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

23 September 2020

Key messages

Latest labour market developments

Workplace closures

▶ At 94 per cent, the overall share of workers residing in countries with workplace closures of some sort remains high. **The share of workers in countries with required closures for all but essential workplaces across the entire economy or in targeted areas is still significant, though there are large regional variations**. Among upper-middle-income countries, around 70 per cent of workers continue to live in countries with such strict lockdown measures in place (whether nationwide or in specific geographical areas), while in low-income countries, the earlier strict measures have been relaxed considerably, despite increasing numbers of COVID-19 cases.

Working-hour losses: Again higher than previously estimated

▶ **Workplace closures continue to disrupt labour markets around the world, leading to working-hour losses that are higher than previously estimated**. The estimated total working-hour losses in the second quarter of 2020 (relative to the fourth quarter of 2019) are now 17.3 per cent, or 495 million full-time equivalent (FTE) jobs, revised upward from the estimate of 14.0 per cent (400 million FTE jobs) reported in the fifth edition of the *ILO Monitor*. Lower-middle-income countries are the hardest hit, having experienced an estimated decline in working hours of 23.3 per cent (240 million FTE jobs) in the second quarter of the year.

▶ **Working-hour losses are expected to remain high in the third quarter of 2020, at 12.1 per cent or 345 million FTE jobs**. Moreover, revised projections for the fourth quarter suggest a bleaker outlook than previously estimated. In the baseline scenario, **working-hour losses in the final quarter of 2020 are expected to amount to 8.6 per cent, or 245 million FTE jobs.**

▶ The latest data confirm that working-hour losses are reflected in higher levels of unemployment and inactivity, with inactivity increasing to a greater extent than unemployment. **Rising inactivity is a notable feature of the current job crisis calling for strong policy attention**. The decline in employment numbers has generally been greater for women than for men.

Labour income losses

▶ **These high working-hour losses have translated into substantial losses in labour income**. Estimates of labour income losses (before taking into account income support measures) suggest a global decline of 10.7 per cent during the first three quarters of 2020 (compared with the corresponding period in 2019), which amounts to US$3.5 trillion, or 5.5 per cent of global gross domestic product (GDP) for the first three quarters of 2019. Labour income losses are highest in middle-income countries, reaching 15.1 per cent in lower-middle-income countries and 11.4 per cent in upper-middle-income countries.

Policy impacts and gaps

Effectiveness of fiscal stimulus in mitigating labour market disruptions

▶ **Many countries have adopted large-scale fiscal packages in response to the crisis, particularly to support incomes and businesses**. Estimates indicate that, on average, an increase in fiscal stimulus of 1 per cent of annual GDP would have reduced working-hour losses by 0.8 percentage points in the second quarter of 2020. In the absence of any fiscal stimulus, global working-hour losses would have been as high as 28 per cent.

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The "stimulus gap" in low- and middle-income countries

▶ Fiscal stimulus[1] has been unevenly distributed worldwide when compared to the scale of labour market disruptions. The estimated **fiscal stimulus gap is around US$982 billion in low-income and lower-middle-income countries (US$45 billion and US$937 billion, respectively)**. This gap represents the amount of resources that these countries would need to match the average level of stimulus relative to working-hour losses in high-income countries. Significantly, the estimated stimulus gap for low-income countries is less than 1 per cent of the total value of the fiscal stimulus packages announced by high-income countries.

Looking ahead

▶ As widespread and severe labour market disruptions have continued in the third quarter of 2020, and will persist in the fourth quarter, **policy responses need to be sustained and agile, addressing five key challenges:**

▶ Finding the right **balance and sequence of health and economic and social policy** interventions, particularly in the light of recently increasing infection numbers in many countries.

▶ Ensuring that **policy interventions are maintained at the necessary scale while made increasingly effective and efficient**.

▶ Filling the **stimulus gap in emerging and developing countries, which requires greater international solidarity** while improving the effectiveness of stimulus measures.

▶ **Tailoring policy support for vulnerable and hard-hit groups,** including women, young people and informal workers – As labour income losses are massive, income support measures for hard-hit groups should be a policy priority.

▶ Utilizing **social dialogue as an effective mechanism for policy responses to the crisis**.

▶ Part I. Latest labour market developments: Continuing workplace closures, working-hour losses and decreases in labour income

Stringent workplace closures have been relaxed in many countries, but the current measures continue to have a widespread impact
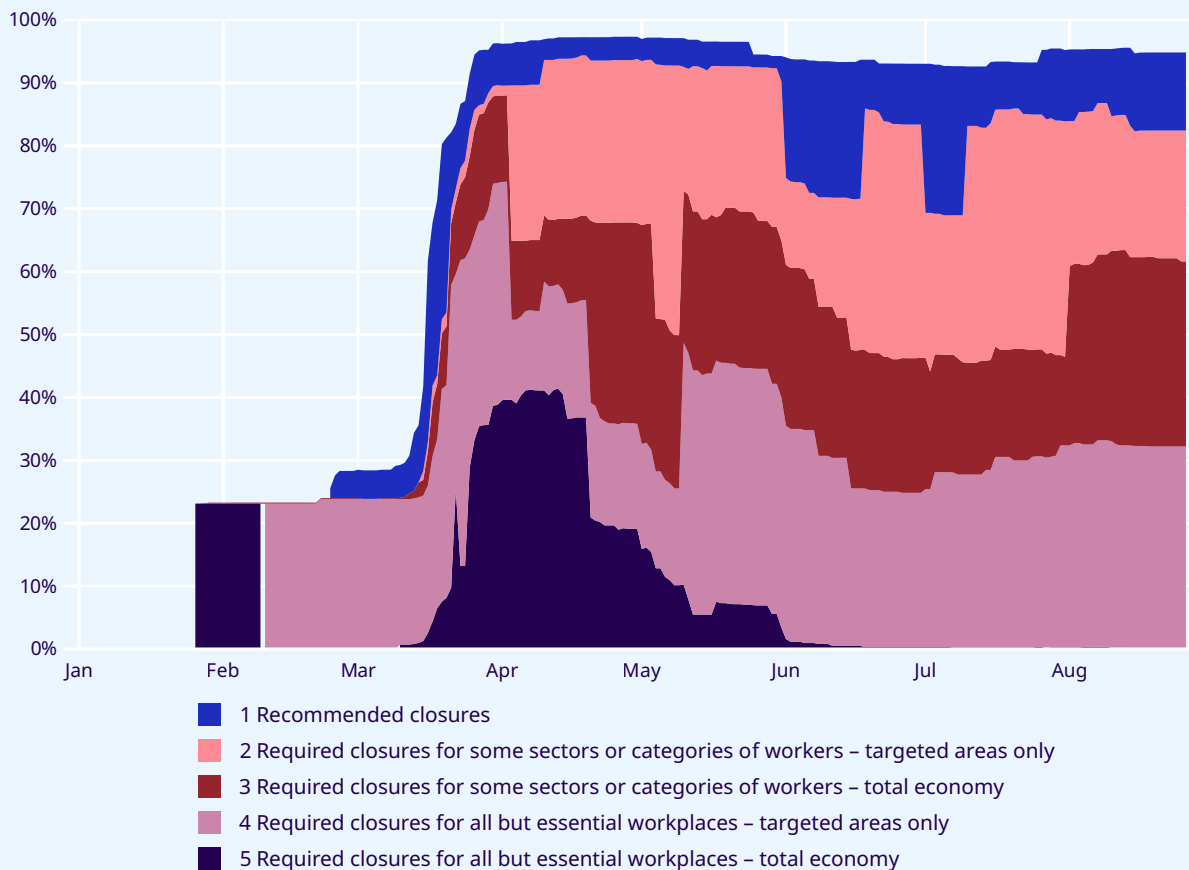
Altogether, 94 per cent of the world's workers currently live in countries with some sort of workplace closure measure in place. This share reached a peak of 97 per cent on 25 April 2020, then slowly declined until mid-July, after which it started to increase slightly again.

Lockdowns of workplaces for all but essential workers (that is, the most stringent of possible measures) continue to affect a sizeable share of the global workforce. As at 26 August 2020, almost one third (32 per cent) of the world's workers were living in countries with such lockdowns. More recently, the most stringent workplace closure measures have begun to be targeted at highly infected areas in countries, rather than covering a country's entire economy. A further 50 per cent of the world's workers were living in countries with required workplace closures for some sectors or categories of workers (again, with this type of closure increasingly being targeted at specific areas within a country), while just 12 per cent of workers were living in countries that have only recommended workplace closures in place (see figure 1).

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1 Fiscal stimulus refers here to "above-the-line" measures, which include unemployment benefits, wage subsidies and other transfers, tax cuts and deferrals of tax payments (see IMF, *Fiscal Monitor: Policies to Support People during the COVID-19 Pandemic*, April 2020, box 1.1). They are the measures that most directly compensate for losses caused by the labour market disruptions, and are immediately reflected in governments' fiscal balance, debt and increased borrowing needs.

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▶ **Figure 1. Share of world's employed in countries with workplace closures, 1 January–26 August 2020** (percentage)

1 Recommended closures

2 Required closures for some sectors or categories of workers – targeted areas only

3 Required closures for some sectors or categories of workers – total economy

4 Required closures for all but essential workplaces – targeted areas only

5 Required closures for all but essential workplaces – total economy

Note: The shares of workers in countries with required workplace closures for some sectors or categories of workers and countries with recommended workplace closures are stacked on top of the share of workers in countries with required workplace closures for all but essential workplaces.

Source: ILOSTAT database, ILO modelled estimates, November 2019; Oxford COVID-19 Government Response Tracker.

The prevalence of the different types of closure measures adopted has changed considerably. Since early April 2020, many countries have gradually relaxed the measures in place, moving to closure requirements for specific sectors and types of worker, but without lifting the earlier restrictions completely.

The prevalence of the most stringent type of lockdown (required closures for all but essential workplaces) varies greatly across regions (see figure 2). Reflecting the resurgence of the pandemic in many countries, the declining trend in the prevalence of this type of lockdown that could be observed after April stopped in late June and started to increase

slightly again, especially in upper-middle-income countries. Despite rising numbers of cases, a similar trend has not manifested itself in low-income countries, mainly owing to the pressure to resume work in view of the large numbers of people in poverty who rely on jobs for their livelihoods, particularly in the informal economy. In all of the countries in this income group, the most stringent workplace closure measures are now targeted solely at certain geographical areas, in contrast to the situation at the start of the crisis, when lockdowns applied to the entire economy in most countries.

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▶ **Figure 2. Share of workers living in countries with required closures for all but essential workplaces covering either the entire economy or targeted areas, by country income group, 1 January–26 August 2020** (percentage)
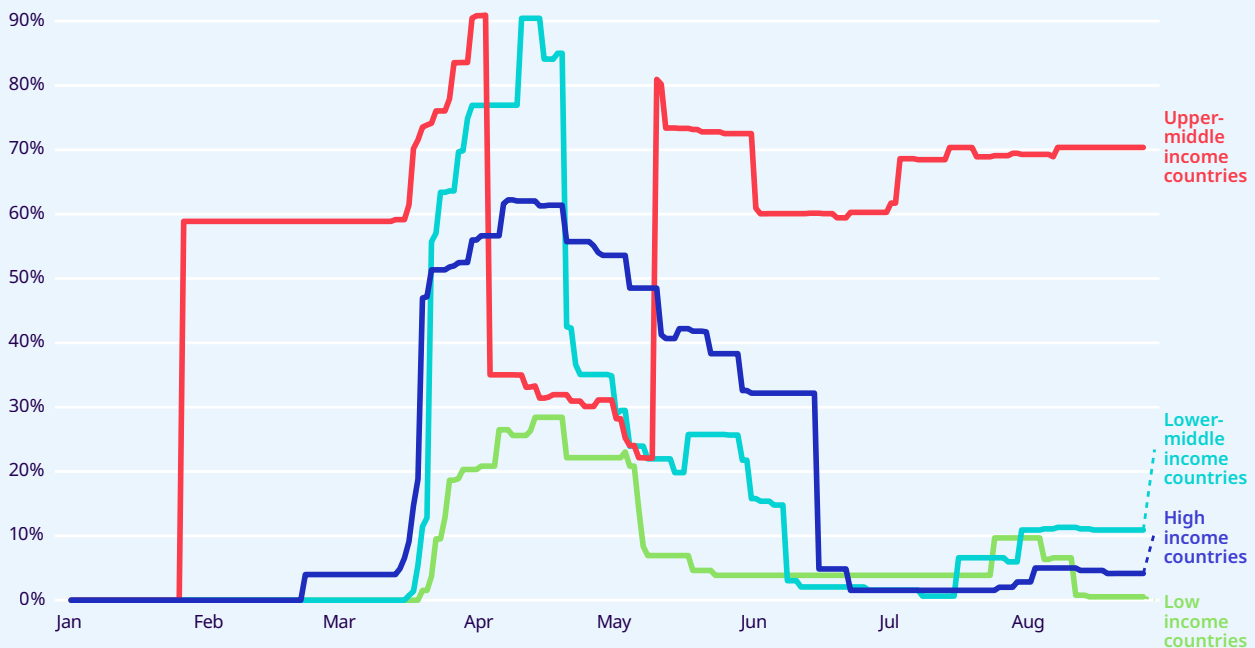
Note: Within each country income group, the share of workers living in countries with required closures for all but essential workplaces includes workers both in countries that enforce such measures for the entire economy and in countries that enforce them only in the most infected areas (i.e. measure types 5 and 4 in figure 1).

Source: ILOSTAT database, ILO modelled estimates, November 2019; Oxford COVID-19 Government Response Tracker.

Upward revisions of estimated working-hour losses reflect a worsening situation in the labour market and offer scant hope of a strong recovery this year

The latest ILO estimates indicate a considerably greater decline in global working hours during the first three quarters of 2020 than was previously estimated (see box 1). Furthermore, the severe and protracted economic impact of the pandemic has significantly aggravated the outlook for the fourth quarter.
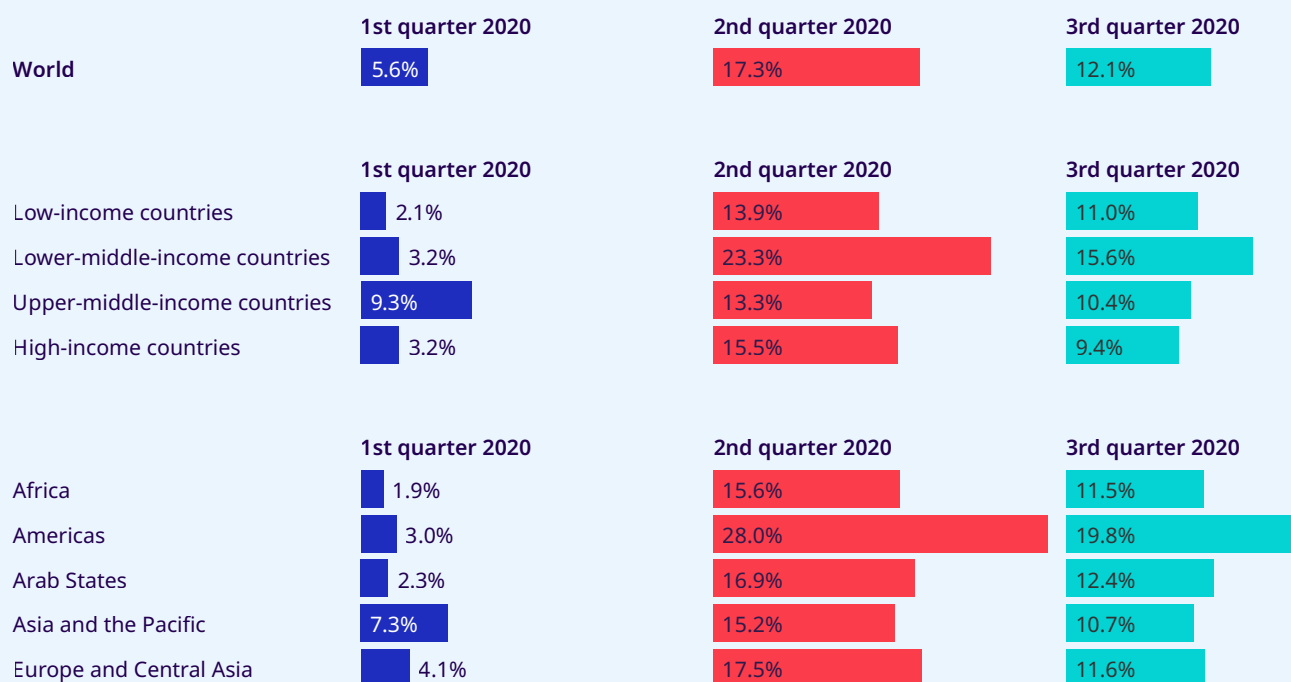
First quarter of 2020

During the first quarter of 2020, an estimated 5.6 per cent of global working hours (up from 5.4 per cent as estimated previously) were lost relative to the fourth quarter of 2019, equivalent to 160 million full-time jobs (assuming a 48-hour working week) (see figure 3 and table 1).[2]

Given the earlier spread of the virus in China (which implemented strict containment measures already in late January) and other countries in **Asia and the Pacific**, it is not surprising that this region accounted for approximately 80 per cent of the global reduction in working hours during the first quarter of the year. More specifically, the Eastern Asia subregion experienced a decline in working hours of 12.0 per cent, or 100 million full-time equivalent (FTE) jobs, during that quarter.

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2   See Technical Annex 1 for more details on the use of full-time equivalent jobs in these estimates. All full-time equivalent estimates are based on the assumption of a 48-hour working week.

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▶ **Figure 3. Working-hour losses, world and by region and income group, first, second and third quarters of 2020** (percentage)

	1st quarter 2020	2nd quarter 2020	3rd quarter 2020
World	5.6%	17.3%	12.1%

	1st quarter 2020	2nd quarter 2020	3rd quarter 2020
Low-income countries	2.1%	13.9%	11.0%
Lower-middle-income countries	3.2%	23.3%	15.6%
Upper-middle-income countries	9.3%	13.3%	10.4%
High-income countries	3.2%	15.5%	9.4%

	1st quarter 2020	2nd quarter 2020	3rd quarter 2020
Africa	1.9%	15.6%	11.5%
Americas	3.0%	28.0%	19.8%
Arab States	2.3%	16.9%	12.4%
Asia and the Pacific	7.3%	15.2%	10.7%
Europe and Central Asia	4.1%	17.5%	11.6%

Source: ILO nowcasting model (see Technical Annex 1).

Box 1. Why have the estimated working-hour losses been revised upward?

From its second edition (issued on 7 April 2020) onwards, the *ILO Monitor* has been regularly providing estimates of working-hour losses in the first and second quarters of 2020 relative to the last pre-crisis quarter (i.e. the fourth quarter of 2019). In the current edition, estimates of the losses for the third quarter are presented for the first time. Moreover, updated scenario-based projections are provided for the fourth quarter of 2020. Since the fifth edition of the *ILO Monitor*, released on 30 June 2020, new national labour force survey and economic data covering both the first and second quarters of 2020 have been incorporated into the ILO's nowcasting model (see Technical Annexes 1 and 2 for further details). These new data reveal a further deterioration of labour market conditions, reflected in working-hour losses that are higher than previously estimated.

One of the underlying reasons for the upward revision of working-hour losses is that **workers in developing and emerging economies, especially those in informal employment, have been affected to a much greater extent** than in past crises.[a] In a number of these countries for which new data have become available, the losses of working hours are substantially higher than in the most severely affected advanced economies. In developing economies, the more limited opportunities for teleworking,[b] the greater impact of the crisis on informal workers, the more limited role played by public sector employment, and resource constraints on the implementation of COVID-19 response measures (see Part II, "Policy impacts and gaps", further down) all appear to be exacerbating the effect of the downturn, thereby creating new labour market challenges.

[a] There is evidence that informal employment has increased in the past during economic downturns as a result of declining opportunities in the formal economy. See e.g. Johannes Jütting and Juan Ramón de Laiglesia (eds), *Is Informal Normal? Towards More and Better Jobs in Developing Countries* (OECD, 2009).

[b] See ILO, *Working from Home: Estimating the Worldwide Potential*, 2020; and Mariya Brussevich, Era Dabla-Norris and Salma Khalid, "Who Will Bear the Brunt of Lockdown Policies? Evidence from Tele-workability Measures across Countries", IMF Working Paper No. 20/88, 2020.

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▶ **Table 1. Working-hour losses, world and by region and subregion, first, second and third quarters of 2020**
(percentage and full-time equivalent jobs)

Reference area	Percentage working hours lost (%)			Difference relative to estimates presented in fifth edition of *ILO Monitor*, 30 June 2020 (ppt)			Equivalent number of full-time jobs (48 hours/week) lost (millions)			Difference relative to estimates presented in fifth edition of *ILO Monitor*, 30 June 2020 (millions)		
	2020			2020			2020			2020		
	Q1	Q2	Q3	Q1	Q2	Q3	Q1	Q2	Q3	Q1	Q2	Q3
World	5.6	17.3	12.1	0.2	3.3	n.a..	160	495	345	5	95	n.a.
Africa	1.9	15.6	11.5	−0.5	3.5	n.a.	7	60	43	−2	15	n.a.
Northern Africa	2.1	21.2	12.9	−0.4	5.7	n.a.	1	13	8	−1	4	n.a.
Sub-Saharan Africa	1.9	14.5	11.3	−0.5	3.1	n.a.	6	45	35	−1	10	n.a.
Central Africa	1.8	14.7	11.9	−0.5	2.8	n.a.	1	7	6	0	1	n.a.
Eastern Africa	2.0	14.0	11.8	−0.4	3.1	n.a.	3	19	16	0	4	n.a.
Southern Africa	0.5	20.3	14.2	−1.1	8.1	n.a.	0	4	2	0	2	n.a.
Western Africa	2.1	13.9	9.9	−0.4	2.3	n.a.	2	15	11	−1	2	n.a.
Americas	3.0	28.0	19.8	0.0	9.7	n.a.	11	105	75	0	35	n.a.
Latin America and the Caribbean	3.7	33.5	25.6	0.1	13.5	n.a.	9	80	60	0	33	n.a.
Central America	0.8	35.8	29.9	−0.3	16.6	n.a.	1	24	20	0	11	n.a.
South America	5.0	33.5	24.9	0.2	12.9	n.a.	8	50	39	1	18	n.a.
Northern America	1.8	18.4	9.6	0.0	3.1	n.a.	2	25	13	0	4	n.a.
Arab States	2.3	16.9	12.4	−0.8	3.7	n.a.	1	10	8	−1	2	n.a.
Asia and the Pacific	7.3	15.2	10.7	0.2	1.7	n.a.	125	265	185	0	30	n.a.
Eastern Asia	12.0	5.5	4.9	0.4	−4.9	n.a.	100	45	40	5	−40	n.a.
South-Eastern Asia and the Pacific	3.3	16.7	10.7	1.2	4.1	n.a.	10	49	31	4	12	n.a.
South-Eastern Asia	3.4	17.1	10.9	1.3	4.4	n.a.	9	48	30	3	13	n.a.
Southern Asia	3.1	27.3	18.2	−0.3	9.4	n.a.	19	170	115	−2	60	n.a.
Europe and Central Asia	4.1	17.5	11.6	0.7	3.6	n.a.	13	55	38	2	10	n.a.
Northern, Southern and Western Europe	4.5	18.1	11.4	0.3	2.4	n.a.	7	28	18	1	4	n.a.
Northern Europe	1.1	16.6	10.8	−2.0	1.3	n.a.	0	6	4	−1	0	n.a.
Southern Europe	6.1	23.9	17.1	0.8	5.9	n.a.	3	12	8	0	3	n.a.
Western Europe	5.4	14.8	7.7	1.4	0.5	n.a.	4	10	5	1	0	n.a.
Eastern Europe	3.1	13.6	7.8	0.5	2.0	n.a.	3	15	8	0	3	n.a.
Central and Western Asia	4.8	23.3	18.5	2.1	9.7	n.a.	3	14	11	1	6	n.a.

n.a. = not applicable; ppt = percentage points

Note: Values of full-time equivalent (FTE) jobs lost above 50 million are rounded to the nearest 5 million; values below that threshold are rounded to the nearest million. The equivalent losses in full-time jobs are presented to illustrate the magnitude of the estimates of hours lost. The FTE values are calculated on the assumption that reductions in working hours were borne exclusively and exhaustively by a subset of full-time workers, and that the rest of workers did not experience any reduction in hours worked. The figures in this table should not be interpreted as numbers of jobs actually lost or as actual increases in unemployment.

Source: ILO nowcasting model (see Technical Annex 1).

Second quarter of 2020

Since the impact of the crisis has proved to be much greater than previously estimated, particularly in developing countries, the **estimated decline in global working hours in the second quarter of 2020**, relative to the fourth quarter of 2019, has been further **revised upward to 17.3 per cent (up from the previous estimate of 14.0 per cent), which is equivalent to 495 million full-time jobs**. Lower-middle-income countries were the hardest hit, experiencing a decline of 23.3 per cent (and also the largest upward revision of all the income groups, namely 7.2 percentage points, the previous estimate being 16.1 per cent).

The **Americas** suffered a reduction in working hours of 28.0 per cent, or 105 million FTE jobs, in the second quarter of 2020, compared with the previous estimate of 18.3 per cent. This is the largest loss in hours worked among the major geographical regions and also represents the largest upward revision since the fifth edition of the *ILO Monitor*. Within this region, South America and Central America had particularly high working-hour losses in the second quarter, at 33.5 and 35.8 per cent, respectively. By contrast, Northern America, including Canada and the United States of America, experienced a smaller, yet still substantial, decline of 18.4 per cent in working hours.

The hours worked in **Europe and Central Asia** are estimated to have declined by 17.5 per cent, or 55 million FTE jobs, in the second quarter, up from the estimate of 13.9 per cent presented in the previous edition of the *ILO Monitor*. The largest losses in this region are estimated to have occurred in Southern Europe (23.9 per cent), followed by Central and Western Asia (23.3 per cent), Northern Europe (16.6 per cent), Western Europe (14.8 per cent), and Eastern Europe (13.6 per cent).[3]

In **Asia and the Pacific**, the total working-hour losses for the second quarter of 2020 are estimated at 15.2 per cent, or 265 million FTE jobs, up from the previous estimate of 13.5 per cent. Among the subregions, the greatest reduction in working hours is estimated to have occurred in Southern Asia (with a decline of 27.3 per cent in the second quarter),[4] followed by South-Eastern Asia and the Pacific (16.7 per cent) and Eastern Asia (5.5 per cent). In Southern Asia, the public health situation and strict control measures have resulted in major labour market disruptions. In contrast, in Eastern Asia,[5] the spread of the pandemic was quickly brought under control, resulting in relatively small losses during the second quarter. Reflecting contrasting trends, the estimated working-hour loss was revised upward by 9.4 percentage points for Southern Asia but downward by 4.9 percentage points for Eastern Asia. Working hours in the second quarter of 2020 are estimated to have declined by 16.9 per cent, or 10 million FTE jobs, in the **Arab States**, an upward revision of 3.7 percentage points.

In **Africa**, the total working-hour losses in the second quarter of the year are estimated at 15.6 per cent, or 60 million FTE jobs, up from the previous estimate of 12.1 per cent. In terms of subregions,[6] the new estimates for working-hour losses in the second quarter indicate that Northern Africa experienced the sharpest decline (21.2 per cent), followed by Southern Africa (20.3 per cent), Central Africa (14.7 per cent), Eastern Africa (14.0 per cent) and Western Africa (13.9 per cent).

Third quarter of 2020

The current edition of the *ILO Monitor* includes, for the first time, nowcast-based estimates of working-hour losses for the third quarter of 2020.[7] These point to a decline in **global working hours of 12.1 per cent in the third quarter of 2020, equivalent to 345 million full-time jobs**, relative to the pre-crisis baseline (fourth quarter of 2019). Although it is an improvement on the global working-hour losses of 17.3 per cent estimated for the second quarter, this still represents a considerable decline, suggesting that full job recovery continues to be hampered by the persisting public health and economic challenges posed by the COVID-19 crisis.

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3   Labour force survey (LFS) data are now available for many more countries in the region, hence the uncertainty of the estimates has greatly diminished since the fifth edition of the *ILO Monitor*. Countries for which the incorporation of LFS data collected during the second quarter has resulted in a substantial increase in estimated hours lost include Belgium, Portugal and Turkey. In contrast, the new LFS data for countries such as France, Spain and the United Kingdom of Great Britain and Northern Ireland suggest working-hour losses of a magnitude similar to that of the previous estimates.

4   The availability of data for Southern Asia is limited: the above estimate is therefore subject to a higher level of uncertainty than those for other subregions.

5   Whereas in most regions and subregions the estimated working-hour losses have been revised upward, in Eastern Asia, and specifically in China and Japan, the new estimates reflect a substantial improvement of the situation with respect to the previous edition of the *ILO Monitor*. However, the bases of the new estimates are markedly different for the two aforementioned Eastern Asian countries: for Japan, the estimate is based on complete LFS data for the second quarter, while the ILO nowcasting model for China relies on a series of high-frequency indicators of economic activity.

6   The availability of data for Africa is limited: the estimates for the region as a whole and for its subregions are therefore subject to a higher level of uncertainty than those for other regions and subregions.

7   Data availability for the third quarter is so far limited, and at the time of data collection only one month out of the three had elapsed. Therefore, the uncertainty associated with the estimates for the third quarter is substantially greater than for the first two quarters.

From a regional perspective, **the Americas are expected to remain the most affected region** in the third quarter (a decline in working hours of 19.8 per cent). The losses of working hours in the Arab States are estimated at 12.4 per cent, closely followed by Europe and Central Asia (11.6 per cent), Africa (11.5 per cent) and Asia and the Pacific (10.7 per cent). Across income groups, lower-middle-income countries are expected to register the highest rate of hours lost, at 15.6 per cent, a situation similar to that of the second quarter. Low-income countries are expected to register a decline of 11.0 per cent. Upper-middle-income and high-income countries are projected to experience the smallest losses, namely 10.4 and 9.4 per cent, respectively.

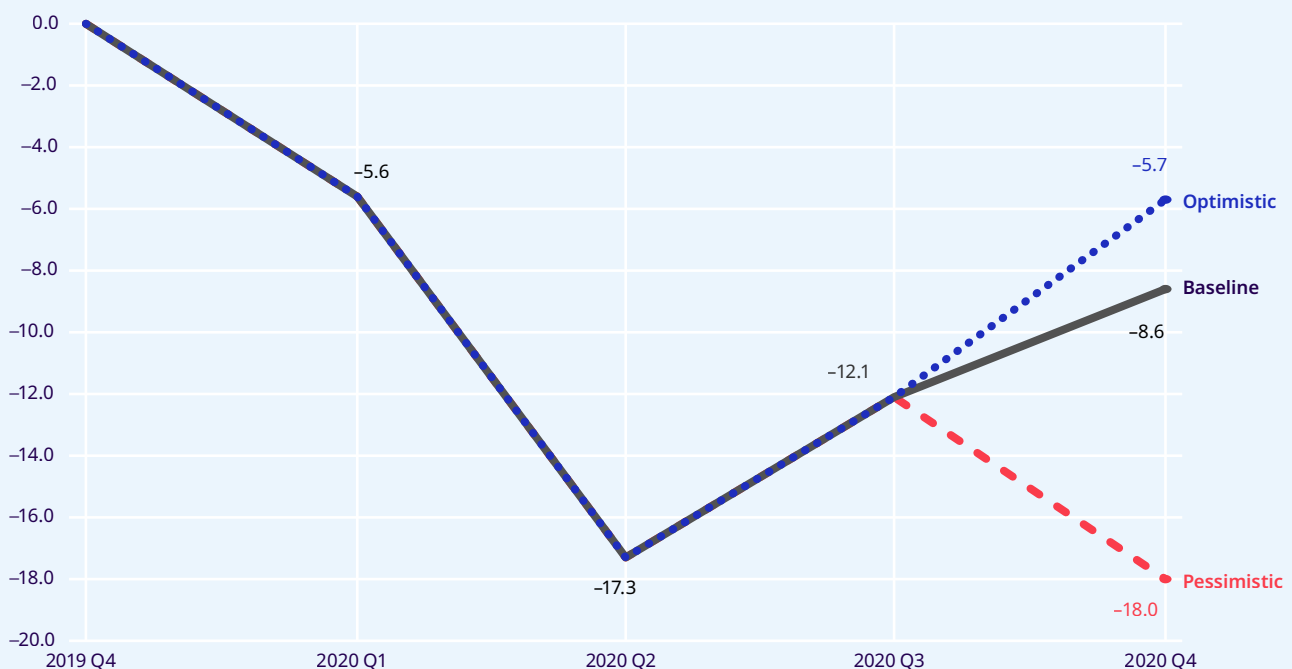## Projections for the fourth quarter of 2020

In light of the rapidly evolving situation in recent months, the projections for the fourth quarter have been updated. As in the fifth edition of the *ILO Monitor*,

three scenarios are presented: (a) a baseline scenario, which uses the latest projections of gross domestic product (GDP) growth; (b) an optimistic scenario, which assumes that working hours will recover at a faster rate than GDP growth; and (c) a pessimistic scenario, which assumes a further wave of strict workplace closures.

The new projections for working-hour losses in the fourth quarter are greater than the previous estimates.[8] Under the baseline scenario, **global working-hour losses are expected to amount to 8.6 per cent in the fourth quarter of 2020**, **equivalent to 245 million full-time jobs** (see figure 4; Statistical annex, table A1; and Technical Annex 2). This represents a significant upward revision from the projection of 4.9 per cent presented in the fifth edition of the *ILO Monitor*.

Considerable variations between regions are likely to persist. Under the **baseline scenario, working-hour losses are projected to be 14.9 per cent in the**

▶ **Figure 4. Working-hour loss estimates for the first three quarters and projections for the fourth quarter of 2020, world** (percentage)

Note: See Technical Annex 2 for further details of the scenarios used to obtain the projections for the fourth quarter.

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8   There are many reasons for the upward revisions. First, the estimated working-hour losses in the second quarter have been revised upward significantly, which means that there is more lost ground to make up. Secondly, the fifth edition of the *ILO Monitor* posited a baseline scenario according to which the pandemic would have a far more limited impact on economic activity in the second half of the year. Since the release of that edition on 30 June, global infection rates have reached new heights, and it is clear that the pandemic continues to prevent a robust economic and labour market recovery, even in countries where infection rates are relatively under control. The latest projections take into account the demand constraints imposed by the ongoing pandemic, but nevertheless assume that nationwide mandatory closures of all but essential workplaces can be avoided.

Americas in the fourth quarter, while losses could fall to 7.3 per cent in Asia and the Pacific. In all regions, working hours will remain far below the levels seen in the fourth quarter of 2019, indicating that the severe job crisis is likely to continue well into 2021.

In the **pessimistic scenario**, global working-hour losses in the fourth quarter of 2020 are projected to reach 18.0 per cent, equivalent to 515 million full-time jobs. Under the **optimistic scenario**, working-hour losses would still amount to 5.7 per cent in the fourth quarter, or 160 million FTE jobs.

Greater increase in inactivity than in unemployment: Evidence from the latest labour force surveys

Working-hour losses in practice include various components: shorter hours, being employed but not working, unemployment and inactivity. There are significant differences across countries in the relative weight of these components; in many cases, unemployment accounts for only a small part of working-hour losses. The latest data from labour force surveys provide further relevant insights.[9]

First, the new data reveal a **significant decline in employment in the second quarter of 2020 compared with the previous year, though with considerable variation across countries** (see figure 5a). As already highlighted in the fifth edition of the *ILO Monitor*, the **relative decline in employment is greater for women than for men in all countries**, albeit with some exceptions (such as France, Israel and Mexico).

Secondly, a simple decomposition approach[10] shows that the **decline in employment in the second quarter of 2020 has been accompanied by a larger increase in inactivity than in unemployment in all countries**, apart from Canada and the United States (see figure 5b).[11] In other words, the decline in employment in most countries has led to a substantial increase in inactivity, while changes in unemployment are smaller. The changes for men and women are broadly similar.[12] On the whole, the data confirm that **focusing on changes in unemployment alone can be misleading**.

This rise in inactivity has important policy implications. Experience from earlier crises shows that activating inactive people is even harder than re-employing the unemployed, so higher inactivity rates are likely to make the job recovery more difficult. Moreover, **younger and older people have been hit particularly hard by the COVID-19 crisis**: since these two groups normally have a higher risk of becoming inactive, there is a danger that they will face long-term labour market disadvantages.[13]

Labour income losses

Working-hour losses translate into a substantial loss of income for workers around the world. To understand this relationship better, the present edition of the *ILO Monitor* estimates the loss of labour income resulting from working-hour losses before income support measures are taken into account.

Global labour income (which includes wages for employees and part of income for the self-employed[14]) **is estimated to have declined by 10.7 per cent during the first three quarters of 2020 compared with the corresponding period in 2019** (see figure 6 and Technical Annex 3). The estimates show that the loss in labour income reaches 15.1 per cent in lower-middle-income countries, 11.4 per cent in upper-middle-income countries and 10.1 per cent

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9   As at 13 September 2020, data for the second quarter were available in the ILOSTAT database for: Australia, Brazil, Canada, Chile, Colombia, Costa Rica, Cyprus, Ecuador, France, Israel, Japan, Mexico, Peru, Portugal, Republic of Korea, Republic of Moldova, Spain, Switzerland, Thailand, United States and Viet Nam.

10   A change in employment can be broken down into changes in unemployment and inactivity by using the following decomposition: Working-age population = Employment + Unemployment + Inactivity, which can be transformed into: $-\Delta\left(\frac{E}{WAP}\right)_t = \Delta\left(\frac{U}{WAP}\right)_t + \Delta\left(\frac{I}{WAP}\right)_t$, where Δ denotes change from the second quarter of 2019 to the second quarter of 2020, *WAP* = Working-age population, *E* = Employment, *U* = Unemployment, and *I* = Inactivity. For a definition of unemployment and inactivity, see ILOSTAT.
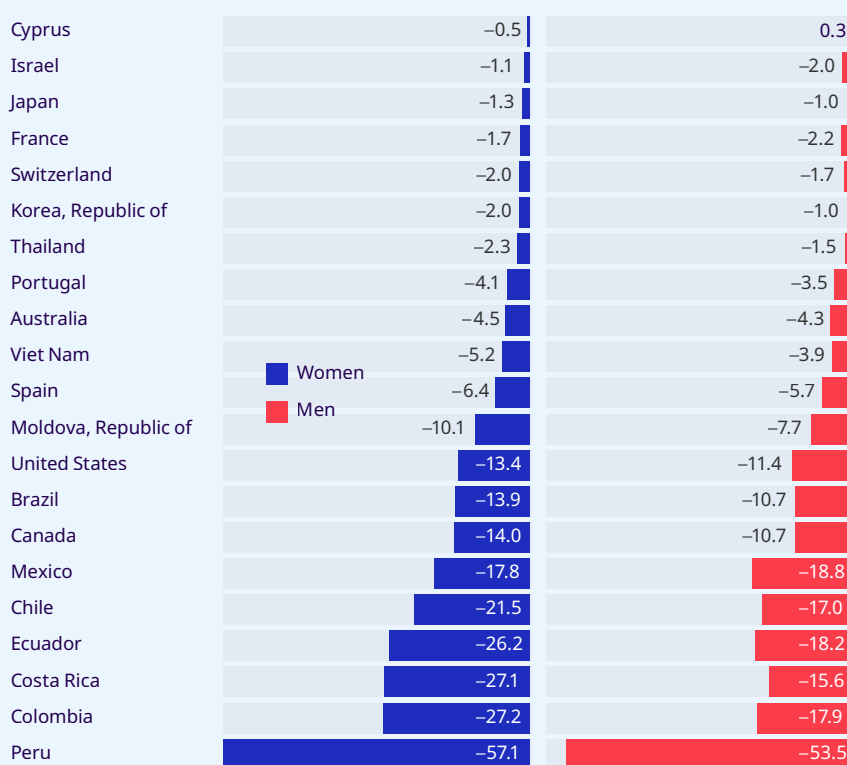
11   It should also be noted that distinguishing between the unemployed and the inactive is more difficult during the COVID-19 crisis because of the restrictions imposed by containment measures that limit people's ability to search for jobs, which is one of the criteria that must be fulfilled if someone is to be classified as unemployed (as opposed to being a discouraged worker – such individuals are considered to be inactive).

12   As more labour force survey data become available over the coming months, further analysis will be required to identify trends and differences across sectors and groups.
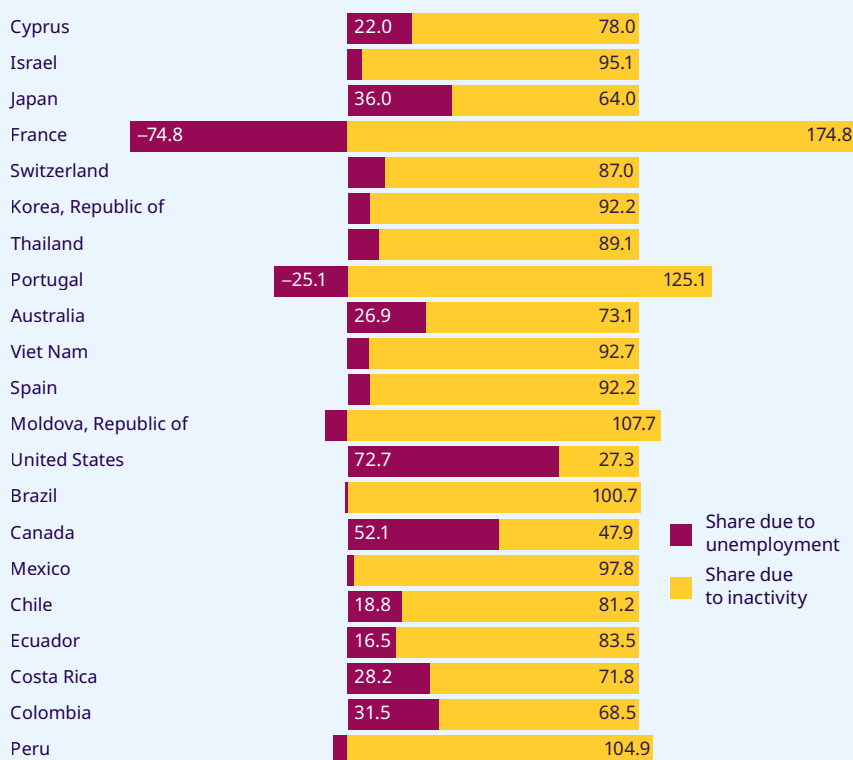
13   For an analysis of the impact of the crisis on young people, see ILO, *ILO Monitor: COVID-19 and the World of Work – Fourth Edition*, 27 May 2020; and ILO, *Preventing Exclusion from the Labour Market: Tackling the COVID-19 Youth Employment Crisis*, 27 May 2020. For an analysis of the impact of the Great Recession of 2007–09 on older workers, see (for OECD countries): Brian Keeley and Patrick Love, *From Crisis to Recovery: The Causes, Course and Consequences of the Great Recession* (OECD, 2010); and (for EU countries): Nicola Duell, Lena Thurau and Tim Vetter, *Long-term Unemployment in the EU: Trends and Policies* (Bertelsmann-Stiftung, 2016).

14   The returns from the economic activity of the self-employed comprise both labour income and implied capital income (from physical and non-physical capital). Both income shares fall jointly when working hours are reduced. Only the labour income share is included in the estimates presented here.

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▶ **Figure 5a. Decline in employment between Q2/2019 and Q2/2020, by sex, selected countries** (percentage)

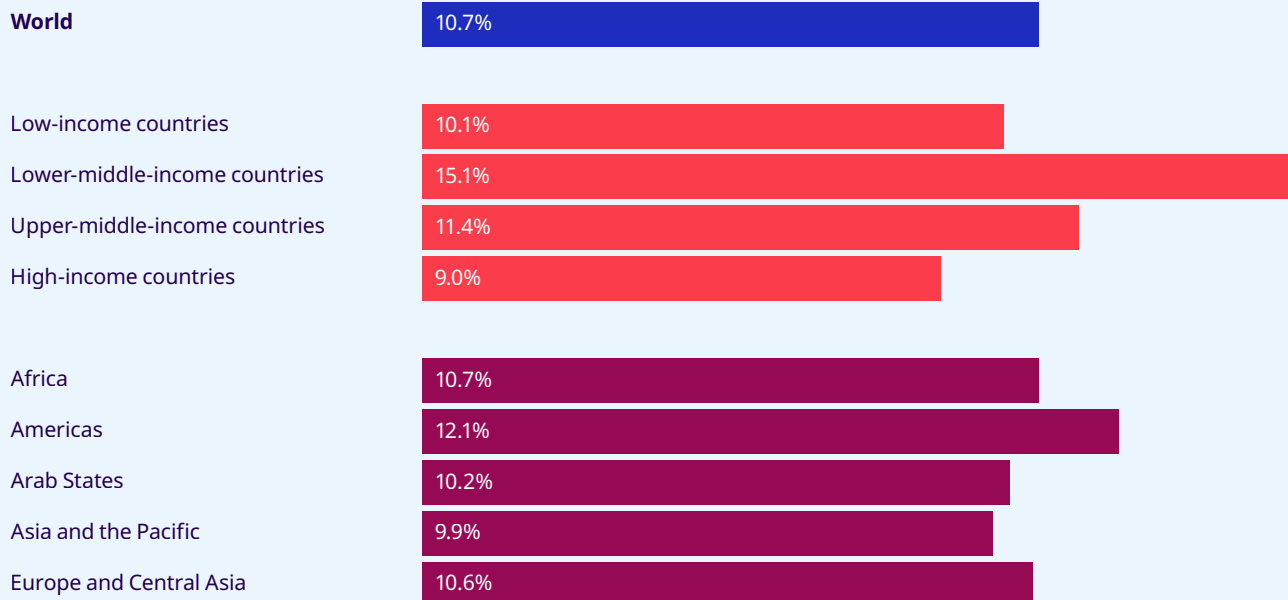| Country	Women	Men
Cyprus	−0.5	0.3
Israel	−1.1	−2.0
Japan	−1.3	−1.0
France	−1.7	−2.2
Switzerland	−2.0	−1.7
Korea, Republic of	−2.0	−1.0
Thailand	−2.3	−1.5
Portugal	−4.1	−3.5
Australia	−4.5	−4.3
Viet Nam	−5.2	−3.9
Spain	−6.4	−5.7
Moldova, Republic of	−10.1	−7.7
United States	−13.4	−11.4
Brazil	−13.9	−10.7
Canada	−14.0	−10.7
Mexico	−17.8	−18.8
Chile	−21.5	−17.0
Ecuador	−26.2	−18.2
Costa Rica	−27.1	−15.6
Colombia	−27.2	−17.9
Peru	−57.1	−53.5

Legend: ■ Women ■ Men

▶ **Figure 5b. Share of increases in unemployment and inactivity in the aggregate decline in employment between Q2/2019 and Q2/2020** (percentage)

Country	Share due to unemployment	Share due to inactivity
Cyprus	22.0	78.0
Israel		95.1
Japan	36.0	64.0
France	−74.8	174.8
Switzerland		87.0
Korea, Republic of		92.2
Thailand		89.1
Portugal	−25.1	125.1
Australia	26.9	73.1
Viet Nam		92.7
Spain		92.2
Moldova, Republic of		107.7
United States	72.7	27.3
Brazil		100.7
Canada	52.1	47.9
Mexico		97.8
Chile	18.8	81.2
Ecuador	16.5	83.5
Costa Rica	28.2	71.8
Colombia	31.5	68.5
Peru		104.9

Legend: ■ Share due to unemployment ■ Share due to inactivity

Note: The shares in figure 5b add up to 100 per cent as a result of the decomposition. A negative value indicates that the indicator declined between the second quarter of 2019 and the second quarter of 2020, i.e. the unemployment ratio decreased in Brazil, France, Peru, Portugal and the Republic of Moldova.

Source: National labour force surveys accessed in the ILOSTAT database on 13 September 2020.

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▶ **Figure 6. Share of labour income lost due to working-hour losses during the first three quarters of 2020 (before income support measures), world and by income group and region** (percentage)

World	10.7%
Low-income countries	10.1%
Lower-middle-income countries	15.1%
Upper-middle-income countries	11.4%
High-income countries	9.0%
Africa	10.7%
Americas	12.1%
Arab States	10.2%
Asia and the Pacific	9.9%
Europe and Central Asia	10.6%

Note: Labour incomes are aggregated using purchasing power parity exchange rates. More detailed data with disaggregation by region and subregion are available in Statistical annex, table A2.

in low-income countries.[15] By contrast, workers in high-income countries experience a labour income loss of 9.0 per cent. Moreover, drops in income in these countries are more frequently offset by income replacement schemes. Across geographical regions, income losses are highest in the Americas, followed by Africa.

In total, the **global loss in labour income during the first three quarters of 2020 amounts to US$3.5 trillion** (using 2019 market exchange rates), which is equivalent to 5.5 per cent of global GDP for the first three quarters of 2019.[16] When those significant losses are not mitigated by other sources of income, such as social protection transfers, they can push households into poverty while reducing aggregate demand. If households deplete their savings over time and stimulus packages are phased out, the fall in aggregate demand could steepen,

reducing incomes further and rendering a job recovery even more difficult.

The **aggregate figures of labour income loss hide considerable differences among workers**. Formal employees are the most likely to benefit from social security benefits or other public sector measures that cushion the blow of labour income losses. The net income loss for this group will therefore be smaller. In contrast, the 60 per cent of global workers who are informal and thus unlikely to be protected by social protection schemes are particularly vulnerable to income loss and poverty during the COVID-19 crisis, as emphasized in the third edition of the *ILO Monitor*. It is also worth noting that as the estimates do not include capital income for the self-employed,[17] the actual income loss for the 1.4 billion own-account and contributing family workers around the world will be larger than estimated.

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15 Since poorer countries have been hit harder by the crisis, the GDP-weighted estimates shown in figure 6 downplay the labour income loss for workers at the global level. Across all countries, workers lost on average 11.8 per cent of their labour income in the first three quarters of 2020.

16 The latest figures indicate a far greater loss than the estimates presented in the first edition of the *ILO Monitor* (issued on 18 March 2020), which suggested losses of between US$860 billion and US$3,440 billion for the whole of the year 2020.

17 This exclusion has been done on purpose so as to estimate the labour income share properly. See ILO, *The Global Labour Income Share and Distribution* (ILO, 2019).

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▶ Part II. Policy impacts and gaps

Effectiveness of fiscal stimulus in mitigating labour market disruptions

In response to the massive labour market disruptions, governments have launched fiscal stimulus[18] programmes of an unprecedented scale, particularly in high-income countries. To assess the initial impact of these policy responses, this edition of the *ILO Monitor* examines **the extent to which fiscal policy has helped to mitigate working-hour losses during the second quarter of 2020** in countries for which data are available.

The main channels through which an expansive fiscal policy can mitigate the losses caused by the public health situation and the associated containment measures include:

▶ **Mitigating a fall in consumption**: Income support (for workers, including those put on furlough schemes, the jobless and households) can prevent demand shortages in sectors where activity is allowed to continue or once closed sectors are re-opened.

▶ **Preventing business closures**: The provision of subsidies and other incentives to firms can prevent closures.

▶ **Mitigating a fall in investment**: Both induced effects via private and government consumption and direct support for firms can encourage investment that would otherwise not take place.

▶ **Increasing economic activity through direct government expenditure**: This includes direct expenditure on social services, including health and social care**.**

Among countries with sufficient data, **a clear correlation can be seen: the larger the fiscal stimulus (as a percentage of GDP), the lower the working-hour losses in the second quarter of 2020** (see figure 7). To determine the strength of this correlation, a multiple regression is used to control for a range of factors, such as public health measures and labour market structures (see Technical Annex 4 for further details).[19] This estimation shows that, on average, **an increase in fiscal stimulus by 1 per cent of annual GDP would have reduced working-hour losses by 0.8 percentage points in the second quarter of 2020**. To put this effect into perspective, the estimated working-hour losses would, on average, have been as high as 28 per cent if no fiscal stimulus had been implemented.[20] This also suggests that the comparatively smaller stimulus programmes in low- and middle-income countries (see further down) may account for at least part of the large working-hour losses estimated for those countries.

In addition, **the cumulative effects of fiscal policy on economic activity are likely to be larger in the long run than the short-term impact analysed here** (for the second quarter of 2020). Empirical evidence shows that fiscal policy has an important dynamic component beyond the immediate effect that it has on economic activity, which is excluded in this exercise.[21]

Global imbalance in fiscal stimulus: A "stimulus gap" exercise

Although expansionary fiscal policy has played a significant role in supporting economic activity and preventing working hours from falling further, global fiscal stimulus has been concentrated in high-income countries, as already highlighted in the fifth edition

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18 Fiscal stimulus programmes are defined in this context as additional government spending, income transfers or forgone revenue (tax cuts). The recipients of such transfers and tax cuts are households, workers and firms.

19 It should be noted that the analysis does not allow one to infer a causal relationship between fiscal stimulus and economic activity, as there are multiple sources of estimation bias. Nevertheless, the estimates presented here provide valuable insights into the effects of fiscal stimulus and related future policies.

20 In contrast, the estimated working-hour losses are 12 per cent for an average country if it were to have implemented the largest stimulus programme in the sample. The estimates suggest that fiscal policy was already helping to mitigate working-hour losses in the second quarter (it was possible to avoid almost 60 per cent of losses according to the estimates). Moreover, the overall impact of current stimulus packages and potential new rounds is expected to be substantially larger than the immediate effect registered during the second quarter of 2020.

21 It is well known that fiscal policy can have a contemporaneous effect on economic activity and output. Nonetheless, a large share of the cumulative impact of changes in fiscal policy takes place not in the immediate aftermath of implementation (say, one quarter) but over a horizon that spans several years. See, for instance: Christina D. Romer and David H. Romer, "The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks", *American Economic Review* 100, No. 3 (2010), 763–801; Olivier Blanchard and Roberto Perotti, "An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output", *The Quarterly Journal of Economics* 117, No. 4 (2002), 1329–1368.

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▶ **Figure 7. Relationship between fiscal stimulus (% of GDP) and working-hour losses (%) in the second quarter of 2020, selected countries**

Note: The figure plots the relationship between working-hour losses (%) and fiscal stimulus (percentage of GDP on a log scale) in 34 countries for which the necessary data are available. The country-level observations are shown as black dots. The red line represents the linear fit (the average working-hour losses as a linear function of fiscal stimulus). Finally, the shaded grey area indicates the 95 per cent confidence interval of the linear fit. See Technical Annex 4 for further details of the multiple regression performed.

of the *ILO Monitor*. **Fiscal space remains limited in emerging and developing economies, especially in low-income countries**. This imbalance between countries is even more striking when the amount of fiscal stimulus is compared with the magnitude of labour market disruptions.

The latest data from the Oxford COVID-19 Government Response Tracker database (as at 2 September 2020) show that the total value of announced global fiscal stimulus packages is around US$9.6 trillion, or approximately 11 per cent of global GDP in 2019. If one focuses on the measures relating to government expenditure and tax relief (the so-called "above-the-line" measures), which have the most immediate impact on economic activity, the stimulus is estimated to amount to around US$7.08 trillion.[22]

The aim of this exercise is to directly compare the size of fiscal stimulus with the labour market damage due to COVID-19. One way of doing this is to convert the dollar value of stimulus measures into FTE jobs using labour productivity as follows:

▶ First, fiscal stimulus is divided by output per worker (in 2019 US$) at the country level, which gives an estimate of the number of employed equivalent (in terms of their output) to the level of fiscal stimulus measures. This is carried out for 169 countries that together account for over 99 per cent of global employment in 2019.

▶ Secondly, the derived employment figures are adjusted using estimates for country-level hours of work and converted to FTE jobs (assuming a working week of 48 hours). This enables a direct comparison of FTE stimulus with the average FTE job losses over the first three quarters of 2020.

For greater comparability across regions, the results are shown in percentage terms (hours lost as a percentage of total hours worked in the fourth quarter of 2019 and the equivalent stimulus value). The results show that global fiscal stimulus is equivalent to 4.3 per cent of total working hours in 2019. In comparison, over the first three quarters of 2020,

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22 See IMF, *Fiscal Monitor: Policies to Support People during the COVID-19 Pandemic*, April 2020, box 1.1.

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▶ **Figure 8. Working hours lost (% of total, average over first three quarters of 2020) and equivalent fiscal stimulus value**
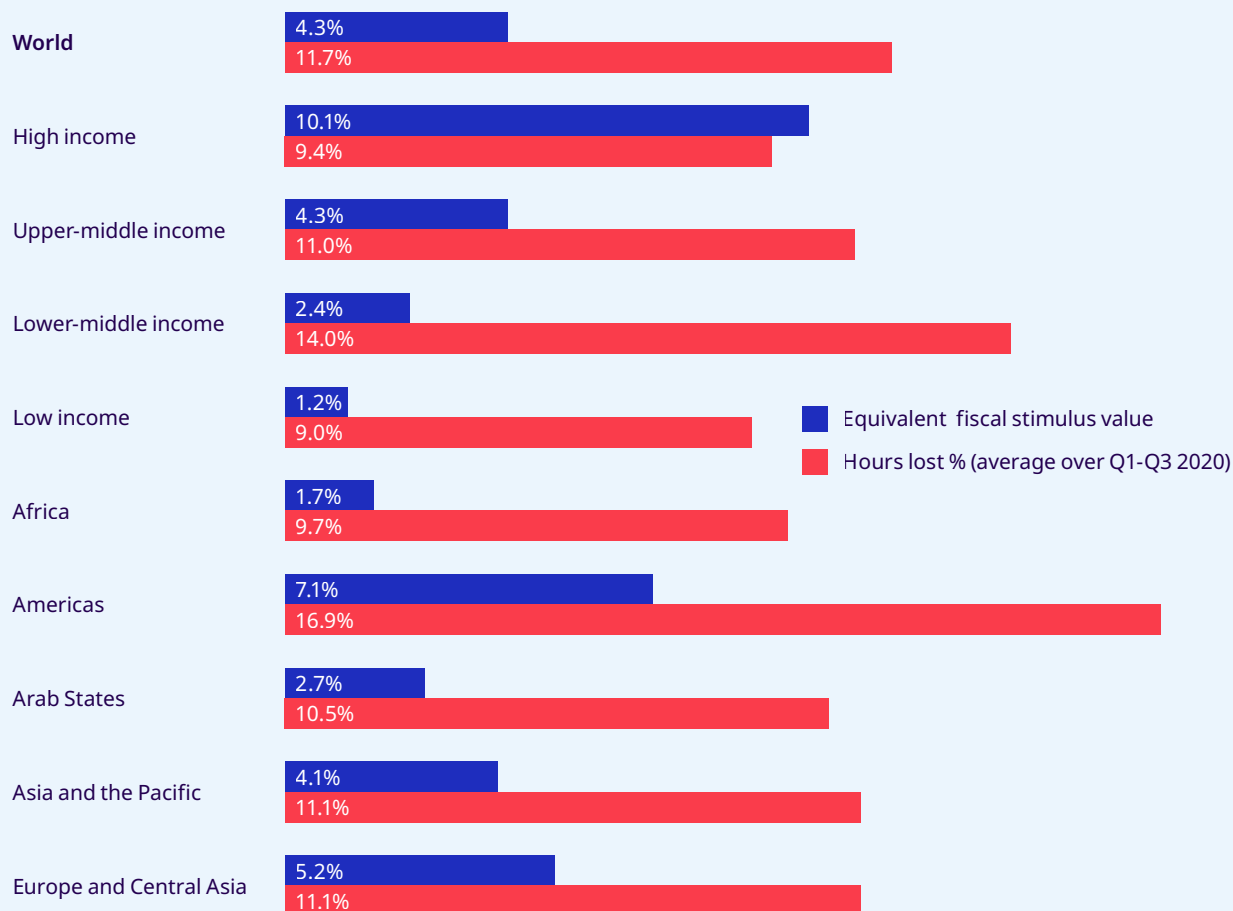
Note: The basis for calculating equivalent fiscal stimulus is average output per FTE employment at 48 hours per week.

Source: ILO estimates based on ILOSTAT, IMF and Oxford Coronavirus Government Response Tracker database.

the average global working-hour losses were around 11.7 per cent.[23]

More importantly, **there is wide variation across country income groups in the value of fiscal stimulus packages relative to the labour market damage that has occurred** (see figure 8). For instance, in high-income countries, the announced fiscal stimulus measures equate to 10.1 per cent of total working hours, while estimated working-hour losses averaged 9.4 per cent. **The relative size of fiscal stimulus compared with working-hour losses is much smaller in developing countries**. In low-income countries, for instance, the stimulus is

equivalent to only 1.2 per cent of total working hours, while working-hour losses averaged 9 per cent.

This contrasting situation between advanced and developing economies enables one to assess the magnitude of the fiscal stimulus gap in the developing world relative to the labour market damage – that is, what amount of additional resources would low-income countries need to reach a ratio of stimulus to working-hour losses similar to that seen in high-income countries?

Based on the analysis presented above, **the fiscal stimulus gap currently stands at US$982 billion in low-income and lower-middle-income countries,**

23 Potential multiplier effects are not considered either for fiscal stimulus or for working-hour losses. It is also worth emphasizing that the above-the-line measures on which the analysis is based do not take into account existing social protection schemes: they cover only new fiscal resources deployed in response to the pandemic.

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where fiscal space is most limited (US$45 billion in low-income countries and US$937 billion in lower-middle-income countries). This gap is equivalent to approximately 14 per cent of aggregate GDP for these countries in 2019. Significantly, **in low-income countries, the stimulus gap amounts to less than 1 per cent of the total value of the above-the-line fiscal stimulus measures announced by high-income countries**.

It is important to note that in contrast to many emerging and advanced economies, developing countries tend to have far more modest social protection schemes to compensate for job-related income losses, which further widens the gap between the policy response and the impact of the crisis in these countries. Moreover, many of the fiscal measures announced in developing countries are being funded through a reallocation of existing budgetary resources, including reductions in capital expenditure and the public sector wage bill.[24] Taken together, these figures provide a stark quantitative measure of the challenges faced by low-income countries, in particular the least developed economies, as they attempt to mitigate the economic and labour market impacts of the pandemic.

▶ Part III. Looking ahead

The analysis presented in this edition of the *ILO Monitor* shows the **continuing and devastating impacts of the pandemic on jobs and labour income since early 2020, and the massive disruptions in the labour market that will persist into the fourth quarter**. In response, policymakers will need to maintain support to employment and incomes over the coming months and well into 2021, and to address the following key challenges.

First, **maintaining the right balance and sequence of health and economic and social policy interventions continues to be crucial**. Infection cases have been increasing around the world, which in turn has led many countries to reintroduce restrictions on economic activities. Ill-advised or premature loosening of precautionary health measures creates a risk of prolonging the pandemic and thereby worsening its labour market impact.

Second, **policy interventions need to be made on a scale which corresponds to the magnitude of labour market disruptions**. Losses in working hours and labour income have been massive during the pandemic and as financial constraints increase, policymakers will face the challenge of sustaining policy responses to counter the danger of growing poverty, inequality, joblessness and exclusion. This will require particular attention to the effectiveness and efficiency of the investments they make.

Third, it is critical that **policy measures should provide the fullest possible support for vulnerable and hard-hit groups, including migrants, women, young people and informal workers**. This edition confirms, drawing on the latest data, that employment losses are larger for women than for men. At the same time, the large increase in inactivity means that policymakers will need to tailor policy responses, including continued income support and efforts to assist with workers' return to employment, to avoid large-scale and long-term marginalization from labour markets – ensuring that no-one is left behind.

Fourth, **filling the stimulus gap in emerging and developing countries can only be achieved through greater international solidarity**. As analysed in this edition, most developing countries have not been able to mobilize the necessary resources to support policy measures at the level that richer economies have, which has created a large "stimulus gap". Tackling these constraints would require further debt relief and debt restructuring while scaling up official development assistance (ODA) to ensure that resources are available to finance the response to the ongoing health and labour market crises in developing countries. At the national level, policymakers need to make sure that fiscal measures announced are delivered rapidly and efficiently. The United Nations has called for "providing strategic priority of public financing to policies and programmes that can produce better outcomes in terms of jobs and income support, especially for people in vulnerable situations".[25]

Fifth, **social dialogue continues to be an important and effective mechanism for policy responses to the crisis**. As the pandemic persists, the recourse to social dialogue that strongly characterized the early response to it needs to be maintained, particularly as the challenges outlined above become increasingly complex.

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24 See ILO, *COVID-19, Jobs and the Future of Work in the Least Developed Countries: A (Disheartening) Preliminary Account*, forthcoming.

25 United Nations, *Financing for Development in the Era of COVID-19 and Beyond: Menu of Options for the Consideration of Ministers of Finance: Part II*, September 2020, p. 9.

▶ Statistical annex

▶ **Table A1. Projected working-hour losses, world and by income group and region, fourth quarter of 2020** (full-time equivalent jobs and percentage)

Reference area	Equivalent number of full-time jobs (48 hours/week) (millions)	Percentage hours lost (%)
Scenario: Baseline		
World	**245**	**8.6**
Low-income countries	17	7.7
Lower-middle-income countries	105	10.4
Upper-middle-income countries	90	7.6
High-income countries	33	7.2
Africa	29	7.9
Americas	55	14.9
Arab States	6	9.3
Asia and the Pacific	125	7.3
Europe and Central Asia	28	8.5
Scenario: Pessimistic forecast		
World	**515**	**18.0**
Low-income countries	29	13.2
Lower-middle-income countries	225	22.0
Upper-middle-income countries	200	17.0
High-income countries	65	14.0
Africa	55	14.7
Americas	100	26.2
Arab States	10	16.1
Asia and the Pacific	305	17.4
Europe and Central Asia	50	15.6
Scenario: Optimistic forecast		
World	**160**	**5.7**
Low-income countries	11	5.1
Lower-middle-income countries	65	6.5
Upper-middle-income countries	60	5.2
High-income countries	24	5.2
Africa	19	5.0
Americas	38	10.1
Arab States	4	6.0
Asia and the Pacific	85	4.8
Europe and Central Asia	19	5.7

Note: Values of full-time equivalent (FTE) jobs lost above 50 million are rounded to the nearest 5 million; values below that threshold are rounded to the nearest million. The equivalent losses in full-time jobs are presented to illustrate the magnitude of the estimates of hours lost. The FTE values are calculated on the assumption that reductions in working hours were borne exclusively and exhaustively by a subset of full-time workers, and that the rest of workers did not experience any reduction in hours worked. The figures in this table should not be interpreted as numbers of jobs actually lost or as actual increases in unemployment.

Source: ILO scenario projection (see Technical Annex 2).

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▶ **Table A2. Labour income losses during the first three quarters of 2020, by region and subregion**
(US dollars and percentage)

	Labour income loss (billion US$, 2019 value)	Labour income loss (percentage of labour income)	Labour income loss (percentage of GDP)
Africa	115	10.7	5.2
Northern Africa	40	11.8	4.9
Sub-Saharan Africa	75	10.2	5.4
Americas	1 235	12.1	6.8
Latin America and the Caribbean	495	19.3	10.1
Northern America	735	9.4	5.5
Arab States	45	10.2	3.4
Asia and the Pacific	870	9.9	4.1
Eastern Asia	480	7.2	3.3
South-Eastern Asia and the Pacific	140	9.5	3.9
Southern Asia	250	17.6	8.1
Europe and Central Asia	1 205	10.6	6.0
Northern, Southern and Western Europe	955	10.7	6.2
Eastern Europe	105	8.0	3.9
Central and Western Asia	145	16.3	6.7

Note: Labour income losses in billion US dollars are rounded to the nearest 5 billion. The values for subregions may not quite add up to the total value for the corresponding region because of rounding.

Source: ILO estimates (see Technical Annex 3).

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▶ **Table A3. Working-hour losses and fiscal stimulus, world and by region and subregion, average for first three quarters of 2020** (full-time equivalent jobs)

	Hours lost (% of total, with baseline = Q4/2019, seasonally adjusted)	Number of full-time equivalent (FTE) jobs lost (48 hours/week) (millions)	Value of fiscal stimulus measures, expressed as FTE jobs (millions)	Difference between FTE jobs lost and FTE-job equivalent of fiscal stimulus measures (millions)	Ratio of FTE-job equivalent of fiscal stimulus measures to FTE jobs lost
World	11.7	332	123	209	0.37
High-income countries	9.4	43	46	–3	1.08
Upper-middle-income countries	11.0	128	50	78	0.39
Lower-middle-income countries	14.0	143	25	118	0.17
Low-income countries	9.0	19	3	17	0.14
Africa	9.7	36	6	29	0.18
Northern Africa	12.1	7	2	5	0.30
Sub-Saharan Africa	9.2	28	4	24	0.15
Central Africa	9.5	5	0	4	0.06
Eastern Africa	9.3	12	2	11	0.14
Southern Africa	11.6	2	1	1	0.38
Western Africa	8.6	9	1	8	0.15
Americas	16.9	63	26	37	0.42
Latin America and the Caribbean	20.9	50	10	39	0.21
Central America	22.2	15	1	14	0.05
South America	21.2	33	10	23	0.29
Northern America	9.9	13	16	–3	1.19
Arab States	10.5	6	1	4	0.25
Asia and the Pacific	11.1	192	72	120	0.37
Eastern Asia	7.5	61	43	17	0.71
South-Eastern Asia and the Pacific	10.2	30	14	16	0.47
South-Eastern Asia	10.5	29	13	16	0.44
Southern Asia	16.2	102	14	87	0.14
Europe and Central Asia	11.1	36	17	19	0.47
Northern, Southern and Western Europe	11.3	18	11	7	0.61
Northern Europe	9.5	4	2	1	0.65
Southern Europe	15.7	7	2	6	0.23
Western Europe	9.3	6	7	0	1.02
Eastern Europe	8.2	9	5	4	0.54
Central and Western Asia	15.5	9	2	8	0.17

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▶ Technical annexes

Annex 1. Working-hour losses: The ILO's nowcasting model

The ILO has continued to monitor the labour market impacts of the COVID-19 crisis using its "nowcasting" model. This is a data-driven statistical prediction model that provides a real-time measure of the state of the labour market, drawing on real-time economic and labour market data. In other words, no scenario is specifically defined for the unfolding of the crisis; rather, the information embedded in the real-time data implicitly defines such a scenario. The target variable of the ILO nowcasting model is hours worked[26] – more precisely, the decline in hours worked that can be attributed to the outbreak of COVID-19. To estimate this decline, a fixed reference period is set as the baseline, namely, the fourth quarter of 2019 (seasonally adjusted). The model produces an estimate of the decline in hours worked during the first, second and third quarters of 2020 relative to this baseline. (The figures reported should therefore not be interpreted as quarterly or inter-annual growth rates.) In addition, to compute the full-time employment (FTE) equivalents of the percentage decreases in working hours, a benchmark of weekly hours worked before the COVID-19 crisis is used.

For this edition of the *ILO Monitor*, the information available to track developments in the labour market has increased substantially. In particular, the following data sources have been incorporated into the model: additional labour force survey data for the first quarter[27] and the second quarter of 2020; and additional administrative data on the labour market (e.g. registered unemployment and up-to-date mobile phone data from Google Community Mobility Reports). Additionally, the most recent Google Trends data and values of the COVID-19 Government Response Stringency Index (hereafter "Oxford Stringency Index"), along with data on the incidence of COVID-19, have been used in the estimates. Principal component analysis was used to model the relationship of these variables with hours worked. Drawing on available real-time data, the modelling team estimated the historical statistical relationship between these indicators and hours worked, and used the resulting coefficients to predict how hours worked will change in response to the most recent observed values of the nowcasting indicators. Multiple candidate relationships were evaluated on the basis of their prediction accuracy and performance around turning points to construct a weighted average nowcast. For countries for which high-frequency data on economic activity were available, but either data on the target variable itself were not available or the above methodology did not work well, the coefficients estimated and data from the panel of countries were used to produce an estimate.

An indirect approach was applied for the remaining countries: this involves extrapolating the relative hours lost from countries with direct nowcasts. The basis for this extrapolation was the observed mobility decline from the Google Community Mobility Reports[28] and the Oxford Stringency Index, since countries with comparable drops in mobility and similarly stringent restrictions are likely to experience a similar decline in hours worked. From the Google Community Mobility Reports, an average of the workplace and "retail and recreation" indices was used. The stringency and mobility indices were combined into a single variable[29] using principal component analysis.[30] Additionally, for countries without data on restrictions, mobility data, if available, and up-to-date data on the incidence of COVID-19 were used to extrapolate the impact on hours worked. Because of countries' different practices in counting cases, the more homogenous concept of deceased patients was used as a proxy of the extent of the pandemic. The variable was computed at an equivalent monthly frequency, but the data were updated daily, the source being the European Centre for Disease Prevention and Control. Finally, for a small number of countries with no readily available data at the estimation time, the regional average was used to impute the target variable. Table A4 summarizes the information and statistical approach used to estimate the target variable for each country.

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26 Hours actually worked in the main job.

27 Including data from Eurostat for a large number of European countries.

28 Adding mobility decline as a variable makes it possible to strengthen the extrapolation of results to countries with more limited data. The Google Community Mobility Reports are used alongside the Oxford Stringency Index to take into account the differential implementation of containment measures. This variable has only partial coverage for the first quarter, and so for the estimates for that quarter only the stringency and COVID-19 incidence data are used. The data source is available at: https://www.google.com/covid19/mobility/.

29 Missing mobility observations were imputed on the basis of stringency.

30 To make up for data scarcity in the third quarter, and also to take advantage of the time-series dimension that mobility and stringency data contain, a mixed approach was taken for countries for which a direct nowcast of the third quarter was available. In particular, the estimate was obtained from the average of the direct nowcast of the third quarter and the extrapolation based on the principal component of mobility and stringency. The extrapolation was corrected as a function of the observed difference in the second quarter between the extrapolation and the direct nowcast for each individual country.

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▶ **Table A4. Approaches used to estimate working-hour losses**

Approach	Data used	Reference area
Nowcasting based on high-frequency economic data (direct or panel approach)	High-frequency economic data, including: labour force survey data; administrative register labour market data; Purchasing Managers Index (country or group); Google Trends data; national accounts data; consumer and business confidence surveys	Argentina, Australia, Austria, Belgium, Bosnia and Herzegovina, Brazil, Bulgaria, Canada, Chile, China, Colombia, Costa Rica, Croatia, Cyprus, Czechia, Denmark, France, Georgia, Germany, Greece, Hong Kong (China), Hungary, Iceland, Iran (Islamic Republic of), Ireland, Israel, Italy, Japan, Latvia, Lithuania, Luxembourg, Malaysia, Mexico, Mongolia, Netherlands, New Zealand, North Macedonia, Norway, Philippines, Poland, Portugal, Republic of Korea, Romania, Saudi Arabia, Serbia, Singapore, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Thailand, Turkey, Ukraine, United Kingdom, United States, Viet Nam
Extrapolation based on mobility and containment measures	Google Community Mobility Reports (Q2/2020 and onwards) and/or Oxford Stringency Index	Afghanistan, Albania, Algeria, Angola, Azerbaijan, Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belize, Benin, Bhutan, Bolivia (Plurinational State of), Botswana, Brunei Darussalam, Burkina Faso, Burundi, Cabo Verde, Cambodia, Cameroon, Central African Republic, Chad, Congo, Cuba, Côte d'Ivoire, Democratic Republic of the Congo, Djibouti, Dominican Republic, Ecuador, Egypt, El Salvador, Eritrea, Estonia, Eswatini, Ethiopia, Fiji, Finland, Gabon, Gambia, Ghana, Guam, Guatemala, Guinea, Guinea Bissau, Guyana, Haiti, Honduras, India, Indonesia, Iraq, Jamaica, Jordan, Kazakhstan, Kenya, Kuwait, Kyrgyzstan, Lao People's Democratic Republic, Lebanon, Lesotho, Liberia, Libya, Macao (China), Madagascar, Malawi, Mali, Malta, Mauritania, Mauritius, Morocco, Mozambique, Myanmar, Namibia, Nepal, Nicaragua, Niger, Nigeria, Occupied Palestinian Territory, Oman, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Puerto Rico, Qatar, Republic of Moldova, Russian Federation, Rwanda, Senegal, Sierra Leone, Solomon Islands, Somalia, South Sudan, Sri Lanka, Sudan, Suriname, Syrian Arab Republic, Tajikistan, Timor-Leste, Togo, Trinidad and Tobago, Tunisia, Turkmenistan, Uganda, United Arab Emirates, United Republic of Tanzania, Uruguay, Uzbekistan, Vanuatu, Venezuela (Bolivarian Republic of), Yemen, Zambia, Zimbabwe
Extrapolation based on the incidence of COVID-19	COVID-19 incidence proxy, detailed subregion	Armenia, Comoros, Equatorial Guinea, French Polynesia, Maldives, Montenegro, New Caledonia, Saint Lucia, Saint Vincent and the Grenadines, Sao Tome and Principe, United States Virgin Islands, Western Sahara
Extrapolation based on region	Detailed subregion	Channel Islands, Democratic People's Republic of Korea, Samoa, Tonga

Notes: (1) The reference areas included correspond to the territories for which ILO modelled estimates are produced. **(2)** Countries and territories are classified according to the type of approach used for Q2/2020. **(3)** When modelling the impact for China during Q1/2020, the dependent variable of the regression (hours lost) and the Google Trends data for the countries that are available from Q2 were used to extrapolate the result for that country. This is because the extrapolation needs to be performed for a quarter in which, on average, the target country is affected to a significant extent. Additionally, given that no new information for China during Q1 has become available since the third edition of the *ILO Monitor*, the estimate for Q1 has not been updated. For the Philippines, the ad hoc release of the April 2020 Labor Force Survey was used; the data were benchmarked against April 2019 data; the results for April 2020 were directly extrapolated to May and June using Google Community Mobility Reports data. For five countries (Denmark, Hungary, Romania, Slovakia and Ukraine) the results of the direct nowcast were deemed unsatisfactory and were replaced by data on decreases in output from national accounts data.

The latest data update spanned the period from 21 to 28 August 2020, depending on the source. Because of 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. For instance, an emerging pattern – unusual by historical standards – is an above-average reduction of hours worked in developing countries, as discussed in the main text. This pattern has been confirmed since the last edition of the *ILO Monitor*; it continues to imply a strong downward risk for global work activity. Furthermore, at the time of estimation, consistent time series of readily available and timely high-frequency indicators, including labour force survey data, remained scarce. These limitations result in a high overall degree of uncertainty. For these reasons, the estimates are being regularly updated and revised by the ILO.

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Annex 2. Forecasts for the fourth quarter of 2020

The ILO has developed a projection model to forecast hours worked for the fourth quarter of 2020. The variable of interest is the average number of hours worked per person in the working-age population, as in the nowcasting model. The model specifies that the change in the number of hours is a function of the gap in the number of hours worked with regard to a long-term trend of the growth of GDP and its lag, and that this change is an indicator of being in a recovery period (see equation 1 below).

$$\Delta h_{(i,t)} = \beta_{(0,i)} + \beta_{(1,i)}\, gap_{(i,t)} + \beta_{(2,i)}\, \Delta GDP_{(i,t)} + \beta_{(3,i)}\, \Delta GDP_{(i,t-1)} + \beta_4\, Recovery_{(i,t)} \qquad (1)$$

The model is run using multilevel mixed-effects methods, meaning that the distribution of the slope parameters for the gap and GDP growth is also estimated. This makes it possible to retrieve the country-specific random effects so that for every country we obtain specific deviations of the coefficients around the central coefficient estimated for the panel. To forecast for the fourth quarter of 2020, we need to set up the model on the basis of a quarterly frequency. Using a sample of 52 countries with available data at the quarterly frequency, we estimate the coefficients of equation (1) and the corresponding country-specific random effects. Moreover, we also estimate equation (1) using the full sample of countries at the annual frequency to extract the country-specific random effects, which we then apply to the central coefficients, estimated previously using quarterly data, to obtain country-specific coefficients for all countries. For the coefficient indicating the presence of a recovery period (β_4), no random effect could be estimated: it is therefore the same for all countries.

The gap in the number of hours towards a long-run trend is estimated by fitting a long-run trend of hours worked using a Butterworth time-series filter. We also estimate the speed of adjustment of the long-run trend to new observations of hours worked, and apply that adjustment to project the evolution of the long-run trend in our scenarios. As the crisis continues, the implicit target for closing the gap is adjusted downwards slightly.

The baseline scenario of quarterly GDP growth is taken from the Economist Intelligence Unit database as at 28 August 2020. For other countries without available quarterly growth projections, a path of GDP during the year 2020 is estimated that is consistent with (a) the estimated loss of hours in the first and second quarters, (b) the relative path in countries with available data and (c) the annual economic growth projection from the Economist Intelligence Unit database. The baseline scenario in this edition of the *ILO Monitor* takes into account the continued depressing effect of the pandemic on the labour market, which slows the recovery to a greater extent than what one might expect from historical precedents. Specifically, we lower the coefficient β_1, which dictates how strongly hours worked react to the gap towards the long-run trend, to the bottom 15th percentile of the historically estimated distribution, as opposed to its mean.

In addition to the baseline scenario, two alternative scenarios are used in the modelling. The pessimistic scenario reflects the analysis conducted for the June 2020 issue of the *OECD Economic Outlook*, in which the resurgence of COVID-19 in the fourth quarter of 2020 necessitates a second wave of economic restrictions. The scenario is modelled by assuming a loss in hours in the fourth quarter in relation to the loss in the quarter with the largest loss thus far that is proportional to the relative loss of GDP, as estimated by the OECD. Furthermore, the average negative GDP shock estimated by the OECD for the fourth quarter is also applied to the non-OECD countries.

For the optimistic scenario, the underlying assumption is that workers return quickly to their activity despite the continuing output gap. Such a job-driven recovery will boost demand and create further employment. We model this by increasing the rate of reaction to the gap in hours worked (the coefficient β_1 described above) to the upper 30th percentile.

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Annex 3. Methodology used to estimate the labour income loss

The labour income losses presented in this edition of the *ILO Monitor* do not equate to household income losses, as households also have other sources of income. During this crisis, the most important components in variation of household incomes of workers are the labour income loss and the extent to which labour income is replaced through social security benefits or some other scheme (see figure A1). Other sources, such as returns on financial investments, play only a minor role for most workers' households. The returns from the economic activity of the self-employed comprise both labour income and implied capital income (from physical and non-physical capital). Both income shares fall jointly when working hours are reduced.

▶ **Figure A1. Simplified framework of labour income losses**
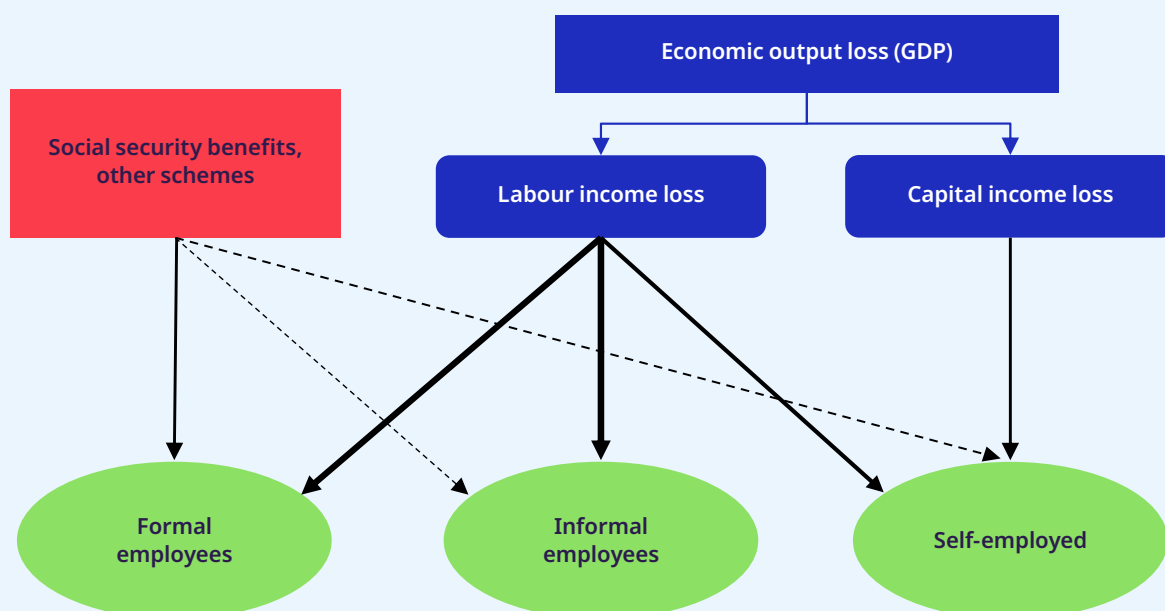
The labour income lost in the economy is given by the product of working-hour losses and the labour income of affected workers. Table 2 in the second edition of the *ILO Monitor* highlights the heterogeneous impact of the crisis across the sectors of the economy, with different sectors having a different risk of working-time losses and different incomes. In estimating the labour income lost we therefore use the estimated relative working-hour losses across sectors, the estimates of relative labour incomes across sectors, and the estimates of total labour income in the economy, following equation (1):

$$\Delta LI_T = \sum_s \Delta h_s SH_s w_s SH_{LI} GDP \qquad (1)$$

In (1), Δh_s is the relative drop in total hours worked in the sector, SH_s is the employment share of the sector in overall employment, w_s is the ratio of the average labour income per worker in the sector to the average labour income per worker in the economy, SH_{LI} is the labour income share in the economy, and GDP is the gross domestic product. The product of the last two terms gives the total labour income, while the first three terms indicate by how much labour income falls. The ILO has already produced estimates of the sectoral share of employment and the labour income share for all countries, while estimates of GDP for 2019 are taken from the World Bank's World Development Indicators database. Estimating the change in labour incomes requires the estimation of two new indicators: the relative sectoral loss of hours worked and the relative sectoral labour incomes. The methodology used is described below.

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The estimate for the relative hours of work lost per sector is based on the total hours worked in a sector in the second quarter of 2020, which is observed for 11 middle- and high-income countries. The drop in this value compared with a projection of the pre-crisis trend provides the relative sectoral loss of hours worked for those countries. The prediction for the remaining countries is the simple mean across those real observations, since the number of observations is too low for any other modelling approach. In addition, the relative loss of hours worked per sector is adjusted so that the overall number of hours lost corresponds to the overall estimate of working-hour losses from the ILO nowcasting model. Altogether, the relative loss of hours across sectors tallies well with the risk matrix presented in table 2 in the second edition of the *ILO Monitor*.

The relative labour income across sectors is determined using the ILO database of average wages of employed by economic activity – a database covering 129 countries with a total of almost 1,000 observations per sector. Relative sectoral wages are predicted for countries with missing data (and also for 2019 for countries where the time series stops before that year), using a modelling approach of cross-validation that minimizes the expected prediction error. Those predictions are then adjusted so that the employment-weighted sum of relative sectoral labour incomes equals to unity.

Annex 4. Methodology used to estimate the impact of fiscal policies on labour markets

Inferring the economic effect of fiscal stimulus is a central topic in economics, and a wide range of theoretical and empirical approaches are used for that purpose. Given that changes in fiscal policy are plausibly related to the state of the economy, the causal effect that they have on economic conditions is notoriously difficult to measure.[31] This difficulty is compounded by complex policy actions: as public health measures reduce economic activities, expansionary fiscal measures (for example, job retention schemes and supplementary unemployment benefit programmes) are adopted to tackle the economic damage caused.

Estimation procedure

Given the challenges in measuring the impact of stimulus programmes, the strategy used in the analysis for this edition of the *ILO Monitor* focuses on measuring whether expansive policies have already had an effect on economic activity, rather than on the cumulative impact that fiscal policy will eventually have.

Let FP_i denote an index that defines the intensity of expansionary fiscal policy of country *i*. We are interested in measuring the effect of this index on the decline in economic activity during the second quarter. If ∇Y_i denotes the decline of economic activity, expressed as a percentage, due to COVID-19 during the second quarter of 2020 relative to the baseline, namely the fourth quarter of 2019, in a given country, we need to find an estimate of the parameter γ in the following expression:

$$\nabla Y_i = \gamma \cdot FP_i + u_i$$

where u_i denotes the effect of all other factors that drive the loss of economic activity. One key difficulty in estimating γ, the effect of expansionary fiscal policy on economic activity, is that the disruption in consumption and production due to the public health restrictions introduced and the vulnerability of the economic structure to the COVID-19 shock are very plausibly related to the fiscal policy. In order to estimate the desired effect, we therefore need to decompose the rest of the drivers of the economic shock. In particular, we assume:

$$u_i = \alpha + \beta \cdot dhr_i + \delta \cdot ear_i + \varepsilon_i$$

which states that the economic loss attributable to all other drivers can be expressed as the sum of four elements: a constant, α; the effect of a variable capturing the disruption on consumption and production activities caused by the public health situation and restrictions, dhr_i; the effect of the employment share in high risk sectors, ear_i; and a residual term, ε_i. We expect that countries with more stringent public health restrictions, and hence greater disruption to normal consumption and production, will experience greater decreases in economic activity[32] –

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31 See, for example: Olivier J. Blanchard and Daniel Leigh, "Growth Forecast Errors and Fiscal Multipliers", *American Economic Review* 103, No. 3 (2013), 117–120; Emi Nakamura and Jón Steinsson, "Fiscal Stimulus in a Monetary Union: Evidence from US Regions", *American Economic Review* 104, No. 3 (2014), 753–792; Christina D. Romer and David H. Romer, "The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks", *American Economic Review* 100, No. 3 (2010), 763–801.

32 This is not tautological: difficulties in the production or consumption of certain goods and services could be offset by consumption and production of other goods and services.

all else being equal. Similarly, we expect countries with larger shares of employment in high-risk sectors to experience greater decreases in activity. Finally, the term ε_i captures all other potential drivers. Hence, we can express the loss in economic activity as:

$$\nabla Y_i = \alpha + \gamma \cdot FP_i + \beta \cdot dhr_i + \delta \cdot ear_i + \varepsilon_i$$

Using this empirical strategy, we measure the association between stimulus programmes and economic losses during the second quarter of 2020, after controlling for the disruption caused by public health restrictions and the share of employment at the highest risk of disruption due to the COVID-19 shock. This can be more succinctly expressed as obtaining the ordinary least squares (OLS) estimate of γ, $\hat{\gamma}$. To estimate the parameter, we simply run an OLS regression following the expression above.

For this measurement to have a causal interpretation, it would be necessary that ε_i (all other economic drivers of activity loss) be uncorrelated with our explanatory variables (FP_i, dhr_i, ear_i). Adapting the empirical strategy to plausibly ensure that this condition (or similar conditions) is fulfilled, is beyond the scope of the current exercise. We therefore do not claim to have found a causal relationship. Instead, we would argue that the association detected after controlling for key drivers that is very likely related to the implementation of fiscal stimulus – the public health restrictions and the share of employment most at risk – is highly informational. Another key driver of economic activity potentially related to stimulus programmes, monetary policy, has not been taken into account. It is common practice in the macroeconomic literature to assume that monetary policy shocks do not affect output contemporaneously.[33] Because of the time horizon selected for the analysis (the second quarter of 2020), we assume that changes in monetary policy would not have an impact on the activity levels of the second quarter.

It is important to emphasize that the effects of fiscal policy on economic activity during the period of analysis are likely to be smaller than in a less exceptional context. There are two key reasons for this. First, given the time horizon considered, the current analysis excludes any potential dynamic effects. The effect of fiscal stimulus can certainly have a contemporaneous effect on economic output and activity. However, a key element in the multiplier effect of fiscal stimulus relies on dynamic effects, which take time (for instance, several quarters) to materialize.[34] Secondly, during the second quarter of 2020, strict public health restrictions were in place. These restrictions made more difficult or impeded altogether the production of certain goods and services. Hence, the multiplier may be smaller than usual.[35] Furthermore, these restrictions in supply might cause the dynamic effects of stimulus (instead of the contemporaneous effect) to play a larger role than usual. These two mechanisms would limit the estimated effect of fiscal policy even if all the assumptions from our empirical strategy were shown to hold true. For this reason, the present exercise aims to provide evidence only with regard to the hypothesis that the expansionary fiscal policies already implemented have palliated the losses in economic activity. The estimates obtained cannot therefore be used to assess what the total effect of fiscal stimulus programmes will be or to draw normative conclusions about the adequate size of such programmes.

Data used

As a proxy of economic activity, we use working-hour losses for selected countries during the second quarter of 2020. The countries are selected on the following basis: only reported observations or estimates from the direct nowcasting model are included.[36] To measure fiscal stimulus we use the (log of the) ratio of stimulus to annual GDP. Finally, we use two variables to take into account how large the COVID-19 economic shock would be if the influence of fiscal policy were excluded. The first is the decline in mobility to workplace and retail stores (an average of the two) from Google Community Mobility Reports. This variable captures reasonably well the degree to which the public health situation (the state of the pandemic itself and the restrictions taken to combat it) affects normal production and consumption activities.[37] Hence, it is reasonable to assume that we should expect greater

33 See: Lawrence J. Christiano, Martin Eichenbaum and Charles L. Evans, "Monetary Policy Shocks: What Have We Learned and to What End?", in *Handbook of Macroeconomics*, Vol. 1, Part A, ed. John B. Taylor and Michael Woodford, 65–148 (Boston, MA: Elsevier, 1999).

34 See: Christina D. Romer and David H. Romer, "The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks", *American Economic Review* 100, No. 3 (2010), 763–801.

35 See: Veronica Guerrieri, Guido Lorenzoni, Ludwig Straub and Iván Werning, "Macroeconomic Implications of COVID-19: Can Negative Supply Shocks Cause Demand Shortages?" NBER Working Paper No. 26918, April 2020.

36 See Technical Annex 1 for further details on the types of estimates.

37 This variable, given that is derived from behavioural observation, is likely to be more internationally comparable than variables based on normative approaches, such as the Oxford Stringency Index. In particular, we can observe systematic differences across income groups in mobility declines associated with stringency of public health measures, which can be attributed to the degree of compliance. See Julien Maire, "Why Has COVID-19 Lockdown Compliance Varied between High- and Low-Income Countries?", Peterson Institute for International Economics, 20 August 2020. We have run tests including both variables (the mobility decline and the stringency index) in the regression: the estimates obtained are similar.

economic damage in countries where the decline in this variable is larger. The second variable used is the share of employment in high-risk sectors.[38] The aim of this variable is to capture the labour market vulnerability of a given country to COVID-19: countries with higher shares of employment in at-risk sectors are expected to experience greater decreases in hours worked.

The following table summarizes the proxies used for each variable and their data sources:

Represented variable	Symbol	Data used
Decline in activity	∇Y_i	Working-hour losses during the second quarter of 2020. Observation or direct nowcast only (variable influenced only by economic activity indicators). Source: ILO nowcasting model.
Index of fiscal stimulus	FP_i	Log of value of above-the-line measures expressed as a share of GDP in 2019. Source: International Monetary Fund.
Index of disruption caused by public health situation and restrictions	dhr_i	Mobility decline, average of workplace and retail mobility. Source: Google Community Mobility Reports.
Share of employment most at risk	ear_i	Share of employment in the four sectors identified as being at highest risk. Source: ILO modelled estimates.

Regression set-up and results

The results from running an OLS regression following:

$$\nabla Y_i = \alpha + \gamma \cdot FP_i + \beta \cdot hr_i + \delta \cdot ear_i + \varepsilon_i$$

can be seen in the table below (34 observations, R-squared: 0.769).

Variable	Coefficient	t-statistic
FP_i	−0.037	−3.72
dhr_i	−0.051	−8.24
ear_i	0.398	2.63

To ensure robustness, we perform another regression exercise in which the public health situation and the impact of restrictions are modelled using two proxies. The first variable used is the same as in the previous analysis, the dhr_i variable based on Google Community Mobility Reports data. As an additional variable we used the Oxford Stringency Index, OSI_i, which measures the degree of strictness of public health restrictions based on a normative approach.[39] In this way, we can capture the effects of the pandemic via an observational variable and a normative one. The results are presented in the following table:

Variable	Coefficient	t-statistic
FP_i	−0.032	−3.11
dhr_i	−0.043	−5.46
OSI_i	0.002	1.32
ear_i	0.434	2.86

The estimated effect of the stringency index has the expected sign (increased stringency is associated with higher losses of hours worked). However, the coefficient is not statistically significant and so has not been included in the regression discussed in the main text.

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38 As defined in ILO, _ILO Monitor: COVID-19 and the World of Work – Second Edition_, 7 April 2020.

39 The index is based on the measures taken by public authorities; it does not reflect differences in the level of enforcement.