workforce. Depending on the country context, these workers are facing a drastic and devastating reduction in working hours, wage cuts and layoffs, and are likely to form the bulk of the estimates from the nowcasting model presented above.

Of the economic sectors most affected, the wholesale and retail trade segment represents the largest share of workers, who are typically low paid and unprotected. This group of **482 million** workers includes, among others, checkout clerks, stockers, shopkeepers and workers in related jobs. Workers in this sector who are engaged in activities deemed essential (e.g. food distribution) may continue to work, but they face greater occupational health risks. Workers in non-essential businesses face widespread closures and sharp reductions in employment and hours.

The accommodation and food services sector is also severely affected, accounting for 144 million workers. This sector is suffering from almost full closure in some countries and a steep decline in demand in cases where operations can continue. More than half of these workers are women.

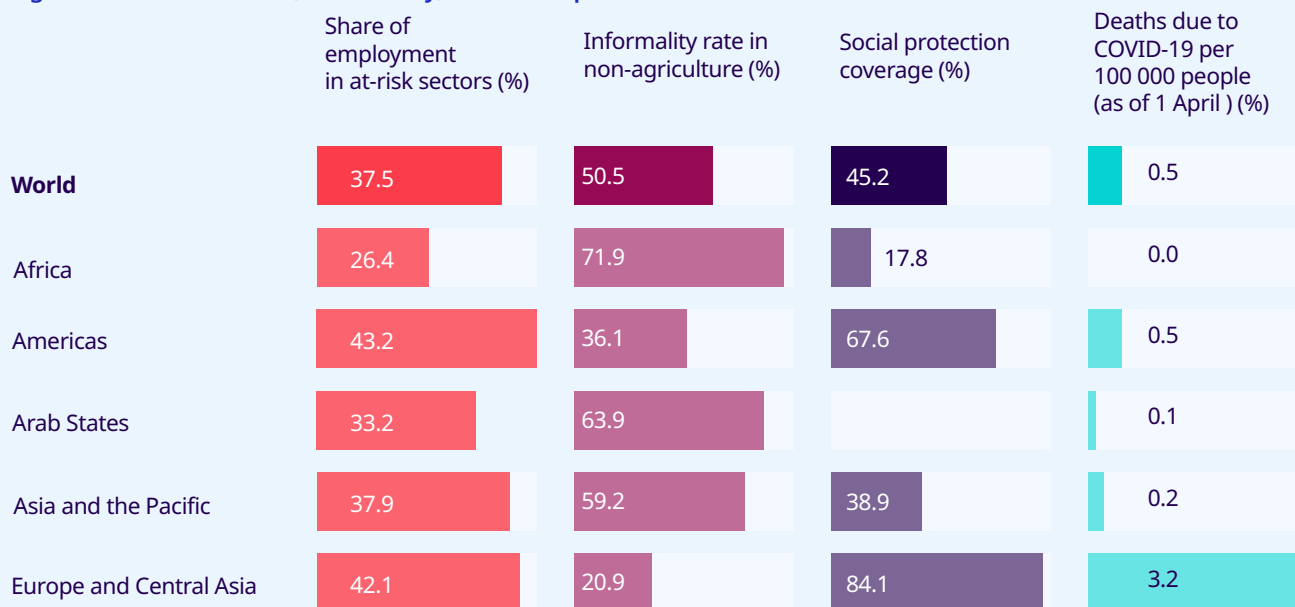
The manufacturing sector, which employs 463 million workers, has been hit hard in some segments, as workers are told to stay at home, factories close, and global supply chains grind to a halt. Quarantine measures, closure of retail stores, cancelled orders and salary reductions are suppressing demand in key industries such as automobiles and textiles, clothing, leather and footwear.

The transport, storage and communication industry accounts for 204 million jobs around the world, including airline pilots and crew members, drivers, postal and other delivery workers, as well as people who work in warehouses that support transport and global supply chains. While some of these workers are negatively affected (e.g. those in the airline industry), others continue to meet the increased demand for online retail.

Although the economic impact has not yet been felt in agriculture, the largest sector in most of developing countries, risks of food insecurity are emerging due to containment measures, including border closures. Over time, workers in this sector may be increasingly impacted, particularly if the virus spreads further into rural areas.

In terms of regional differences, the share of employment in at-risk sectors varies from 26.4 per cent in Africa to 43.2 per cent in the Americas. However, other regions have higher shares of informality, particularly Africa, with lower levels of social protection coverage. Though these regions do not yet have high death rates due to COVID-19, the virus is currently spreading rapidly in

► **Figure 2. Workers at risk, informality, and social protection**



Note: Sectors considered at high risk of disruption are accommodation and food service activities; manufacturing; real estate, business and administrative activities; and wholesale and retail trade, repair of motor vehicles and motorcycles.

Source: ILOSTAT, ILO modelled estimates, November 2019; ILO, *World Social Protection Report 2017-19*; ILO, *Women and men in the informal economy: A statistical picture*, Third edition; and European Centre for Disease Prevention and Control.

a number of developing countries where the nexus between informality, weak capacity and high-density populations poses severe health and economic challenges for governments.

The sectoral analysis shows that not all sectors and not all types of workers are equally affected. It also shows that many of those most affected are those who are already low-wage workers and have less access to social protection coverage. As such, this can have a further negative impact on already existing inequality.

Workers in the informal economy

Around 2 billion people work informally,³ most of them in emerging and developing countries. The informal economy contributes to jobs, incomes and livelihoods, and in many low- and middle-income countries it plays a major economic role. However, informal economy workers lack the basic protection that formal jobs usually provide, including social protection coverage. They are also disadvantaged in access to health-care services and have no income replacement if they stop working in case of sickness. Informal workers in urban areas also tend to work

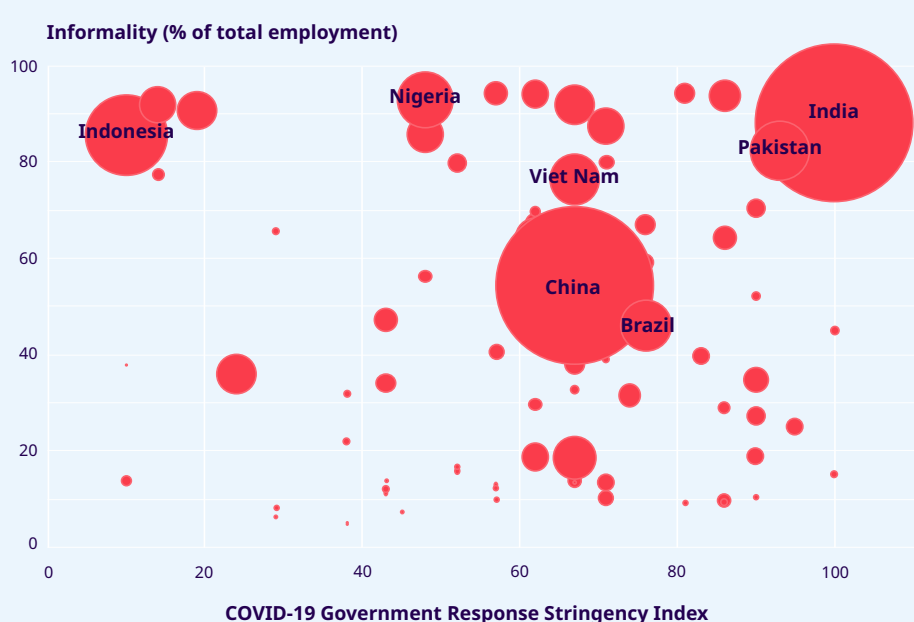
in economic sectors that not only carry a high risk of virus infection but are also directly impacted by lockdown measures; this concerns waste recyclers, street vendors and food servers, construction workers, transport workers and domestic workers.

COVID-19 is already affecting tens of millions of informal workers. In India, Nigeria and Brazil, the number of workers in the informal economy affected by the lockdown and other containment measures is substantial (figure 3). In India, with a share of almost 90 per cent of people working in the informal economy, about 400 million workers in the informal economy are at risk of falling deeper into poverty during the crisis. Current lockdown measures in India, which are at the high end of the University of Oxford’s COVID-19 Government Response Stringency Index, have impacted these workers significantly, forcing many of them to return to rural areas.

Countries experiencing fragility, protracted conflict, recurrent natural disasters or forced displacement will face a multiple burden due to the pandemic. They are less equipped to prepare for and respond to COVID-19 as access to basic services, especially health and sanitation, is limited; decent

³ The term “informal economy” refers to all economic activities by workers and economic units that are – in law or in practice – not covered or insufficiently covered by formal arrangements. This includes wage workers without social protection or other formal arrangements in both informal and formal sector enterprises, own-account workers such as street vendors and domestic workers.

► **Figure 3. Informal workers under lockdown and other containment measures**



Note: The horizontal, x-axis of this chart displays University of Oxford's COVID-19 Government Response Stringency Index. The vertical, y-axis shows informal employment as a share of total employment in the respective country, based on internal ILO calculations. As a third dimension, the respective size of each bubble shows the relative size of total informal employment in each country, which is calculated by multiplying the percentage of informal employment (i.e. the value shown on the y-axis) by total employment as per ILOSTAT's modelled estimates for 2020. See Technical annexes 1 and 3 for further details.

work, social protection and safety at work are not a given; their institutions are weak; and social dialogue is impaired or absent.

Policy responses

The first ILO Monitor on COVID-19 stressed the following messages, which continue to be relevant at this stage of the crisis:

- International Labour Standards provide a strong foundation for key policy responses.
- Policy responses should focus on two immediate goals: health protection measures and economic support on both the demand and supply sides.
- Large-scale and integrated measures across all policy areas are necessary to make strong and sustained impacts.
- Building confidence through trust and dialogue is crucial in making policy measures effective. This includes leveraging social dialogue to finetune policy packages so that they best serve those most in need.
- Policy responses need to consider four pillars:

Pillar 1: Stimulating the economy and employment

Pillar 2: Supporting enterprises, jobs and incomes

Pillar 3: Protecting workers in the workplace

Pillar 4: Relying on social dialogue for solutions

In addition to these messages, the estimates in this Monitor indicate the need for:

- Immediate support for most-affected sectors and population groups, particularly for enterprises and workers operating in the informal economy. Specific and targeted measures are needed in countries with high levels of informality, including cash transfers to support those who are most affected by the lockdown and repurposing production to provide alternative employment (e.g. for PPE kits). This needs to be supplemented by efforts to ensure adequate supply of food and other essentials. Local, community-based initiatives can work quickly and cater for specific needs, and should include representative organizations of those in the informal economy.

► **Figure 4. Policy framework: Four key pillars to fight COVID-19 based on International Labour Standards**



- Along with supporting those in the informal economy, efforts are needed to support formal workers and enterprises to ensure that they do not fall back into informality as a result of the crisis and erode gains made in recent years.
- It is critical to ensure that public resources will be used to support employment and income for workers. Therefore, financial and non-financial support can be strategically provided to encourage enterprises to retain and/or create jobs.
- The relevant mix of economy-wide and targeted measures needs to consider national circumstances, including the structure of the economy, existing inequality trends, and labour market institutions that can best deliver policies. Countries need to find the resources to allow the introduction of direct fiscal stimulus measures to support enterprises and incomes the crisis through policy coherence and whole-of-government approach.

There has been a rapid and historically large policy response. As witnessed around the world, governments are already taking unprecedented actions in response to an unprecedented crisis. Most advanced economies have announced extraordinary measures to fill temporary drops in income and aggregate demand, to ensure adequate levels of social protection and to stabilize credit and financial

markets. Policy action has been swift in many countries, but in others the process remains slow. There are also some questions about the size of the packages, as in some countries they seem too small to serve all needs. As the crisis spreads to low- and middle-income countries, similar (or even greater) responses will be necessary. Immediate relief measures will be needed for enterprises and workers operating in the informal economy. Open trade regimes, stable international capital markets and international liquidity would help shore up those efforts. Humanitarian assistance and international support to respond to the health and labour market crises will be critical to the lowest-income countries where fiscal space and capacities are highly constrained, through access to concessional financing, grants and debt relief, along with immediate access to health supplies and expertise.

The outlook is highly uncertain. Such rapid and wide-reaching developments bring us into uncharted territory in terms of assessing labour market and economic impacts and in forecasting the length and severity of the shock. The current outlook is characterized by extraordinarily high uncertainty regarding both the magnitude of the current shock to economies, the duration of the shock, and the long-term impacts on businesses and labour market prospects. For this reason, real-time monitoring and updating of policy responses is critical for all governments.

► Annexes

Technical annex 1: Worldwide impact of lockdowns

The Oxford COVID-19 Government Response Tracker has information on the social distancing measures implemented by Governments in 79 countries, which collectively represent 81 per cent of the global workforce. Of these, 45 countries currently have a general requirement for workplace closing, applying to the national territory and to all sectors except some essential activities. Required or recommended workplace closures affect at least 70 per cent of workers in high-income countries, and at least 87 per cent of workers in upper-middle-income countries.

Technical annex 2: Methodology to estimate the number of working hours lost

The number of working hours lost is estimated by making use of an ILO nowcasting model. This method uses data that are available almost in real time to predict aggregate hours worked that are published with substantial delay. The resulting estimates are compared to the baseline (the latest available quarter, seasonally adjusted). The data in the nowcasting model include a variety of indicators of economic activity and of the evolution of the labour market.

For the current update, we use the purchasing manager index for the services sector, and the Google trends index on the search terms “unemployment benefits”, “unemployment” and other nationally relevant terms in local languages. Additionally, for Germany, the applications for *Kurzarbeit* (short-time work) are used. Other indicators often used in nowcasting labour market indicators, such as business confidence indicators and administrative data of the labour market, are unfortunately not timely enough at this moment for a sufficient number of countries.

Based on available real-time data, we estimate the historical statistical relationship between these indicators and hours worked, and use the resulting coefficients to predict how hours worked reacts, given the latest observations of the nowcasting indicators. This direct approach is used for 18 countries for which we have relevant indicators. For four countries, the input data for nowcasting were available but not the target variable itself, namely hours worked. In those cases, the coefficients estimated from the rest of the countries were used to produce an estimate.

For the remaining countries, we apply an indirect approach, whereby we extrapolate the relative hours lost from countries with direct nowcasts. The basis for this extrapolation is the index of stringency of COVID-19 containment measures published by the University of Oxford, since countries with comparably stringent restrictions are likely to experience a similar impact on hours worked. Additionally, for countries without data on restrictions, we used the updated incidence of the COVID-19 pandemic in each country to extrapolate the impact on hours. Given the different recording practices of countries in counting cases, we use the more homogenous concept of deceased patients as a proxy for the extent of the pandemic. We compute the variable at an equivalent monthly frequency, but the data are updated daily. The source is the European Centre for Disease Prevention and Control. Finally, for a small number of countries with no readily available data at the estimation time, we use the regional average to impute the target variable. The table below summarizes the information and statistical approach used to estimate the target variable for each country or territory.

Approach	Data used	Model	Reference area
Nowcasting	Google trends, PMI (country level)	Panel data regression	France, United Kingdom, United States
	Google trends, PMI (Eurozone PMI)	Panel data regression	Austria, Belgium, Ireland, Italy, Netherlands, Portugal, Spain
	Google trends, PMI (country level), Short-time work registry	Regression	Germany
	Google trends	Panel data regression	Australia, Mexico, Poland, Republic of Korea, Russian Federation, South Africa, Sweden
Extrapolation based on high-frequency labour market related data	Google trends, PMI (Eurozone PMI)	Panel data regression	Switzerland*
	Google trends, PMI (country level)	Panel data regression	China, Japan
	Google trends	Panel data regression	Canada*
Extrapolation based on containment measures	Containment Stringency	Panel data regression	Afghanistan, Algeria, Angola, Argentina, Barbados, Belize, Bolivia (Plurinational State of), Botswana, Brazil, Bulgaria, Chile, Colombia, Costa Rica, Croatia, Czechia, Democratic Republic of the Congo, Denmark, Dominican Republic, Ecuador, El Salvador, Finland, Greece, Guatemala, Guyana, Honduras, Hong Kong-China, Hungary, Iceland, India, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kazakhstan, Kenya, Macau-China, Malaysia, Myanmar, New Zealand, Nigeria, Nicaragua, Norway, Pakistan, Panama, Papua New Guinea, Qatar, Romania, Rwanda, Serbia, Singapore, Slovakia, Slovenia, Sri Lanka, Syrian Arab Republic, Thailand, Turkey, Uganda, Ukraine, United Republic of Tanzania, Venezuela (Bolivarian Republic of), Viet Nam, Zimbabwe
Extrapolation based on the incidence of COVID-19	COVID-19 incidence proxy, Detailed sub-region	Panel data regression	Albania, Armenia, Azerbaijan, Bahamas, Bahrain, Bangladesh, Belarus, Benin, Bhutan, Bosnia and Herzegovina, Brunei Darussalam, Burkina Faso, Cabo Verde, Cambodia, Cameroon, Central African Republic, Chad, Congo, Côte d'Ivoire, Cuba, Cyprus, Djibouti, Egypt, Equatorial Guinea, Estonia, Eswatini, Ethiopia, Fiji, French Polynesia, Gabon, Gambia, Georgia, Ghana, Guam, Guinea, Guinea-Bissau, Haiti, Jamaica, Kuwait, Kyrgyzstan, Lao People's Democratic Republic, Latvia, Lebanon, Liberia, Libya, Lithuania, Luxembourg, Madagascar, Maldives, Mali, Malta, Mauritania, Mauritius, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nepal, New Caledonia, Niger, North Macedonia, Occupied Palestinian Territory, Oman, Paraguay, Peru, Philippines, Puerto Rico, Republic of Moldova, Saint Lucia, Saint Vincent and the Grenadines, Saudi Arabia, Senegal, Somalia, Sudan, Suriname, Timor-Leste, Togo, Trinidad and Tobago, Tunisia, United Arab Emirates, United States Virgin Islands, Uruguay, Uzbekistan, Zambia
Extrapolation based on region	Detailed sub-region	Panel data regression	Burundi, Channel Islands, Comoros, Eritrea, Korea (Democratic People's Republic of), Lesotho, Malawi, Sao Tome and Principe, Samoa, Sierra Leone, Solomon Islands, South Sudan, Tajikistan, Tonga, Turkmenistan, Vanuatu, Western Sahara, Yemen

* Given Switzerland's economic activity correlation with the Eurozone's, the PMI for the latter is used to extrapolate the loss in hours. Given the lack of readily available data of Canada's quarterly hours, and the country's close economic ties to the United States, the coefficient estimated for the relationship between the Google trends index and hours worked of the latter is used to project Canada's hours worked.

Note: The reference areas included correspond to the territories for which ILO modelled estimates are produced.

Given the exceptional situation, including the scarcity of relevant data, the estimates are subject to a substantial amount of uncertainty. The unprecedented labour market shock created by the COVID-19 pandemic is difficult to assess by benchmarking against historical data. Furthermore, at the time of estimation, consistent time series of readily available and timely high-frequency indicators is relatively scarce. These limitations result in a high overall degree of uncertainty. In the following weeks, consistent labour market time series data from administrative sources, as well as additional business and consumer confidence survey data will become available for many countries. These data will provide valuable statistical information on hours worked. Consequently, the reliability of the estimates will increase over time as the model uses more of these data. In addition, greater data availability will allow a shift to direct nowcasting for additional countries, and rely less on extrapolation. This will enable the production of global and regional aggregates with less underlying uncertainty. For these reasons the estimates will be subject to regular updates and revision.

Technical annex 3: Assessing impact on sectors

The assessment of the impact of the crisis on economic output by different sectors is based on real-time economic and financial data including: IHS Markit Global Business Outlook and Sector PMI indices; Institute of International Finance; Cboe Volatility Index (VIX); McKinsey; OECD; Brookings; Moody's analytics; Corporate performance analytics; S&CF Insights; S&P Global; Continuum economics; Bloomberg; National Bureau of Statistics of China (NBS); and EUROSTAT.

To examine the evidence presented in these sources, three types of indices were identified to reveal the effects of the shock on firm dynamics and jobs: (1) global firms' output indices; (2) investment in fixed assets, domestic trade, and foreign trade (with particular reference to China to capture the effects of the shock during the period December 2019–February/March 2020); and (3) business expectations. Evidence from these indices shows the extent of the decrease on firms' production, investment, sales, expectations and their implications for layoffs and plans for short-term hiring.

- 1. The global firms' output indices are particularly useful to examine the sizeable short-term drop in different manufacturing and service activities. The output indices show widespread disruption across sectors from the virus shock. The analysis was performed by examining global output indices and separate indices for the European Union, the United States and China up to the end of March 2020.
- 2. The second set of indicators focuses on investment in fixed assets, and domestic and foreign trade with special reference to China, particularly during the critical period of December 2019 through March 2020. It provides rich evidence on how a number of different variables, including employment indices, reacted to the shock. The change in investment in fixed assets according to specific sectors of activities is of particular importance to the assessment. The indices on retail sales of specific consumption segments complement the analysis, along with the changes in total values of imports and exports.
- 3. The third set of indices used in the analysis centres on business expectations, which have deteriorated markedly since January 2020, reflecting the significant uncertainty in products and financial markets. This uncertainty has had a direct effect on investment and capital flows and has led to a widespread halt of hiring plans. The expectations on corporate earnings also reflect the uncertainty and effects on planning investment and hiring decisions. Changes in global business activity expectations confirmed how expectations began to change from October 2019 to February 2020. Uncertainty can be captured through the Volatility Index (VIX), which is a real-time market index that represents the market's expectation of 30-day forward-looking volatility, derived from the price inputs of the S&P 500 index options and it provides a measure of market risk and investors' sentiments. This is an instrument to analyse risk and investment decisions also affecting hiring decisions. Another set of indices in this category was used to examine uncertainty through capital flows, revealing how the COVID-19 shock reversed capital flows to emerging markets. Finally, uncertainty was also examined through increases in government borrowing costs for emerging economies.