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Introduction

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Introduction

This new edition of the *Global Wage Report* is being issued in a context marked by three important developments that are likely to shape social and economic policies in the near to medium term: the gradual recovery from the COVID-19 crisis; the global rise in inflation that began in 2021 and seems to be accelerating rapidly in 2022; and, since February 2022, the war in Ukraine, which has created additional economic uncertainty for many countries.

After the second quarter of 2022, the health crisis began to show signs of abating worldwide. According to the World Health Organization (WHO), global estimates indicate that the numbers of COVID-19 cases confirmed per week and new weekly deaths have each fallen steadily since then at the rate of about 10 per cent and 15 per cent, respectively, on a week-to-week basis. It is therefore reasonable to conclude that, despite the profound socio-economic consequences of the pandemic in the past three calendar years, the direct impact of COVID-19 on the economy is diminishing in most countries. As the measures taken by governments to curb transmission of the coronavirus were relaxed, the devastating economic effect of the pandemic subsided to some extent during 2021. Global growth bounced back to 6 per cent in 2021, having dropped to a negative rate of –3.0 per cent in 2020; total government debt across the world as a share of gross domestic product (GDP) stabilized at around 76 per cent, having jumped from 63 to 76 per cent during 2020 as a result of the fiscal measures implemented during the pandemic; and trade volumes returned to positive values in 2021.

Labour markets also bounced back during 2021, though the recovery has not been the same for all groups of workers or all regions. Thus, by the end of 2021, high-income countries had returned to the employment levels observed in the fourth quarter of 2019, whereas in low- and middle-income countries they remained about 2 per cent below pre-pandemic levels, with employment deficits concentrated among low-paid workers, the group that suffered the greatest job losses during the pandemic (ILO 2022b). However, concerns about rapidly rising inflation have clouded the economic horizon for countries worldwide. The outbreak of the war in Ukraine has contributed to increasing rates of inflation, which was already on the rise during 2021. After a period of relatively low inflation rates from 2008 to 2020, global inflation increased sharply to 4.7 per cent in 2021 and is expected to reach 8.8 per cent by the end of 2022 (IMF 2022b). In particular, food and energy are the items most susceptible to price inflation, with the rise in food prices hitting the purchasing power of vulnerable populations in low-income countries hardest. In view of higher-than-expected inflation worldwide, the negative spillover effects of the war in Ukraine, continued supply bottlenecks and tightening financial conditions, the International Monetary Fund (IMF) has revised downward the expected global growth rates for 2022, from an initial projection of 3.6 per cent in April 2022 (IMF 2022c) to a new forecast of 3.2 per cent in July 2022 (IMF 2022a), a forecast that has remained identical in October 2022 (IMF 2022b).

This report explores how wages and their purchasing power have evolved in the circumstances described above, presenting the latest global, regional and country-specific wage trends. It focuses, in particular, on the effect of accelerating price inflation on the real value of wages, and discusses how and why inflation has a greater impact on households at the bottom of the income distribution, which spend most of their income on essential items, such as food and energy. The report also offers an empirical analysis of inflation expected in the near future, highlighting its possible effects on wages. This is complemented by quarterly estimates of the total wage bill from 2019 to 2022, which reveal the extent of the impact of job losses on total wages, and by a detailed analysis of how wage inequality, including gender pay gaps, may have changed in recent years. The report's ultimate aim is to provide sound empirical evidence that can be used by policymakers as they search for strategies to enable their countries to weather the multiple ongoing crises. A discussion of policy options therefore rounds off the report.

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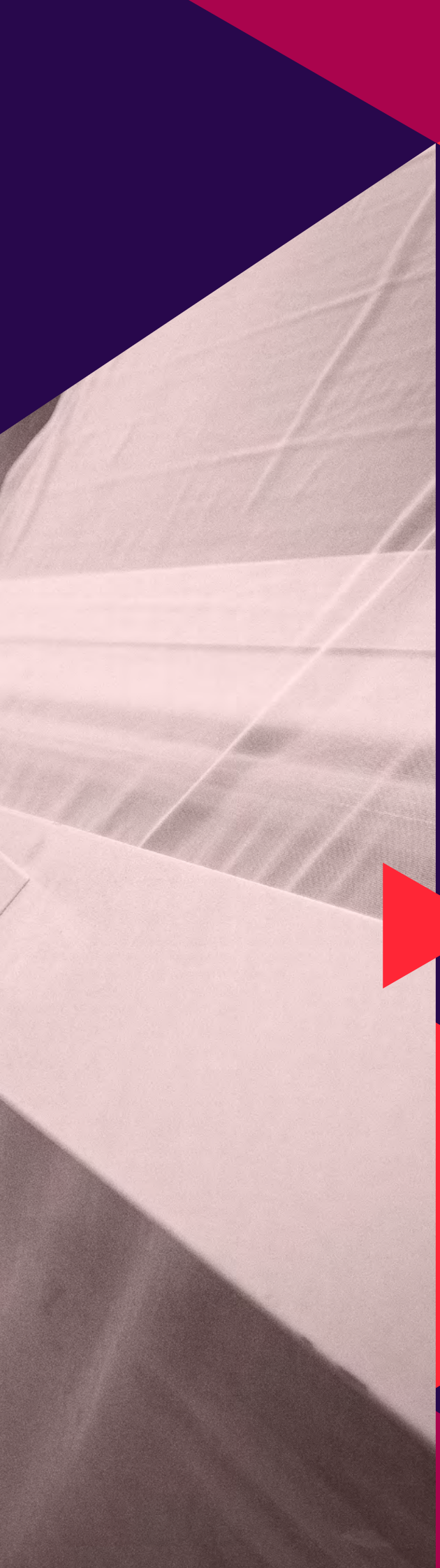

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The global economic and labour market context

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The global economic and labour market context

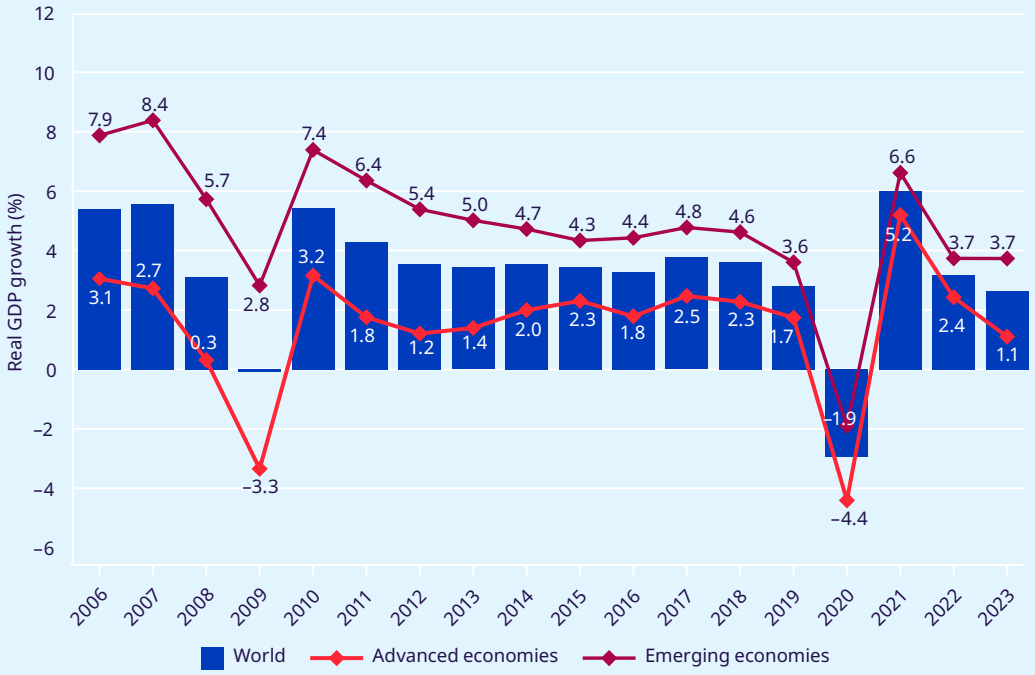
2.1. Economic growth

After the collapse of global economic growth in 2020 owing to the measures taken worldwide to control the spread of COVID-19, global output rose strongly during 2021 in both advanced and emerging economies (figure 2.1). This was the strongest post-recession jump in growth in 80 years and may be explained by a rapid rebound in aggregate demand as many countries started to gradually relax the pandemic-related measures in the course of 2021 (World Bank 2021). Thus, by the end of 2021, global economic growth had increased by 6.1 per cent, with economic growth increasing by 5.2 per cent among advanced economies and by 6.6 per cent among emerging market and developing economies (IMF 2022b).

One critical factor behind this remarkable growth recovery has been the progress in vaccination against COVID-19. By early October 2021, the share of fully vaccinated people worldwide had reached about 35 per cent, and as vaccination rates started to increase in countries where vaccines were swiftly rolled out there followed a gradual relaxation of lockdown measures and a decline in workplace closures. Vaccine access and coverage remain unevenly distributed across the world. According to the latest WHO estimates, more than 74 per cent of people were fully vaccinated in high- and upper-middle-income countries, compared with 57 and 19 per cent in lower-middle- and low-income countries, respectively. Unfortunately, most emerging economies and almost all low-income countries did not have the fiscal capacity to launch the stimulus packages required to mitigate the socio-economic effects of the COVID-19 crisis and kickstart their economic recovery. The IMF estimates that, out of the US$17 trillion spent globally on such packages up to the end of 2021, only about 0.4 per cent can be attributed to developing countries, while advanced and emerging market economies accounted for, respectively, 86 per cent and 14 per cent of the total (IMF 2021). This clearly points to a "fiscal stimulus gap" that is likely to cause advanced and emerging economies to follow diverging paths in the recovery process (ILO 2021a).

The war in Ukraine since February 2022 and other growing crises of a regional nature or with a global dimension (such as the cost-of-living crisis to be discussed further down) have dampened expectations of progress in the post-COVID-19 recovery. Accordingly, IMF projections suggest that the global economy will grow by 3.2 per cent in 2022, down from the 3.6 per cent forecast in April 2022, and by between 2 and 2.7 per cent in 2023 (IMF 2022b). One of the regions that may be worst affected by the war in Ukraine is Europe and Central Asia – in part owing to its geographical location,

Figure 2.1. Annual average economic growth, 2006–23
(GDP in constant 2015 prices, percentage)



Source: IMF (2022d).

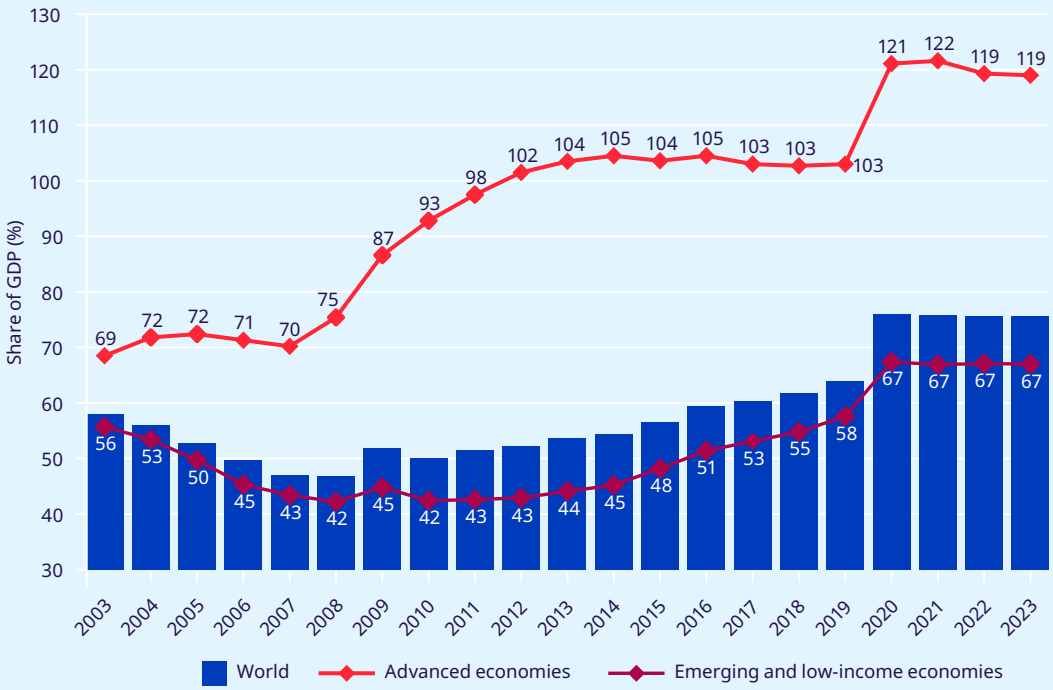
which implies close trade, financial and migratory ties with Ukraine and the Russian Federation, and in part because most countries in the region depend on the Russian Federation for their energy supplies. Economic growth in the European Union (EU) is thus expected to be no more than 2.6 per cent in 2022 and to decrease to 1.2 per cent in 2023, while in European emerging and developing economies growth is projected to be –1.4 per cent in 2022 and is expected to recover only slightly to 0.9 per cent in 2023 (IMF 2022b).

2.2. The evolution of public debt

In advanced economies, the unprecedentedly massive public spending during the COVID-19 crisis has led to a significant increase in government debt. Figure 2.2 below shows debt among these countries increasing from 103 per cent of real GDP before the pandemic (2019) to 121 per cent in 2020, a ratio that seems to have stabilized at around 119 per cent after 2021. In contrast, debt in emerging market and developing economies increased less steeply, from 57.6 to 67.4 per cent of real GDP over the same period.

Following the outbreak of war in Ukraine, the fiscal outlook is increasingly uncertain, particularly for countries in Europe. According to the IMF, in a positive geopolitical scenario involving a quick end to the war, debt in advanced economies would fall to about 113 per cent of GDP by 2024. It is worth noting that advanced economies have far more fiscal leeway than emerging market and developing economies, where debt is also expected to decline but there is greater uncertainty owing to a weak recovery, limited fiscal space, and volatile commodity prices.

Figure 2.2. Government gross debt, 2003–23 (share of GDP, percentage)



Source: IMF (2022d).

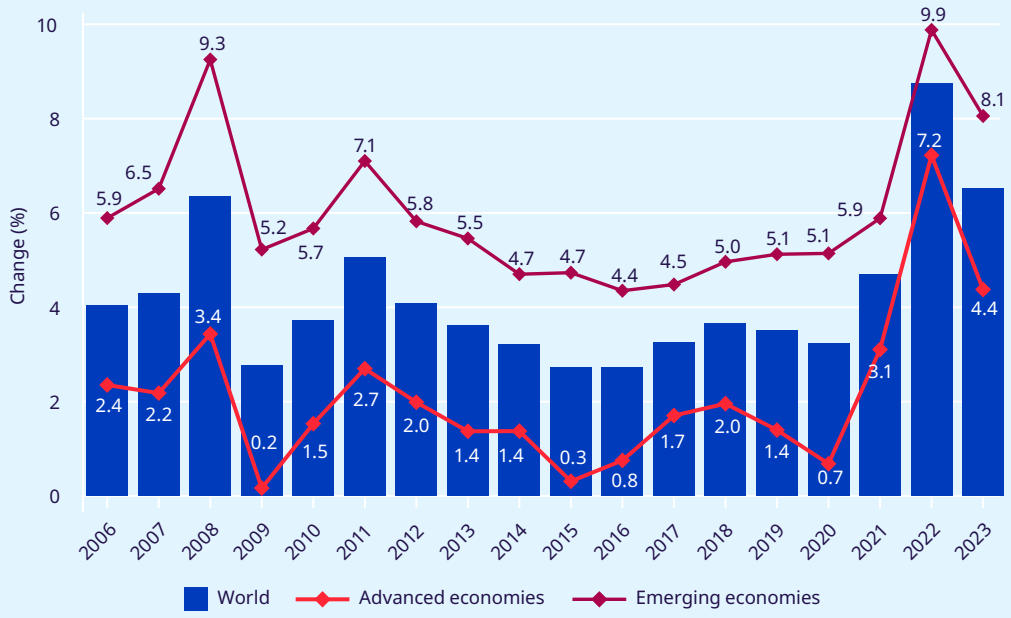
2.3. Inflation rates

Across all regions of the world, the war in Ukraine has accelerated the increase in prices, which were already rising markedly in the course of 2021, as can be seen in figure 2.3. This has alarming implications for wages, since rising inflation is likely to erode their real value unless nominal wages keep up with price levels. Significantly, the October IMF projections for 2022 shown in the figure are 0.8 percentage points and 0.9 percentage points higher for advanced and developing economies, respectively, than the projections originally published in April 2022 (IMF 2022c).

Inflation is currently one of the major concerns of policymakers at the national and multilateral levels. A quick glance at the news in most countries shows that more headlines are now devoted to soaring inflation and its impact on the purchasing power of households than to the effects of the COVID-19 crisis. As suggested by the available data, consumer prices had been on the rise throughout 2021 and have continued to increase even faster since the start of 2022. Figure 2.3 shows that inflation among advanced economies rose by 2.4 percentage points year on year over the period 2020–21, whereas over the period 2021–22 it is expected to increase by a further 4.1 percentage points. Among emerging market and developing economies, the increase over the period 2021–22 is expected to be 4.0 percentage points, with inflation reaching 9.9 per cent by the end of 2022. During 2023, it is expected that inflation will drop considerably in both groups, as shown in figure 2.3.

The recent surge in inflation is often ascribed to the supply bottlenecks resulting from COVID-19-related restrictions, but analysts are also citing additional factors. In particular, it has been suggested that inflation was inevitable because of the stimulus packages adopted to overcome the COVID-19

▶ **Figure 2.3. Inflation, 2006–23** (average consumer price index, percentage)

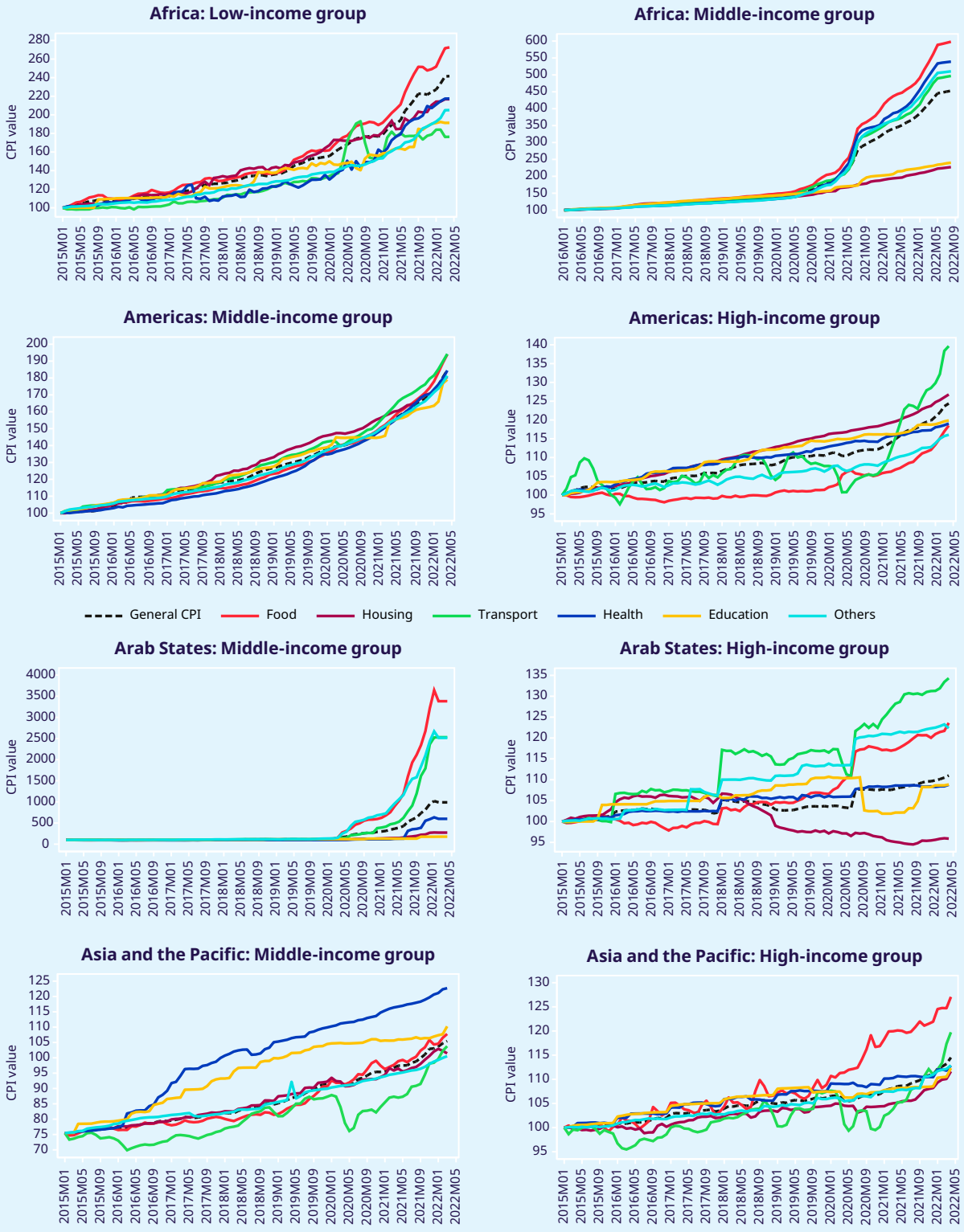


Source: IMF (2022d).

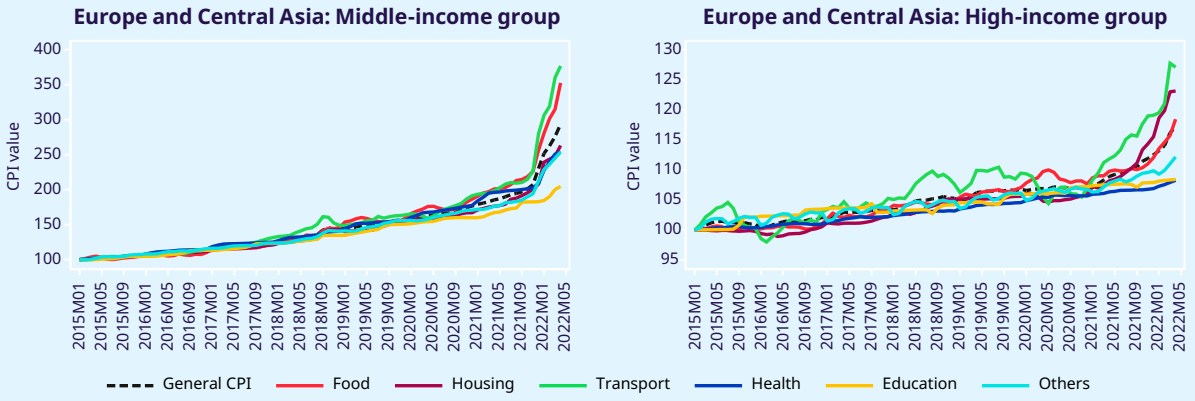
crisis coupled with the loose monetary policy of central banks over the past few years. The war in Ukraine has compounded the influence of these earlier developments to push inflation even higher. It has also been pointed out that some large corporations may have taken advantage of the inflationary environment to raise their prices and profits (Zahn 2022).

The items in the basket of goods and services that are most likely to experience large price increases are those with an inelastic demand, such as food, housing, transport and energy. For example, annual inflation in the eurozone was expected to reach 8.1 per cent by May 2022, driven largely by a 39 per cent increase in energy and food prices (see Eurostat 2022). Covering the period from January 2015 to March 2022, figure 2.4 shows how the latest inflation trends stand out from those of previous years across regions and income groups, and how the items with the greatest price increases are food, housing, energy and transport. As will be discussed in Chapter 3, these basic goods have a greater weight in the basket of lower-income households than in that of households at the top of the income distribution.

Figure 2.4. Monthly consumer price index, by item, country income level and geographical region, January 2015–March 2022



▶ **Figure 2.4.** ***(concl.)***



CPI = consumer price index

Note: The group of middle-income Arab States comprises only Lebanon, while the high-income Arab States group consists of all member countries of the Gulf Cooperation Council. The charts show weighted estimates, with weights based on the population size of all countries for which data are available. Three large countries for which itemized monthly data are not available have been excluded: China, India and the Russian Federation.

Sources: ILO estimates; IMF (2022d).

▶ 2.4. The labour market context

The lockdown measures imposed during 2020 and 2021 to contain the spread of the coronavirus plunged labour markets around the world into an unprecedented crisis. From the second quarter of 2020, there was massive destruction of employment and economic activity, which affected both women and men but reduced the global employment of women by 1.2 percentage points more than for men. The crisis also resulted in a significantly smaller share of lower-paid workers in the labour force in 2020 than in 2019, as low-wage earners suffered disproportionately in terms of employment and working-hour losses (ILO 2021a). This contributed to an increase in income inequality (World Bank 2022), possibly reversing the decline in inequality observed in some emerging and low-income countries in the years before the COVID-19 pandemic (ILO 2021b).

At the same time, the crisis has expedited the adoption of novel modalities of work, including telework, that would otherwise have taken much longer to gain traction. While the extent of the use of telework at the global level has yet to be properly assessed, some estimates give an idea of the massive growth of telework in some regions and countries. For example, approximately 34 per cent of all employees in the EU countries started teleworking during 2020 (Ahrendt et al. 2020). In Latin America and the Caribbean, it is estimated that around 23 million workers embraced teleworking during 2020–21, which is approximately 23 per cent of the 98 million wage employees in the region (Maurizio 2021). The full impact of COVID-19 on the use of telework in the future remains to be seen. However, it is likely that teleworking rates will remain significantly higher than they were previously. Post-pandemic telework is expected to follow a hybrid pattern, with people working part of the time in an employer-provided workplace and part of the time remotely.

Another important policy measure adopted to counteract the economic and labour market effects of the crisis was the use of public funds to support the wages of workers in enterprises directly affected

by the pandemic so that they could continue in employment. The arrangements for the provision of wage support varied between countries depending on their regulations, institutions (including social protection systems) and, above all, the capacity of their governments to undertake such interventions at short notice (ILO 2020b). Although several emerging and low-income countries adopted such measures, this happened much more frequently among advanced economies. By the end of 2021, as lockdown measures were lifted, employment had returned to pre-crisis levels or even surpassed them in most high-income countries, but employment deficits persisted in some middle-income countries. Moreover, employment recovery has been slower for women than for men, which has led to a widening gender employment gap worldwide (ILO 2022b). Although data for all of 2022 are not yet available, estimates for the first quarter suggest that global working hours remain about 3.8 per cent below the level of the last quarter of 2019. Across country income groups, low-income countries are lagging behind in the first quarter of 2022, with 5.7 per cent fewer hours worked compared with the last quarter of 2019, while high-income countries have recovered the most, with 2.1 per cent fewer hours worked in the first quarter of 2022 compared with the last quarter of 2019 (ILO 2022b). The recovery of working hours has been slower for women than for men in low- and middle-income countries, in contrast to high-income countries, where the number of hours worked by women has recovered faster (ILO 2022c). Overall, the gender gap in hours worked has been widening globally.

Estimates also show that certain groups in the labour market suffered more severely than others, particularly during the period leading up to the end of 2020. These include low-wage workers, workers in the informal economy, wage workers in temporary employment, women and young workers (ILO 2021b). Wage employees in the informal economy were hit particularly hard. Informal wage employment dropped by 12.3 per cent globally in the fourth quarter of 2020 relative to the same quarter in 2019, while formal wage employment decreased by just 1.6 per cent over the same period (ILO 2022c). After the big losses in the second quarter of 2020, informal employment began to increase faster than formal employment, and by the last quarter of 2021, the recovery in informal employment had overtaken that of formal employment. Three factors were behind this development: (a) the return of many informal workers to their economic activities; (b) the taking up of informal employment by people who were previously outside the labour force to compensate for losses in household income; and (c) the informalization of previously formal jobs. This third trend has yet to be confirmed empirically, but such informalization already seems to be significant in some sectors, including construction and wholesale and retail trade (ILO, forthcoming).

Workers in temporary employment were strongly impacted by the crisis. For example, in Mexico, Poland and Portugal, 33 per cent, 9 per cent and 17 per cent, respectively, of those who were in temporary employment in the first quarter of 2020 were out of work in the second quarter of 2020, compared with just 12 per cent of non-temporary workers in Mexico and 3 per cent in both Poland and Portugal (ILO 2022c). Young workers seem also to have been worse affected by the crisis. While young people made up just 13 per cent of total employment in 2019, they accounted for 34.2 per cent of the decline in employment in 2020. The change in the employment-to-population ratio between the second quarter of 2020 and the second quarter of 2021 suggests that, despite some improvements, young people, especially young women, still faced the biggest deficit relative to the pre-crisis situation in 2019 (ILO 2021a).

The further recovery of global, regional and national labour markets depends very much on the socio-economic impact of the ongoing crises – particularly the cost-of-living crisis, but also geopolitical turmoil, driven mainly by the war in Ukraine. Current geopolitical tensions, together with the rising cost of living, could in fact cause the recovery in employment levels to deviate from the trajectory that had been projected for the end of 2022. This will certainly be the case if the war in Ukraine does not end before long. In such circumstances, the war's impact on energy prices and further bottlenecks in the supply of goods needed for production will continue to slow down global growth during 2022. With only a few exceptions (such as oil- and gas-exporting countries), employment and economic output in most countries are likely to remain below pre-pandemic levels till the end of 2026 (IMF 2022c).

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3

Wage trends in the context of the COVID-19 crisis and rising price inflation

3

Wage trends in the context of the COVID-19 crisis and rising price inflation

While previous editions of the *Global Wage Report* focused on presenting annual wage trends, this year's edition provides, in addition, an analysis of wage and employment trends based on quarterly survey data that cover a period from before the COVID-19 pandemic up to the most recent dates available. In a context of rapid change, quarterly data can offer a more detailed picture of the evolution of wages and employment, also revealing how the current inflation crisis has impacted on wage growth in the first half of 2022. The use of quarterly survey data, moreover, helps in identifying the factors behind the wage trends observed for women and men and for different groups of wage employees.

3.1. Global wage trends

This report's detailed analysis of wage trends begins with gross monthly average wages, which consider the monthly average earnings obtained by a wage employee from his or her main job over a given calendar year.[1] According to ILO estimates, although the COVID-19 crisis destroyed many wage and salaried jobs during the first full year of the pandemic, with global wage employment dropping from 1.75 billion in 2019 to 1.69 billion in 2020, the number of wage and salaried workers had almost recovered to pre-pandemic levels by the end of 2021, reaching 1.74 billion, or 53 per cent of global employment. The remaining 47 per cent are employers, own-account workers (that is, independent workers without employees) and contributing family workers, many of whom operate in the informal economy.[2] Applying a longer-term perspective, ILO estimates indicate that wage and salaried employment rose by 36 per cent between 2005 and 2021, compared with a 16 per cent increase in total global employment over the same period (ILO 2022b). The increase in wage employment, which was especially pronounced in low- and middle-income countries, shows that this form of employment continues to gain ground and is becoming an increasingly important factor in shaping households' income and, therefore, income inequality. It is for this reason that the regular and rigorous analysis of global and regional wage trends should be considered a key empirical tool by policymakers around the world.

Figure 3.1 below displays annual average global real wage growth from 2006 to mid-2022. The striking fall in real wages in the last year of the series (2022) is mainly due to the increase in inflation that started in 2021 and has continued during 2022. The report estimates that global monthly wages fell in real terms to –0.9 per cent in the first half of 2022 – the first negative global wage growth recorded since the first edition of the *Global Wage Report* in 2008. If China, where wage growth is typically higher than the global average, is excluded from the computations, global real wage growth during the first half of 2022 is estimated to fall to –1.4 per cent. In view of these developments, a cost-of-living crisis could well dominate wage trends until the end of 2023, as will be examined in detail in subsequent sections.

> A cost-of-living crisis could well dominate wage trends until the end of 2023.

> Global monthly wages fell in real terms to –0.9 per cent in the first half of 2022 – the first negative global wage growth recorded since the first edition of the *Global Wage Report* in 2008.

Another significant finding shown in figure 3.1 is that global wage growth slowed down from 2.0 per cent in 2019 to 1.5 per cent in 2020, the first year of the pandemic. This decrease, which seems surprisingly modest, may be explained by the restrictions implemented in 2020 to contain the coronavirus, which led to a reduction in the number of hours worked and to frozen or reduced nominal wages in many places. However, the pandemic's relatively limited impact on average wages – and indeed

1 Annual data to estimate global wage trends are provided by the national statistical offices of each country. Estimates for the year 2021 shown in any of the figures in this chapter may be revised in future editions of the *Global Wage Report*. Whereas annual outcomes before 2022 take all months into account, data referring to 2022 are limited to the few months for which data were available at the time of writing. In future editions the estimates for 2022 may also change. The methodology for calculating global and regional estimates is available on the ILO's thematic webpage (https://www.ilo.org/wages). See also ILO (2018, Appendix I). Country-specific data and wage trends are available from the ILO Global Wage Database and can be downloaded free of charge (see www.ilo.org/ilostat).

2 By definition, all contributing family workers are in informal employment, while more than 80 per cent of own-account workers operate in the informal economy (ILO, forthcoming).

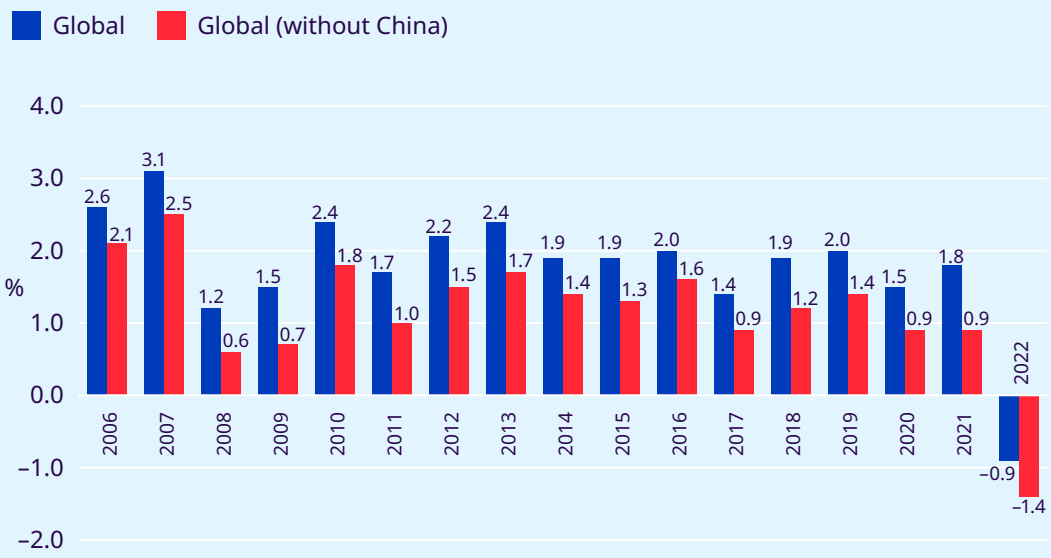
the fact that global wage growth was positive at all in 2020 – may largely be ascribed to a change in the composition of employment, particularly in some big countries. As already pointed out in the last edition of the *Global Wage Report* (ILO 2020a), in many countries a large proportion of wage employees who lost their jobs (and hence their earnings), particularly at the onset of the crisis, were low-paid wage employees, whereas their higher-paid counterparts remained employed. This change in the composition of employment increased the estimated average wage through a "composition effect". Box 3.1 provides a detailed explanation of this effect, illustrating the phenomenon with quarterly data from a variety of countries.

In 2021, global wage growth rebounded and was estimated at 1.8 per cent, which is quite close to the estimate for 2019, the year immediately before the pandemic. However, when China is excluded from the global computation, real wage growth in

> The pandemic's relatively limited impact on average wages was largely a result of changes in the composition of employment.

2021 was estimated at 0.9 per cent, that is, 0.5 percentage points less than in 2019. This comparatively lower growth rate may to some extent reflect the fact that during 2021 the average number of hours worked by employees had not yet fully recovered to pre-pandemic levels (ILO 2022a).[3] In addition, though, the lower rate in 2021 is also likely to be a consequence of inflation having already started to erode real wage growth during that year. This trend

Figure 3.1. Annual average global real monthly wage growth, 2006–22 (percentage)

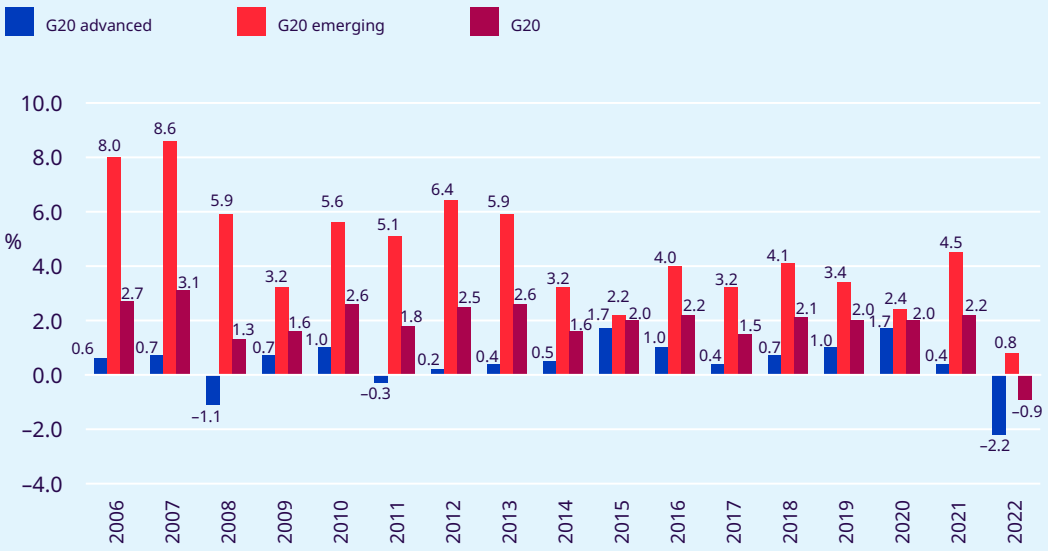


Note: Wage growth for 2022 was estimated by comparing the first two quarters of 2022 with the corresponding period in 2021.

Source: ILO estimates based on official national sources as recorded in ILOSTAT and the ILO Global Wage Database.

3 As in previous editions of the *Global Wage Report*, it is important to emphasize that the global figures are estimated on the basis of real monthly average wages, where real values are obtained using nominal monthly wages and taking into account changes in the cost of living as measured by the relevant national price index, usually the consumer price index. Thus, fluctuations from year to year reflect changes in price inflation, changes in hourly wages and changes in the average number of hours worked per month.

Figure 3.2. Annual average real monthly wage growth in the G20 countries, 2006–22
(percentage)



Note: The G20 comprises Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, the Republic of Korea, the Russian Federation, Saudi Arabia, South Africa, Türkiye, the United Kingdom, the United States and the EU.

Source: ILO estimates based on official national sources as recorded in ILOSTAT and the ILO Global Wage Database.

has gained momentum since then, causing global real wage growth to plummet into negative numbers in 2022, as previously discussed.

Figure 3.2 presents estimates similar to those in figure 3.1 but for the G20 economies, distinguishing between advanced and emerging economies in that group. For the years before the COVID-19 pandemic, estimates of wage growth in the G20 countries are very similar to the global estimates in figure 3.1, which is not surprising since, taken together, these countries account for some 60 per cent of the world's wage employees and produce about three quarters of global GDP. Likewise, for 2021 and 2022, the global estimates in figure 3.1 and those for the G20 countries in figure 3.2 display strong similarities. However, it is worth noting that although inflation impacted on real wage growth in both advanced and emerging economies, the growth rate in the first half of 2022 remained positive in emerging economies but became negative in advanced ones. This is consistent with the fact that inflation in the first half of 2022 was rising proportionately faster in high-income countries than in low- and middle-income countries (see figure 2.3 in Chapter 2).

The year 2020 stands out as anomalous in figure 3.2. In the advanced G20 economies, wage growth reached 1.7 per cent in 2020, which represents an increase of 0.7 percentage points from the last pre-pandemic year (2019) and the highest wage growth recorded in several years. This increase in average wages points to the interaction of the employment composition effect (explained and illustrated in box 3.1) in some of the large advanced G20 economies with the way in which fiscal stimulus policies helped to preserve employment and wages in some of the other advanced G20 economies. As discussed in more detail later on, while a strong composition effect was noticeable in countries such as the United States and Canada (where employment fell dramatically in 2020 and average wages jumped by about 4 per cent and 6 per cent, respectively), wages in certain other countries

▶ Box 3.1. The effect of employment composition on wages

Wage statistics, such as the mean or median wage reported by national statistical offices, provide a summary measure of the wage distribution. These summary measures "hide" information that underlies and determines wages at different points of the distribution, such as the number of hours worked per wage employee, wage differentials between employees due to differences in their characteristics and those of their workplace (for example, regional differences), and the wage differential between top and bottom wage earners in the population.

As long as the underlying characteristics of wage employees remain stable over time, wage statistics will also remain stable, changing smoothly at regular intervals to reflect nominal increases (or real ones if a nominal increase is greater than an increase in the general price level). In the long run, changes in the relative value of wages across the wage distribution can also shape trends in wage statistics to reveal structural changes. For example, a gradual but permanent decline in union membership in the United States in the 1980s seems to be behind the increase in the spread of the wage distribution and the consequent increase in wage inequality in the early 1990s (DiNardo, Fortin and Lemieux 1996).

During labour market shocks, the rapid destruction of employment, together with a reduction of hours worked, can distort the composition of wage employees in that such shocks have a greater effect on specific sectors or occupations and among wage employees with specific characteristics. This was the case in the COVID-19 crisis, where low-paid jobs, especially those requiring physical presence in a workplace, were the first to be destroyed, especially in countries where job retention schemes were not implemented to any significant extent. When labour market shocks destroy low-paid jobs on a massive scale, estimates of the mean and median wage can increase significantly compared with earlier periods. This is because such estimates take into account only those higher-paid employees who remain in paid wage employment during the crisis. This skewing of wage statistics owing to the selective nature of job destruction during a crisis is what is referred to as a "composition effect".

The charts in figure 3.B1 show examples of wage and employment trends, before and during the COVID-19 crisis, to illustrate the composition effect in relation to wage statistics for both women and men. The examples in panel A correspond to countries with a distinct composition effect (average wages go up as employment goes down), while the examples in panel B are of countries with no obvious composition effect. All the charts present separate estimates for women and men. In all countries in figure 3.B1, panel A, the second quarter of 2020, that is, the onset of the COVID-19 crisis, coincides with a sudden dip in wage employment together with an increase in real and nominal wages. Except for Costa Rica, this is observed in all countries for both women and men. In general, women, who are more likely to be clustered at the bottom of the wage distribution, lost more employment than men (see also section 3.8).

Figure 3.B1, panel B, shows countries where there was no very obvious composition effect on average wages. Most of them are countries in Europe where stimulus packages, wage subsidies and job retention schemes kept wage employees in employment. Greece and Italy display a slight decline in wage employment near the second quarter of 2020, although there is no impact on average wages. Colombia is an interesting case: wage employment declines together with wages for both women and men. It is likely that wage employment in that country was destroyed across the wage distribution, and that those who remained in wage employment reduced their number of hours worked. This translated into a reduction in average wages at around the second quarter of 2020.

For all countries in figure 3.B1, panels A and B, as wage employment gradually returns to its pre-pandemic level, especially after the second quarter of 2021, wage statistics exhibit a tendency to return to the trend that they had displayed in 2019. For countries with data up to the first quarter of 2022, these trends show how inflation started to take a hefty bite out of real wages at the end of 2021 and during 2022. The cost-of-living crisis is discussed in detail throughout this report.

Figure 3.B1, panel A. Examples of countries with an employment composition effect on wage statistics, first quarter of 2019 to latest available quarter(s)

WOMEN

▶ **Figure 3.B1, panel A.** ***(concl.)***

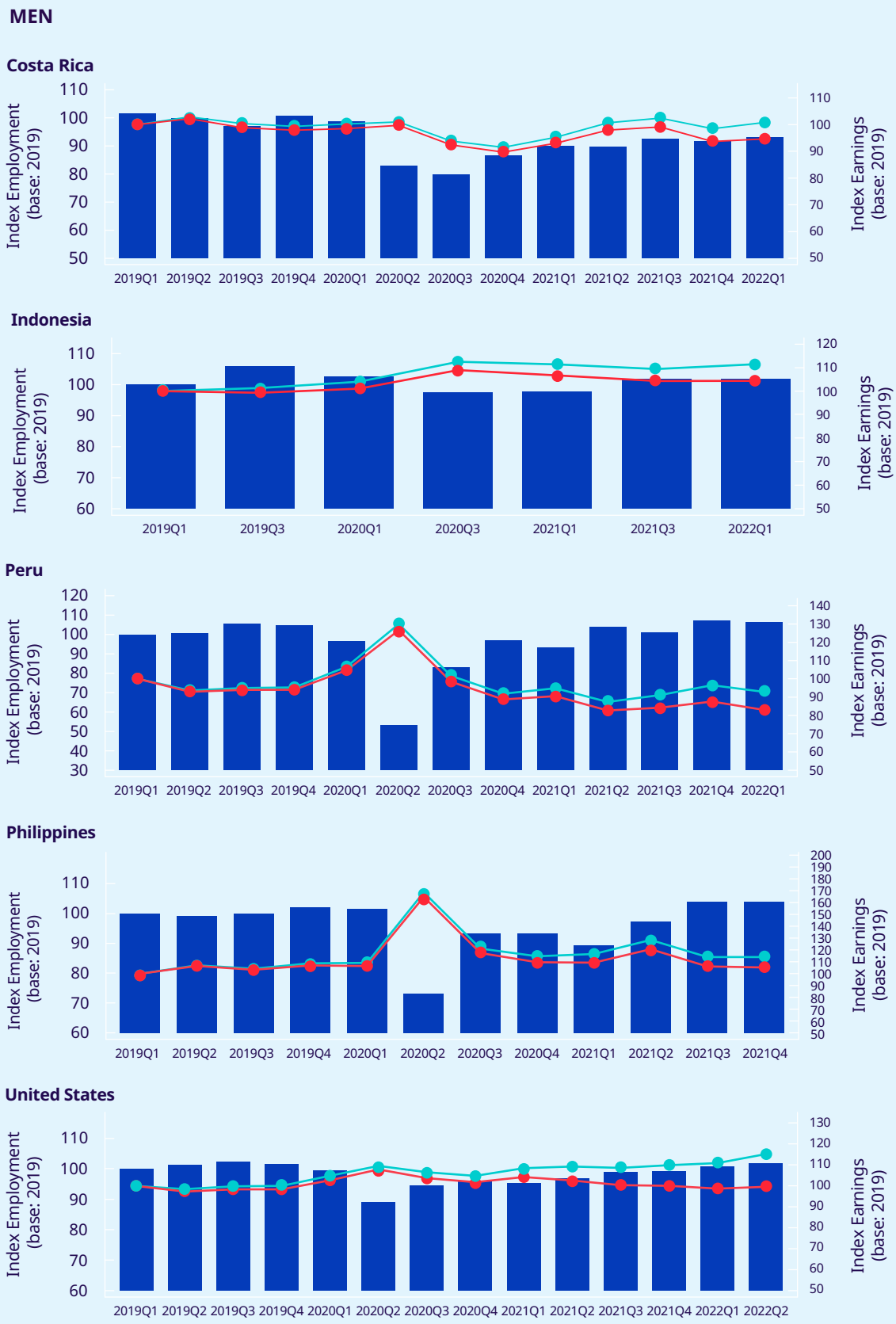
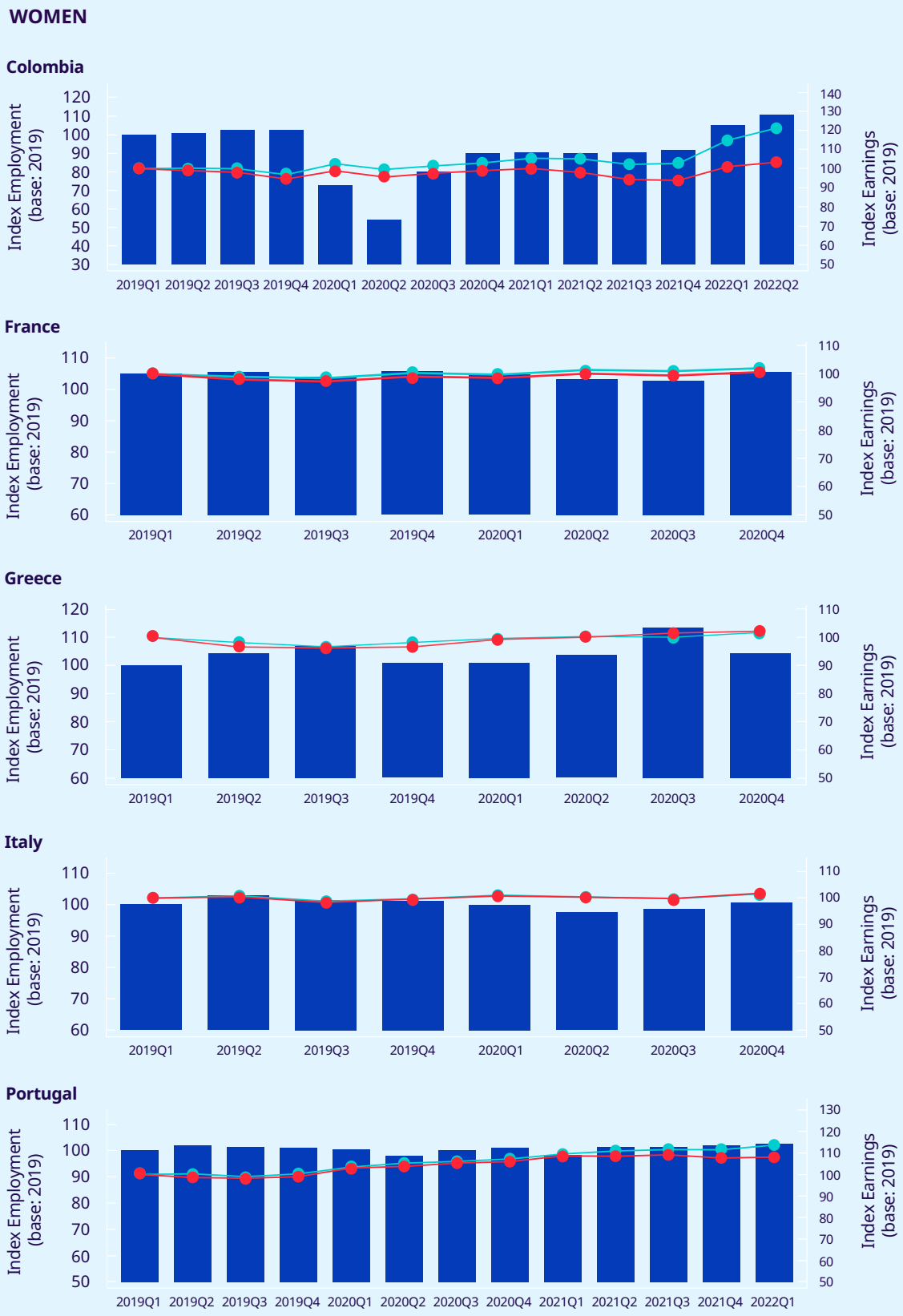


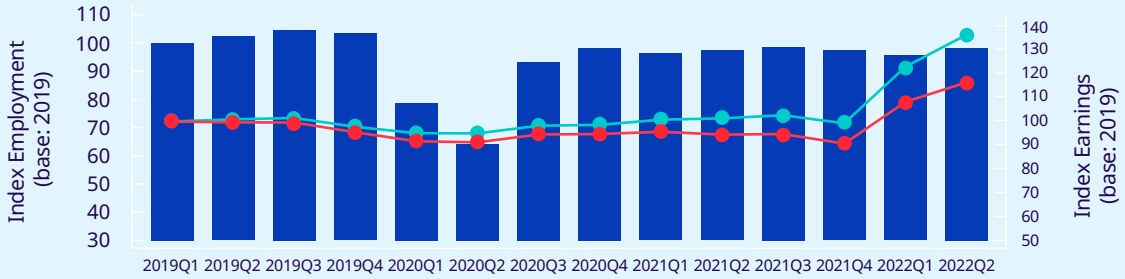
Figure 3.B1, panel B. Examples of countries with no clear evidence of an employment composition effect on wage statistics, first quarter of 2019 to latest available quarter(s)



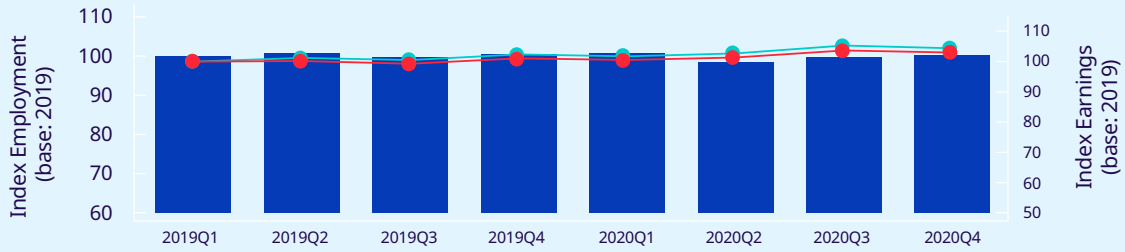
▶ **Figure 3.B1, panel B.** ***(concl.)***

MEN

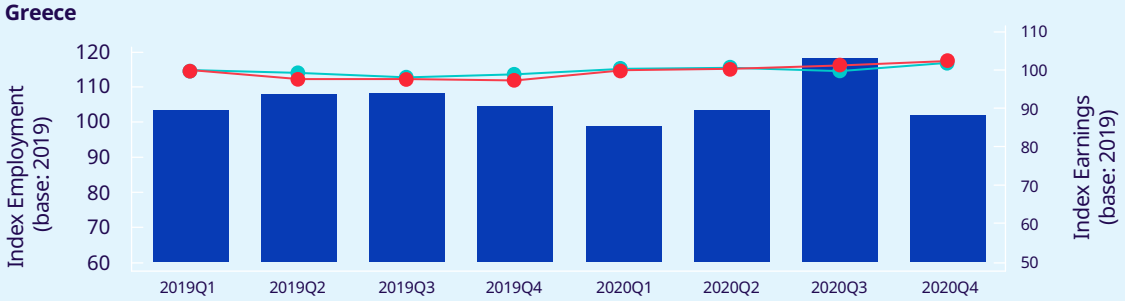
Colombia



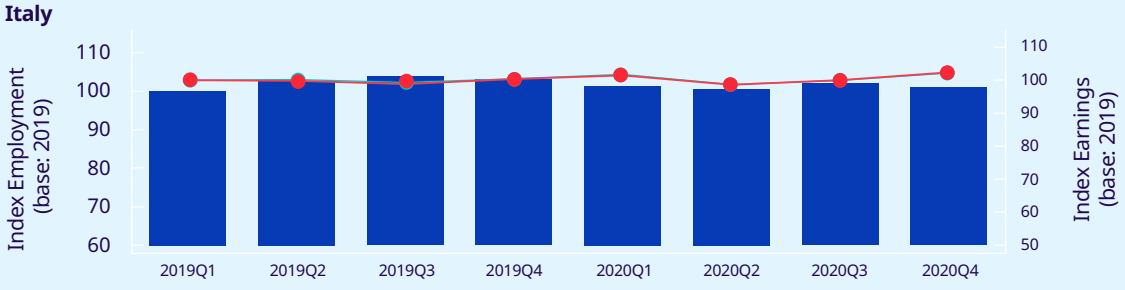
France



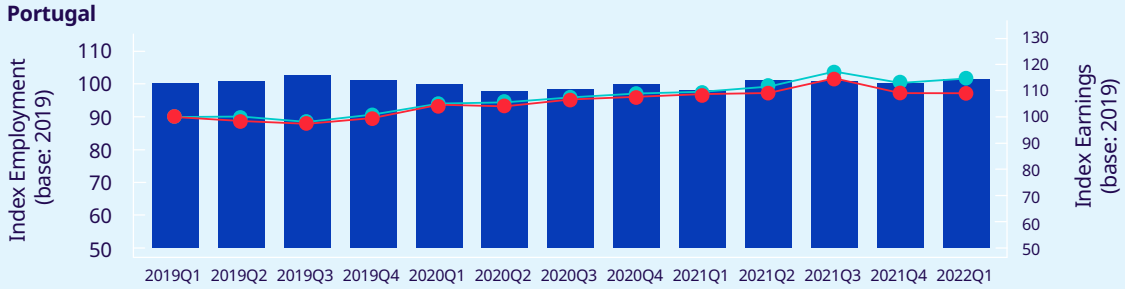
Greece



Italy



Portugal



Source: ILO estimates. See Appendix I for the sources of survey data used in this report.

declined but not by very much, partly owing to the massive use of temporary wage subsidies, which are generally included in wage statistics,[4] and job retention schemes to save jobs and mitigate the adverse impact of the crisis on wages. In Germany and the United Kingdom, for example, real average wages declined by less than 1 per cent in 2020. In some countries, particularly European ones, collective bargaining played an important role in saving jobs, ensuring business continuity and protecting earnings.

In the emerging G20 economies, real wage growth declined from 3.4 per cent in 2019 to 2.4 per cent in 2020. This overall trend masks some very heterogeneous situations, including falling real wages in some countries, such as Indonesia, South Africa and Türkiye; slower but still positive wage growth in China (+4.6 per cent in 2020); and a large jump in average wages in Brazil and Mexico, which probably reflects, at least in part, a strong composition effect, and which in both countries was followed by falling real wages in 2021.

▸ 3.2. Regional wage trends

Figure 3.3 presents regional data to complement the global analysis presented in section 3.1, while figure 3.4 displays some country-specific data, in both cases based on official wage statistics. The charts in figure 3.3 show the extent to which the global wage trends are replicated or not at the regional level.[5] The regional picture is marked by considerable heterogeneity in the impact of the COVID-19 crisis in 2020, with higher-than-usual average wages in Northern America and Latin America and the Caribbean due to strong employment composition effects, since many low-paid workers lost their jobs during the pandemic; frozen wage growth in the EU, reflecting to a great extent the widespread use of wage subsidies; and declining wage growth in other regions. Consistently across regions, though, one can observe a decline in estimated real wage growth during the first half of 2022 due to the acceleration of price inflation.[6]

In Northern America (Canada and the United States), real wage growth fluctuated between 0 and 1 per cent in most years between 2006 and 2019, including the years immediately before the outbreak of the pandemic. In 2020, as the pandemic destroyed the jobs of millions of low-wage workers, the composition effect manifested itself clearly, with average real wage growth suddenly rising to 4.3 per cent. The subsequent decline in real wage growth, first to 0 per cent in 2021 and then to –3.2 per cent in the first half of 2022, is due to the composition effect fading away after 2020 (that is, from the moment that low-paid workers returned to the labour market) and the rise in inflation which eroded real wages in 2021 and especially in the first months of 2022. Figure 3.4 displays monthly trends in average nominal and real wages in both Canada and the United States, where one can again see an initial jump in average real wages in the early months of 2020 and a progressive decline since late 2020 and early 2021.

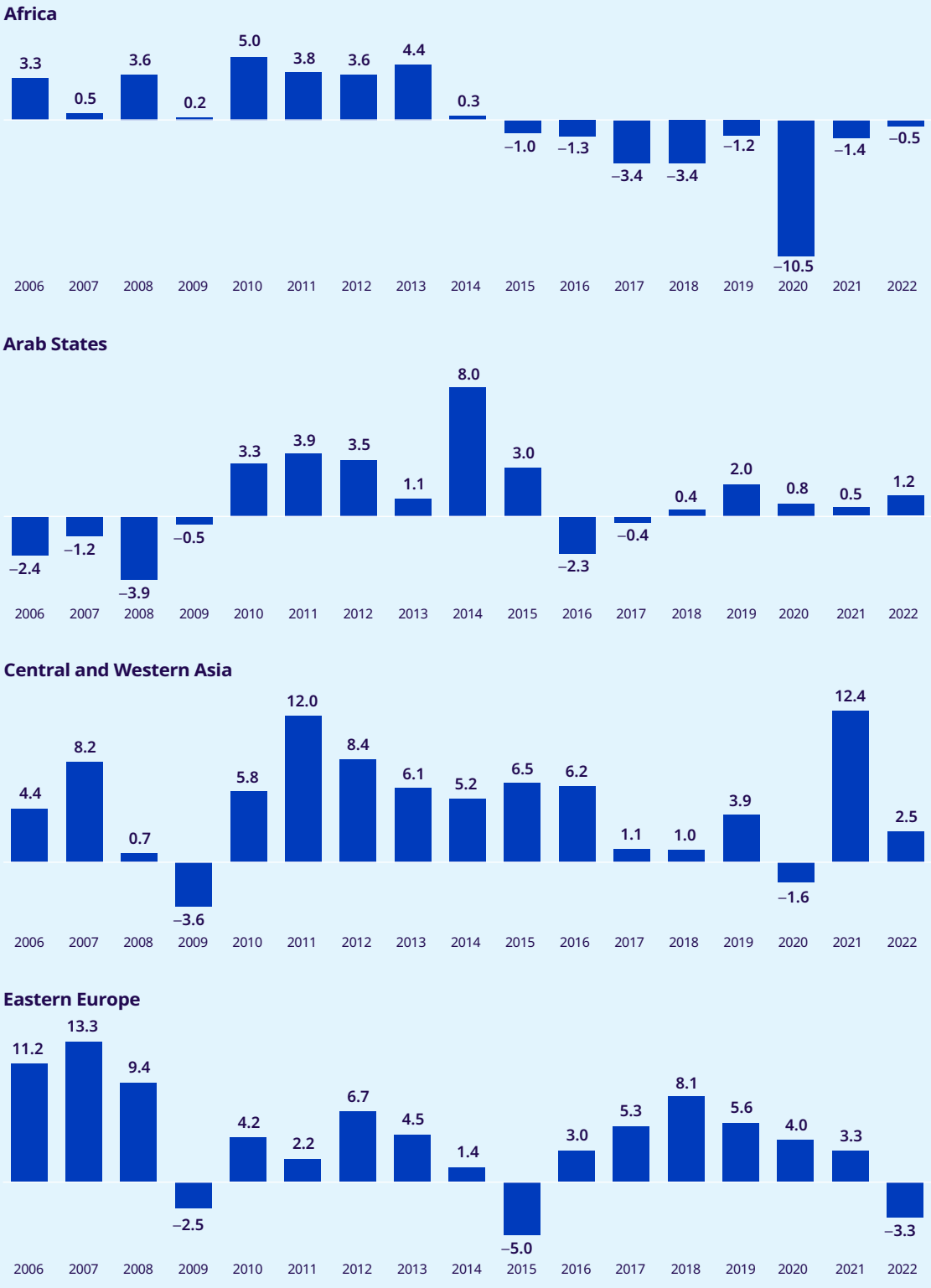
In Latin America and the Caribbean, the composition effect – reflecting the fall in low-wage employment during the pandemic – was clearly observable, with real wage growth jumping to 3.3 per cent in 2020,

4 Individuals are asked in surveys to declare "total earnings" as long as they are active at the time of the survey. In most surveys, when people are momentarily out of work (for example, if the survey coincides with their annual leave) they are asked to explain why they are not working or working fewer hours. During 2020, many respondents answered that they were out of work owing to "unexpected events". When people are out of work (because of annual leave or for whatever other reason), they are directed to another question that asks them: "Do you get paid while/despite being absent from work?" If the answer is "yes", they are included in the group of wage employees and what they declare to be their earnings is recorded as such.

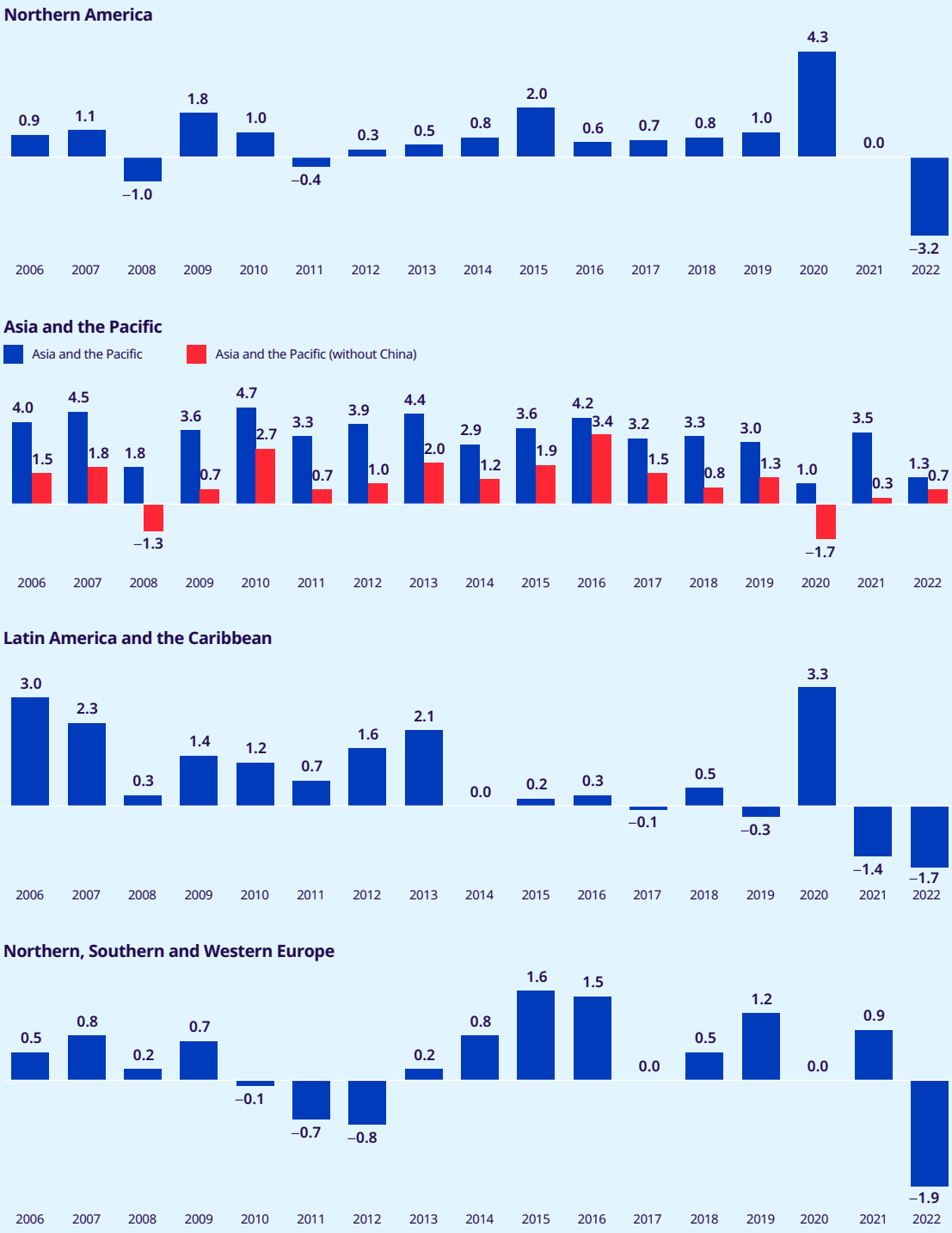
5 Country groupings according to ILO regions and subregions can be found on this ILOSTAT web page: https://ilostat.ilo.org/resources/concepts-and-definitions/classification-country-groupings/.

6 While global estimates of wage growth for the first half of 2022 are relatively robust, some regional estimates should be seen as more tentative, since wage data were still missing for several countries and/or periods at the time of writing. It should also be noted that the monthly wage data presented in figure 3.4 may come from official sources that are different from those of the annual wage data used for the regional estimates.

▶ Figure 3.3, panel A. Annual average real wage growth, by region, 2006–22 (percentage)



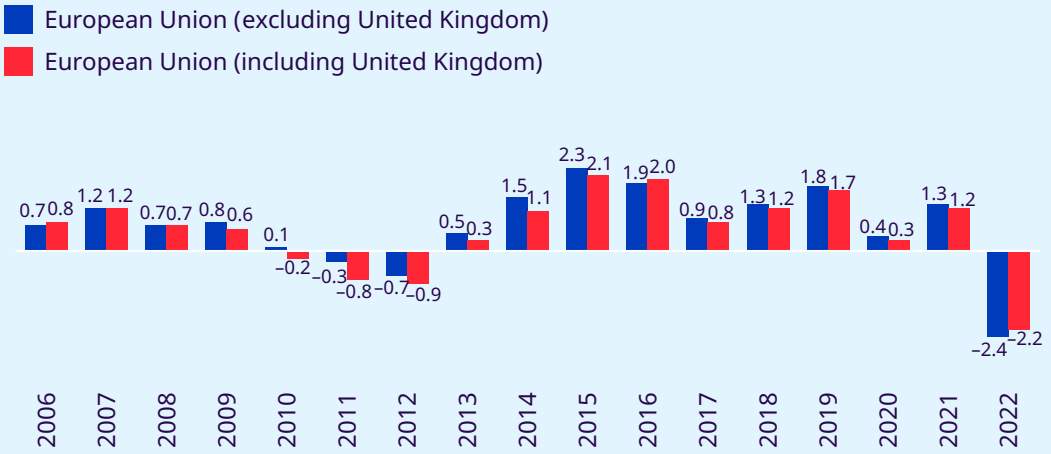
▶ **Figure 3.3, panel A.** ***(concl.)***



Note: Wage growth for 2022 is estimated by comparing the first two quarters of 2022 with the corresponding period in 2021.

Source: ILO estimates.

▶ Figure 3.3, panel B. Annual average real wage growth in the European Union, excluding and including the United Kingdom, 2006–22 (percentage)



Note: Wage growth for 2022 is estimated by comparing the first two quarters of 2022 with the corresponding period in 2021.

Source: ILO estimates.

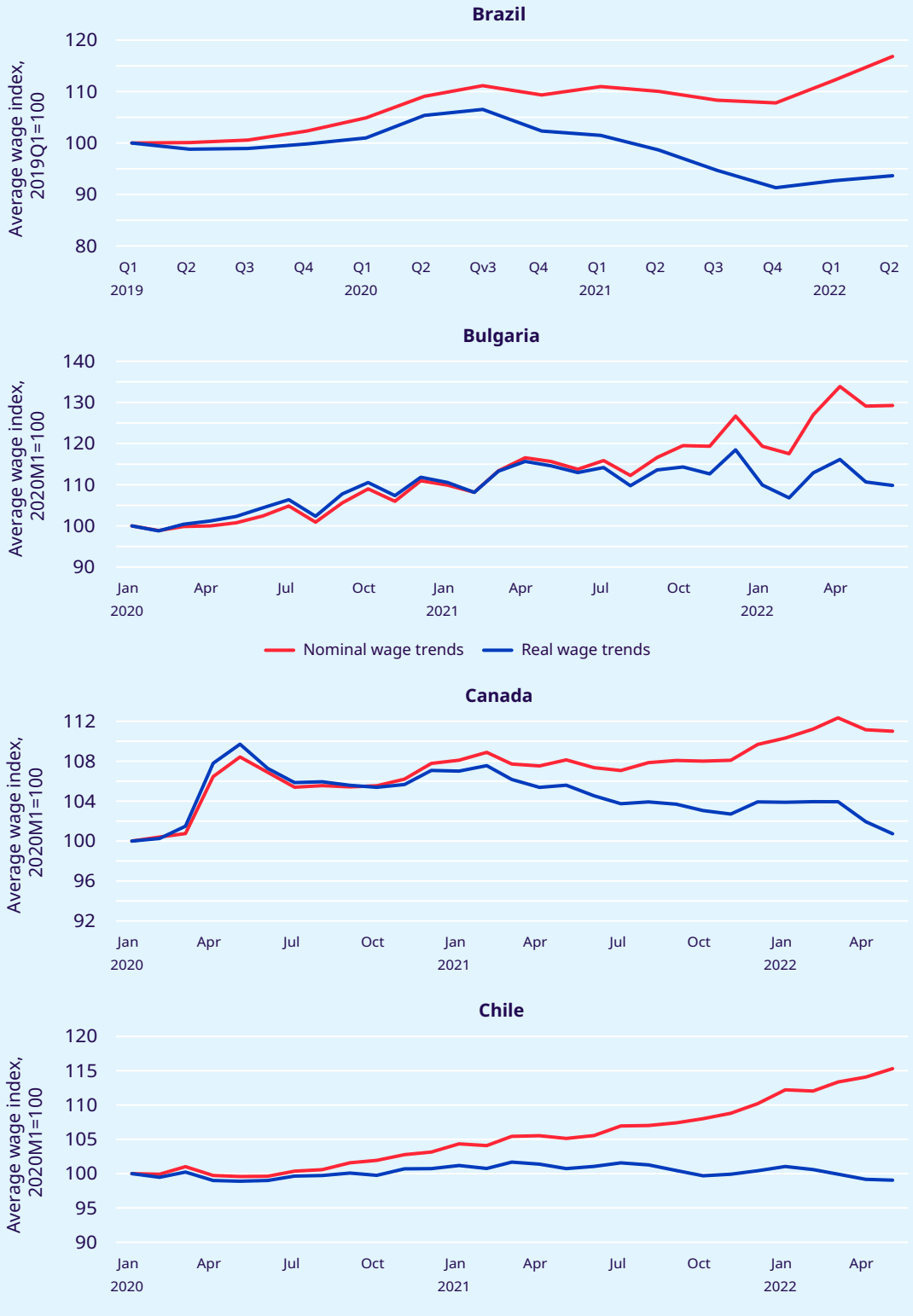
a much higher increase than in any of the pre-pandemic years, when real wage growth fluctuated at very low rates. In 2021, the collapse in real wage growth to –1.4 per cent was driven largely by a sharp decline in real wages in Brazil, estimated at –7.0 per cent in 2021. Figure 3.4 displays monthly wage data for Brazil, showing the fall in average real wages between the third quarter of 2020 and the last quarter of 2021. Although real wages in Brazil increased somewhat during the first half of 2022, they declined on average across the region as inflation started to make itself felt. The data for Chile, for example, show that real wages have been trending modestly downwards since January 2022.

In the European Union, real wage growth fluctuated between approximately 1 and 2 per cent before the outbreak of the pandemic (figure 3.3, panel B). In 2020, real wages froze – but did not decline on aggregate – most likely as a result of a combination of forces pulling in different directions, including: (a) declining wages for some workers; (b) the massive use of temporary wage subsidies to maintain the wages of millions of workers, even though their hours of work declined; and (c) composition effects pushing average wages up, since even moderate employment losses disproportionately affected low-paid workers. After a temporary recovery of wage growth in 2021, real wages fell to –2.4 per cent in the first half of 2022 (to –2.2 per cent if the United Kingdom is included) as inflation cut into the value of wages. In the somewhat broader but overlapping region of Northern, Southern and Western Europe (figure 3.3, panel A), trends are similar to those in the EU.[7] In figure 3.4, wage trends are illustrated by monthly wage data from Sweden and the United Kingdom, both of which display relatively stable average real wages in 2020 and declining real wage trends since late 2021 and early 2022. The two countries also reflect the heterogeneity of situations in 2020, since a composition effect (and hence increasing wages due to falling employment among low-paid workers) is discernible in the United Kingdom but no such effect manifests itself in the data from Sweden.

In Eastern Europe, real wages increased relatively fast before the pandemic, growing at rates above 5 per cent between 2017 and 2019, and even above 8 per cent during 2018. The outbreak of

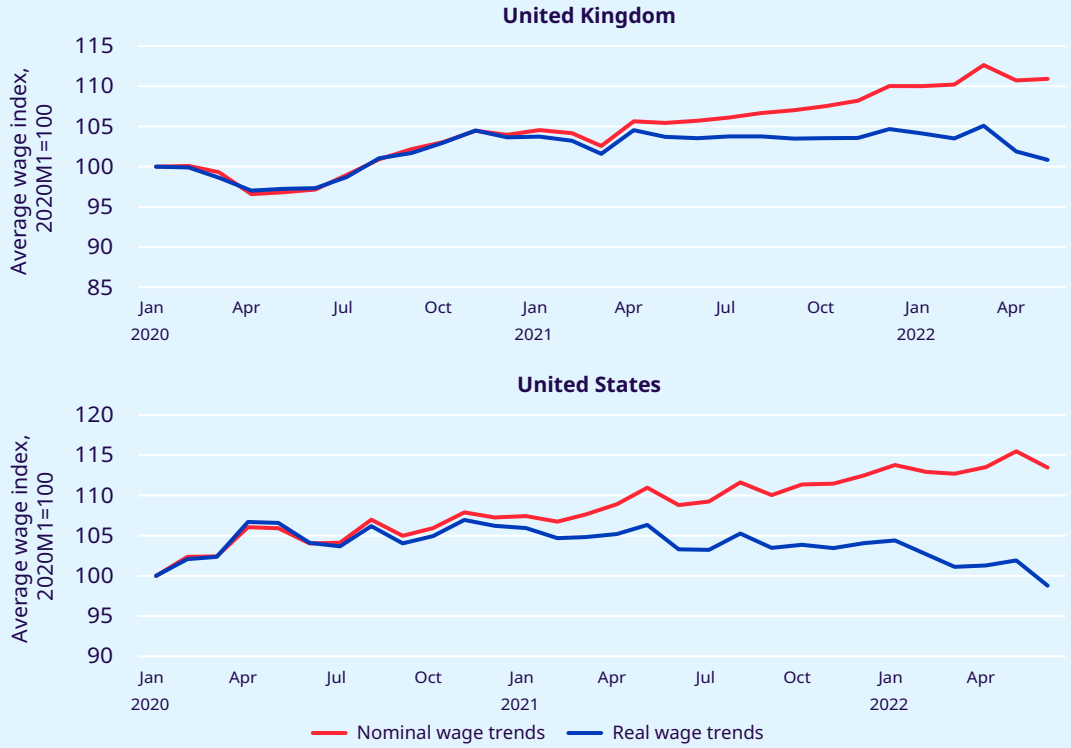
7 The overlap is important, since the EU plus the United Kingdom account for 84 per cent of the population of Northern, Southern and Western Europe.

Figure 3.4. Nominal and real wage growth in selected countries, January 2020–June 2022 (index: January 2020 = 100)



▶ **Figure 3.4.** ***(cont'd)***

▶ **Figure 3.4.** ***(concl.)***



Note: Brazil, South Africa and Spain use a quarterly index, and for these countries Q1 2019 = 100; (a) Brazil: average real and nominal income from all jobs, usually received per month, of people aged 14 years or over with income from work who were employed in the reference week; (b) Bulgaria: average gross monthly wages and salaries of employees under labour contracts; (c) Canada: average weekly earnings, including overtime, for all employees (industrial aggregate excluding unclassified businesses); (d) Chile: real and nominal remuneration indices for people aged 15 years and over; (e) Malaysia: average salaries and wages per employee in manufacturing sector; (f) South Africa: total remuneration per worker in non-agricultural sectors; (g) Spain: total wage cost per worker, seasonally and calendar-adjusted; (h) Sweden: average monthly salary of non-manual workers in the private sector, excluding variable supplements; (i) United Kingdom: average weekly earnings, seasonally adjusted, whole economy; (j) United States: average weekly earnings of all employees in the private sector, seasonally adjusted.

Sources: (a) Brazilian Institute of Geography and Statistics; (b) National Statistical Institute of Bulgaria; (c) Statistics Canada; (d) National Institute of Statistics of Chile; (e) Department of Statistics Malaysia; (f) Statistics South Africa; (g) National Institute of Statistics of Spain; (h) Statistics Sweden; (i) UK Office for National Statistics; (j) US Bureau of Labor Statistics.

the pandemic slowed down real wage growth to to 4.0 per cent in 2020 and 3.3 per cent in 2021, whereas in the first six months of 2022 accelerating price inflation caused real wage growth to decline to –3.3 per cent. Significantly, the composition effect was not a dominant factor in wage statistics in this region in 2020. Furthermore, the moderate increase in wage growth in 2021 could to some extent be explained by inflation rates remaining rather low during 2021, especially in comparison with the rest of the world. The data from Bulgaria in figure 3.4 are representative of the region as a whole, with moderate wage growth across both 2020 and 2021 and declining real wages since December 2021.

In Asia and the Pacific, the impact of high wage growth in China before the pandemic is significant, with real wage growth in the three years before the pandemic ranging from 3.0 to 3.3 per cent in the region when China is included, and reaching even higher rates in some of the earlier years. However, when China is excluded, regional wage growth

in the three years before the pandemic drops to 1.5 per cent or less. In 2020, wage growth in the region falls to 1 per cent, and even turns negative when China is excluded. After a recovery in 2021, wage growth declined again but remained positive at 1.3 per cent as inflation began to rise in 2022. The monthly data for Malaysia shown in figure 3.4 illustrate not only the seasonality of wage growth in that country (with typically higher pay in December than in other months) but also the slow wage growth since early 2020.

In Central and Western Asia, real wages grew at a relatively fast pace in the two years before the pandemic, as well as more generally between 2006 and 2019. In 2020, the first year of the pandemic, real wages fell to –1.6 per cent before rebounding very strongly in 2021. Estimates for 2022 show that in this region, too, real wage growth is being eroded by rising inflation.

In Africa, wage statistics remain patchy in many countries and sometimes display surprisingly large fluctuations. Regional estimates are therefore merely tentative. The available data suggest slow real wage growth (if any) in the years before the pandemic, a sharp fall in real wage growth of –10.5 per cent in 2020 and thereafter real wage growth of –1.4 per cent in 2021 and –0.5 per cent in the first half of 2022. The quarterly wage data for South Africa presented in figure 3.4 show a decline in average real wages at the height of the pandemic in the second quarter of 2020, followed by a recovery in the last two quarters of 2020, flat real wages during 2021 and a tendency to decline in the first quarters of 2022.

In the Arab States, wage statistics likewise remain patchy and their coverage is limited. Regional wage growth estimates are thus tentative at best. The scanty available data suggest low positive wage growth of 0.8 per cent in 2020, 0.5 per cent in 2021 and 1.2 per cent in 2022.

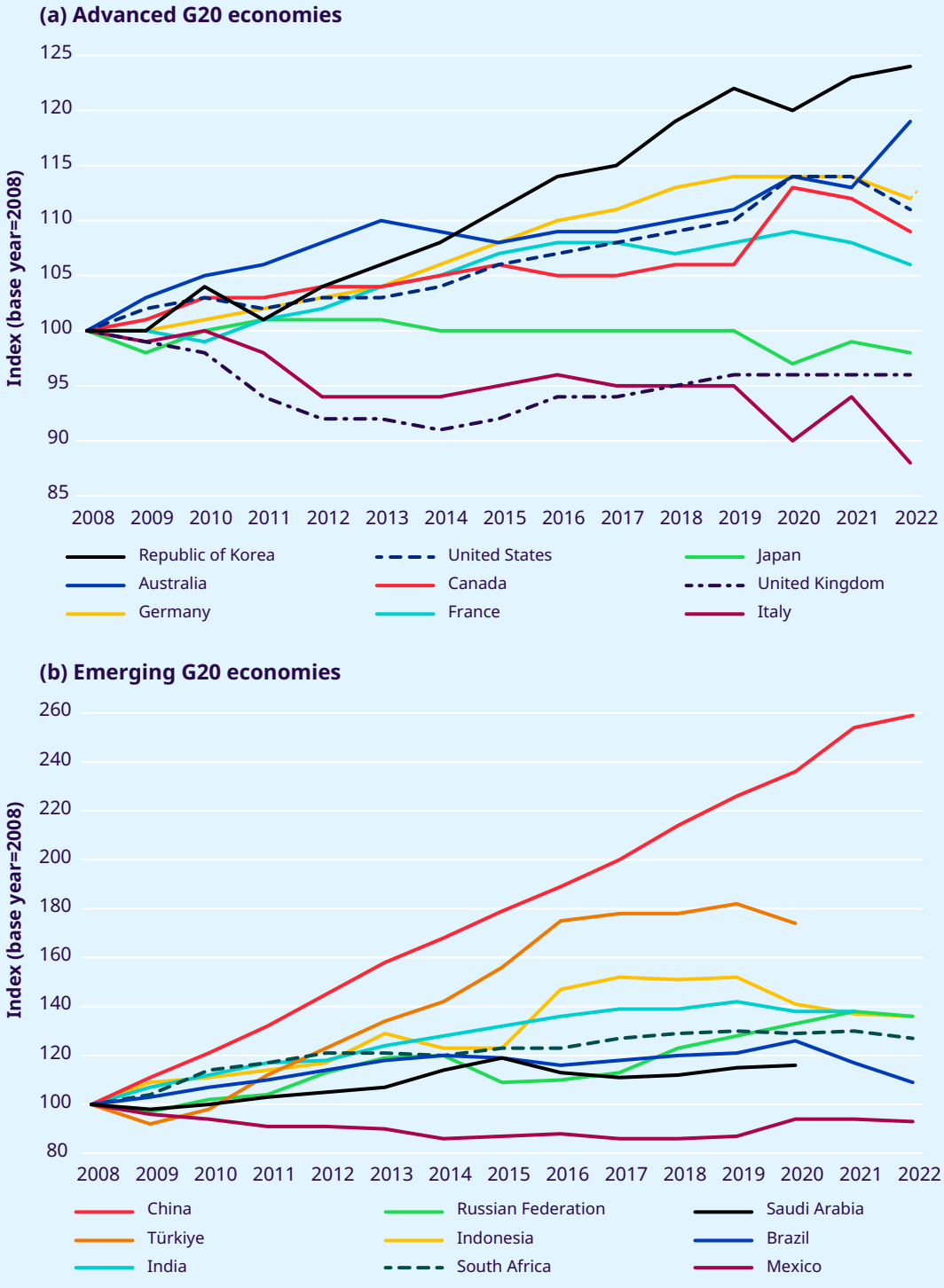
▸ 3.3. Wage indices in the G20 economies

Figure 3.5 shows the evolution of real wage indices since 2008 in some advanced and emerging G20 economies. Among the former, a combination of, on the one hand, composition effects during 2020, which faded away in 2021, and, on the other, a rapid rise in inflation (2021–22) has resulted in sharp jumps in the index value for several of these countries. Together, Australia and the Republic of Korea exhibit strongly rising real wage growth during 2008–22, whereas Italy, Japan and the United Kingdom are the only countries in the sample of advanced G20 economies where wages in 2022 are below their real value in 2008. Real wages in 2022 were worth 12 per cent, 2 per cent and 4 per cent less than in 2008 in Italy, Japan and the United Kingdom, respectively.

Among the emerging G20 economies, China continues to dominate the ranking in real wage growth, with estimates showing that monthly wages there in 2022 were about 2.6 times their real value in 2008. Except for Mexico, in 2022 all emerging G20 economies exhibit average monthly wages that are higher in real terms than the baseline (2008). In Mexico, real wages continue to trend at 7 per cent below their real value in 2008.

Despite more rapid wage growth among emerging G20 economies, there is still a significant gap between their average level of real wages and that of advanced G20 economies. Conversion of all the G20 countries' average wages into US dollars using exchange rates based on purchasing power parity yields a simple average wage of about US$4,000 per month in the advanced economies and about US$1,800 per month in the emerging economies.

▶ Figure 3.5. Average real wage index for the G20 countries, 2008–22



Note: Data for 2022 are based on the first and second quarters of the year.

Source: ILO estimates.

3.4. Wages and productivity trends in high-income countries

Productivity growth, and particularly real labour productivity growth, is a key factor in achieving real wage growth. As pointed out in previous editions of the *Global Wage Report*, average wage growth has lagged behind average labour productivity growth since the early 1980s in several large developed economies. Figure 3.6 shows that this continues to be true, on aggregate, in 52 high-income countries, where the gap between real productivity and real wage growth between 1999 and 2022 reached 12.6 percentage points in 2022, reflecting a further increase in the gap between the two series since 2019. Overall, figure 3.6 shows that, in real terms, labour productivity has increased more rapidly than wages over the past 22 years, with the former growing by 1.2 per cent annually and the latter by around 0.6 per cent annually. Moreover, the figure indicates that despite the shrinking of labour productivity during the global financial crisis of 2008–09 and during the pandemic (2020) the gap between the two series has continued to increase. Just before the onset of the COVID-19 pandemic, the gap showed signs of widening further. Although the decline in labour productivity growth during 2020 momentarily stopped the two series from growing farther apart, the sharp decline in real wage growth in the first two quarters of 2022 combined with positive productivity growth has, once more, increased the gap. In fact, the gap in 2022 is at its widest since the beginning of the twenty-first century.

> Wage growth has lagged behind labour productivity growth in several large developed economies in recent decades.

Figure 3.6 shows labour productivity bouncing back strongly in 2021 and 2022, while wage growth rose by about 1 per cent between 2020 and 2021 and declined in the first half of 2022. One possible reason for the increase in labour productivity could be

Figure 3.6. Trends in average real wages and labour productivity in 52 high-income countries, 1999–2022

Note: Labour productivity is measured as GDP per worker. Both the real wage and productivity indices are calculated as weighted averages using countries' populations as weights so that larger countries have a greater impact at each point estimate. The estimates were obtained using 1999 as the base year. Data for 2022 are based on the first and second quarters of the year.

Sources: The GDP data come from IMF (2022c), whereas wage employment data are taken from the Global Employment Trends data set in ILOSTAT. Wage data are based on ILO estimates.

> The sharp decline in real wage growth in the first two quarters of 2022 combined with positive productivity growth has, once more, increased the gap between real productivity and real wage growth.

that the crisis has destroyed less productive enterprises. Surviving enterprises are likely to have offered services and products at a higher added value per worker to costumers left behind by disappearing enterprises. According to a recent study by the US Bureau of Labor Statistics, this effect could account for about two thirds of the observed productivity surge between 2020 and 2021 (Stewart 2022). Lopez-Garcia and Szörfi (2022) argue that the containment measures imposed during the pandemic accelerated the digitalization of enterprises, thereby increasing the value added per worker in already high value-added sectors. They point out further that the speeding up of digitalization could explain why average growth in annual real GDP per hour worked rose to 1.7 per cent in the eurozone between the last quarter of 2019 and the first quarter of 2021 – an increase that is more than twice the average rate over the period 2014–19. It has also been observed that in the United States corporate profits soared in 2022 (Pickert 2022).

Beyond averages: The greater impact of inflation on the purchasing power of low-wage earners

3.5. The cost of inflation across the income distribution

In the previous sections of this report, the rise in inflation was discussed under the premise that the increase in the cost of living has been the same for all households. This section shows that such an assumption is incorrect and that households at the bottom of the income distribution face a greater cost-of-living burden when prices are high and rising. Hence, even if nominal wages are adjusted for price inflation as measured by the consumer price index (CPI), the wages of earners in low-income households will suffer a greater loss in purchasing power than those of their counterparts in higher-income households.

Within countries, the spending pattern of households varies according to their location on the household income distribution. Low-income households – as measured on a per capita basis – have less leeway, since they spend a greater proportion of their smaller incomes on basic items such as food, housing and utilities. At the upper end of the income distribution, a larger income allows these households to cover their basic needs while at the same time leaving them with ample margin to spend on other items (such as health, education or culture) or to build up their savings with a view to protecting themselves against future uncertainties, including those arising from potential new crises. There are many studies that examine how the share of household expenditure on basic needs varies across income groups. For example, Whitmore-Schanzenbach et al. (2016) found that in the United States, low-income households, defined as

> Households at the bottom of the income distribution face a greater cost-of-living burden when prices are high and rising.

the bottom 20 per cent of the income distribution, spend 82 per cent of their income on basic needs, including 41 per cent on housing and about 15 per cent on food. In contrast, middle-income households spend 78 per cent of their income on basic needs, including about 33 per cent on housing and 13 per cent on food. When households are fractioned grouped into smaller quantiles, the difference in spending patterns between households at the bottom lower and upper ends of the income distribution top households increases further. Similar observations seem to apply to all regions and countries in the world. Cross-country studies provide evidence suggesting that the ratio of spending on basic goods between high- and low-income households is higher in low- and middle-income countries than in high-income countries (see, for example, Clements and Theil 1996).

Different spending patterns have implications for the cost of living as measured by the CPI. Typically, the CPI is constructed using a basket of goods and services (including food, housing and transport) that reflects the average spending patterns of a large proportion of households in the population (see box 3.2). These patterns are captured by allocating weights to each item in the basket. For example, in 2022, the construction of the CPI in the United States gives a 13.4 per cent weight to the category "food" and a 32.4 per cent weight to the category "housing" (United States of America, BLS 2022). In France, the category "food" receives a weight similar to that in the United States (14.7 per cent) but "housing" is assigned a much lower weight, namely 15.5 per cent (France, INSEE 2022). Changes in weights and in the prices of each of the items included in the basket ultimately determine how the CPI evolves. Like other indices, the CPI is expressed with a specific period as the reference base. For example, if the CPI is 110 in 2022 based on 2019 (with the index in that year equalling 100), this means that prices have increased, in general, by 10 per cent between 2019 and 2022.

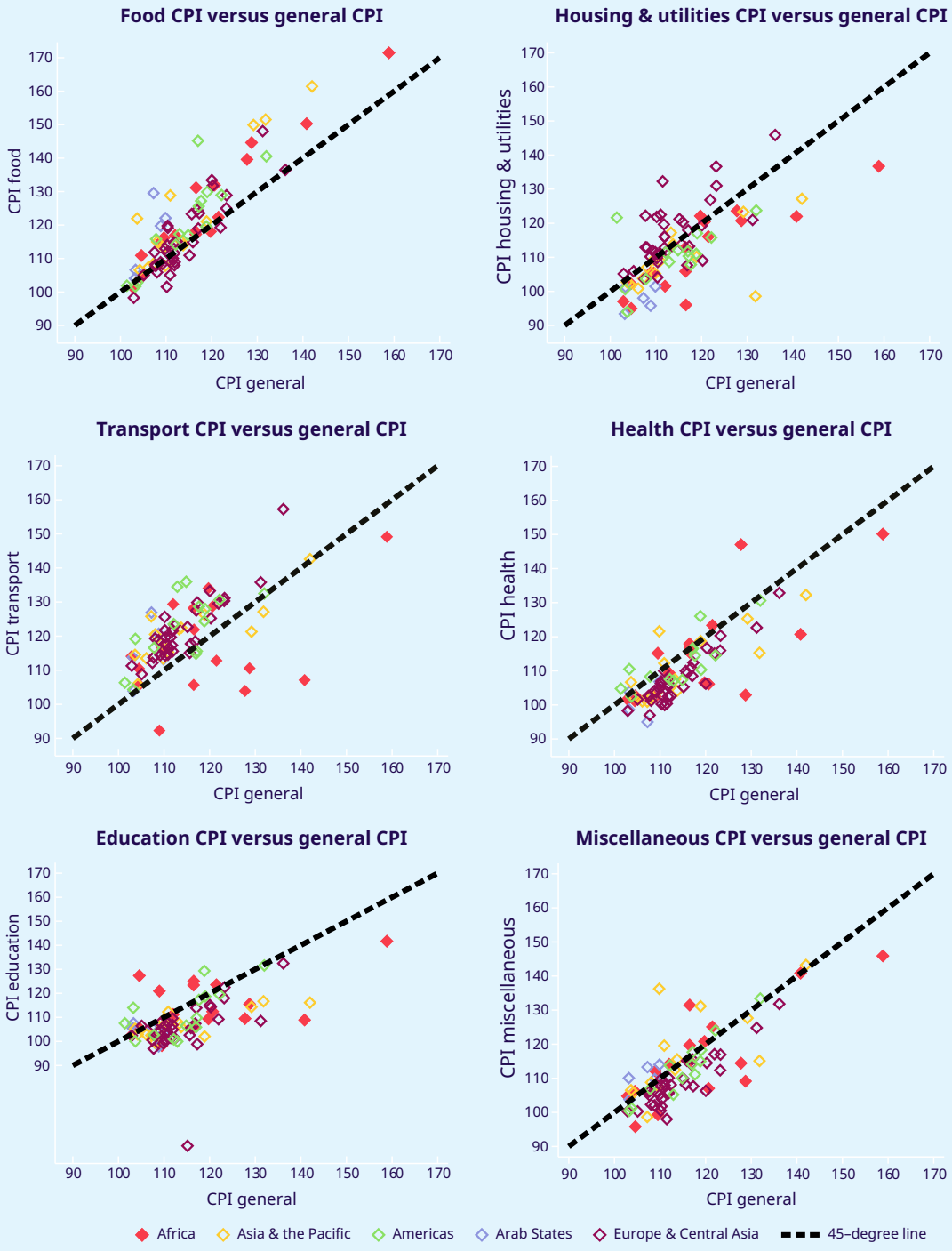
The construction or adjustment of the CPI does not take into account differences in consumption patterns between households across the income distribution. Weights and prices may reflect regional variations, but it is the average spending patterns at the population level that drive the construction of weights, while the change in prices between periods is what drives the changing values of each item in the CPI basket. Since food, housing, energy and transport are essential items, demand for these goods and services does not diminish very much even when their prices increase: they are what is referred to as "price-inelastic". Likewise, many essential items are susceptible to greater price volatility than other items in the CPI basket of goods and services.[8] With the prices of these items rising faster, the CPI for them also rises faster and is often higher than the CPI summarizing the general price level. Figure 3.7 compares the main groups of item-specific CPI – food, housing, transport, education, health and miscellaneous – with the general CPI for about 100 countries drawn from all geographical regions. As can be seen there, food, housing and transport CPIs are all higher than the composite general CPI, which is generally used in discussions about wages.

What is the implication of this for low-income households, in which low-wage earners are likely to be concentrated? When low-income households spend a greater share of their income on items that exhibit a higher CPI, the composite general CPI underestimates the true increase in the cost of living faced by these households. Table 3.1 illustrates this for Mexico, where households in the bottom decile of the income distribution spend 42 per cent of their income on food, while top-income households spend only 14 per cent. Moreover, whereas the general price index in Mexico in June 2022 had experienced a year-on-year increase of 8.2 per cent, the price index for food had increased by 14.1 per cent. Taking these

> When low-income households spend a greater share of their income on items that exhibit a higher CPI, the composite general CPI underestimates the cost-of-living increases they face.

8 In fact, when calculating "core inflation", which measures the underlying or long-term inflation rate, food and energy price inflation are usually excluded.

▶ Figure 3.7. General consumer price index (CPI) compared with item-specific CPI, by region, April 2022



Note: The outlier in the "education CPI versus general CPI" chart is the Netherlands.

Source: ILO estimates based on item-specific CPI data published by the IMF, https://data.imf.org/regular.aspx?key=61015892.

▶ Box 3.2. How are inflation rates calculated?

Inflation is probably one of the economic terms with which individuals and households are most familiar because it captures the cost of living and is often mentioned in the news. In its basic form, inflation is defined as the measure, specific to a country,[1] of how much more expensive a set of goods and services has become over a certain period. For example, if inflation has increased by 2 per cent between two consecutive years, this means that 2 per cent more nominal income will be needed in the second year to maintain the same consumption of goods and services as in the first year. To estimate the increase in the cost of living between two consecutive periods, national institutions in charge of producing inflation estimates[2] construct a basket of goods and services that reflect the average consumption of households in the country. The institutions in question then monitor the evolution of the prices of the goods and services included in the basket.

Household surveys are used to determine the composition of the basket of goods and services, together with the weight that each item in the basket should be assigned. These surveys are commonly structured into nine parts: food and other perishables; clothes and footwear; furniture and household goods; housing costs, including utilities and energy; health; education; food consumption outside the house; culture and recreation; and other services purchased by the household, including the hiring of gardeners, domestic workers or secretaries. The weights assigned to each item in the basket reflect the average (or typical) spending patterns among the households surveyed. Thus, changes in the spending patterns of households across the income distribution are not necessarily taken into account when constructing such weights.[3] Because these surveys are not repeated annually – there is usually a five- to ten-year interval between them – the items in the basket remain relatively constant over time. Since consumption patterns vary between countries, the weight assigned to each good and service that enters a basket also varies between countries, in many cases reflecting spending patterns at the country level (see figure 3.B2).

The prices of the goods and services included in the basket are updated much more frequently. This is done by means of standardized surveys that track the price of items at regular time intervals. Price surveys vary from country to country as well as in their frequency; they can be spot surveys conducted at retail outlets and markets or they can be based on "big data".[4] The change in the price of goods and services included in the basket, over some fixed period of time, is what determines the change in the consumer price index (CPI), thereby reflecting changes in the cost of living. For example, if the year 2020 is taken as the base year in a country (2020 = 100), and consumer price inflation between January and December 2021 is estimated at 2 per cent, the CPI would equal 102 for 2021. "Core inflation" is an alternative estimate that is often used to better understand underlying and persistent inflation in a given country. When calculating core inflation, items with volatile prices (such as food and energy) are excluded, as are those with prices regulated by the government.[5]

Measuring inflation allows for the adjustment of nominal incomes (such as wages) so that earners and their households can maintain a similar purchasing power over time. When nominal incomes are not adjusted upwards for inflation, real income falls and, with it, people's living standards. Inflation is often used as a key indicator to adjust wages through pre-established contracts, collective bargaining agreements and tripartite negotiations (for example, on the minimum wage). While the prices of many goods and services can adjust quite quickly to changing circumstances, contractual arrangements take longer to adjust. That is why it is often said that "wages are sticky". In fact, wage adjustment is often done on the basis of inflation expectations rather than actual inflation rates – that is, by considering expectations of future inflation (rather than current outcomes) when drafting contractual agreements.

[1] Within a country, inflation may be calculated for specific regions, including urban and rural areas.

[2] These are usually the national statistical offices, but in some countries the central bank is responsible (for example, in Mexico, Peru and several other mainly Latin American countries).

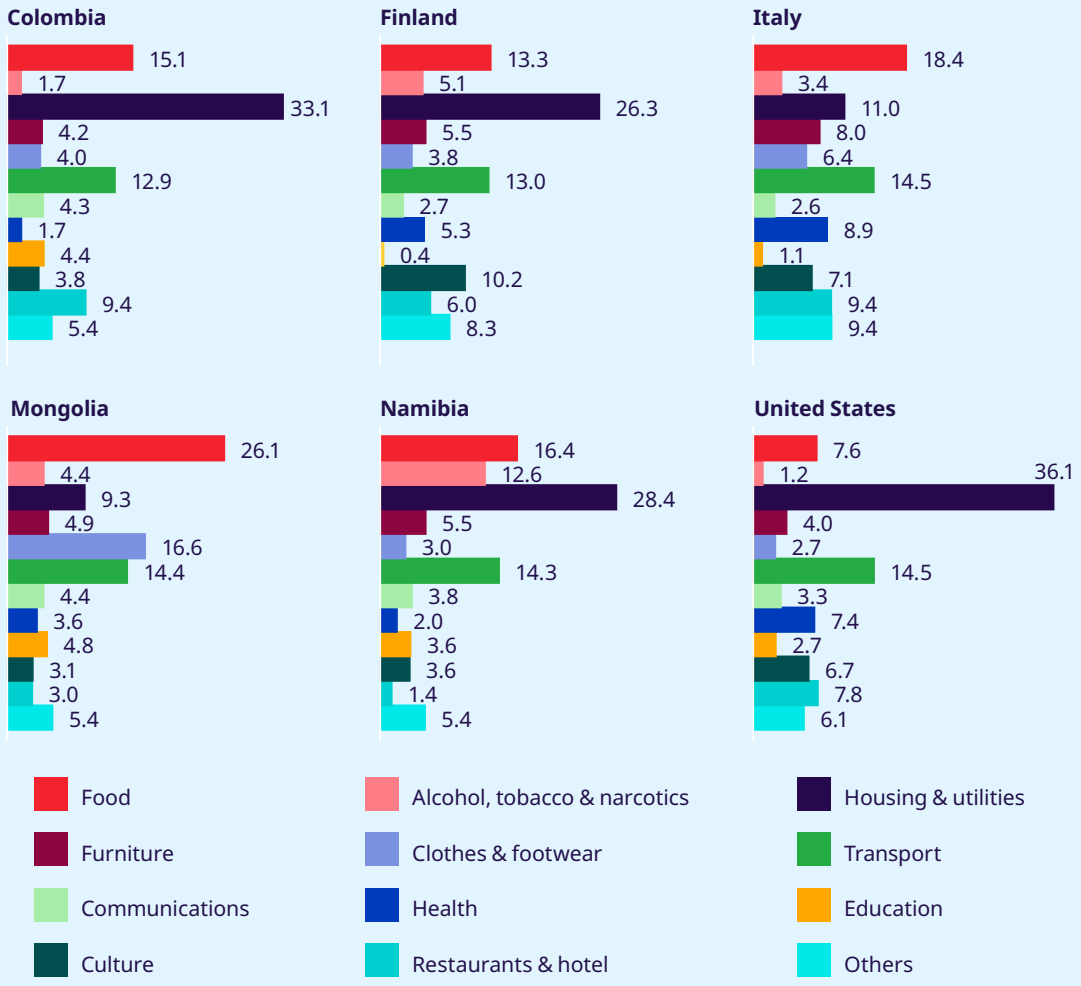
▶ Box 3.2. *(concl.)*

[3] For example, in the United States, the Bureau of Labor Statistics considers the spending patterns of households in cities and towns with at least 10,000 inhabitants, thereby covering the spending patterns of 93 per cent of the US population. As a complement, the Bureau collects information on the spending patterns of urban wage earners and clerical workers to construct an estimate of the cost of living that can be used to adjust certain categories of federal spending, such as social security benefits and food stamps.

[4] Big data requires automated processing, which comes with its own challenges, particularly when price inflation is based on a basket of goods and services that changes rapidly (Leclair 2019).

[5] There are other weighted baskets used to measure price changes. For example, in the United States there are two different indices of inflation – the CPI and the personal consumption expenditure price index – which vary mainly in how they measure price changes and the basket of goods. Other indices used to measure price changes include broader categories of expenditure that are less closely linked to the consumption patterns of households, such as the GDP deflator, which includes military expenditure and other government consumption expenditures. For a discussion of different price indices see ILO (2014, box 4).

▶ Figure 3.B2. Weights used to estimate overall consumer price index, selected countries, February 2022



Source: Item-specific CPI weights published by the IMF.

▶ Table 3.1. Spending patterns in the top and bottom deciles of the household income distribution and changes in consumer price index (CPI), by item in CPI basket, Mexico and Switzerland, 2021–22

	Mexico			Switzerland		
	Spending share of bottom decile (%)	Spending share of top decile (%)	% change in prices (June 2021–June 2022)	Spending share of bottom decile (%)	Spending share of top decile (%)	% change in prices (June 2021–June 2022)
Food and non-alcoholic beverages	42.2	13.9	14.1	14.5	10.2	1.9
Alcoholic beverages, tobacco and narcotics	3.8	1.6	8.2	2.3	1.7	1.6
Clothing and footwear	3.8	4.9	5.6	2.8	4.6	2.0
Housing, water, electricity, gas and other fuels	21.0	17.2	2.7	37.4	20.9	4.6
Furnishings, household equipment and routine household maintenance	1.0	1.8	8.6	3.3	5.4	5.0
Health	3.3	3.3	5.7	6.0	3.4	–0.4
Transport	9.8	16.8	7.4	9.7	14.0	12.4
Communication	2.1	4.6	–2.7	4.0	2.6	0.5
Recreation and culture	n/a	n/a	6.1	8.0	13.7	1.5
Education	5.6	14.9	3.3	n/a	n/a	0.7
Restaurants and hotels	4.8	11.7	10.2	7.7	13.0	3.4
Miscellaneous goods and services	2.6	9.2	9.1	4.3	10.5	0.7
% change in the cost of living in each country according to the general CPI (June 2021–June 2022)	8.2			3.4		
% change in the cost of living taking into account item-specific CPIs (June 2021–June 2022)	8.9	6.8		3.9	4.0	

n/a = data not available

Source: ILO estimates. See Appendix I for the sources of data on spending patterns by household income deciles. Increases in item-specific CPIs were estimated using the IMF monthly CPI series.

> For low-income households, even if wages were to be adjusted to reflect the general CPI, the real wage adjustment would fall short of the cost-of-living increases that they face.

differences into account, and using the increase in the price of each category of goods and services, table 3.1 shows the difference in the cost of living faced by bottom- and top-income households during the period June 2021–June 2022. In Mexico, bottom-income households would have faced, on average, an 8.9 per cent increase in the cost of living between 2021 and 2022, whereas among top-income households the increase would have been, on average, 6.8 per cent. Thus, for low-income households, even if wages were to be adjusted to reflect the general CPI, the real wage adjustment would fall short of the cost-of-living increases that they face.

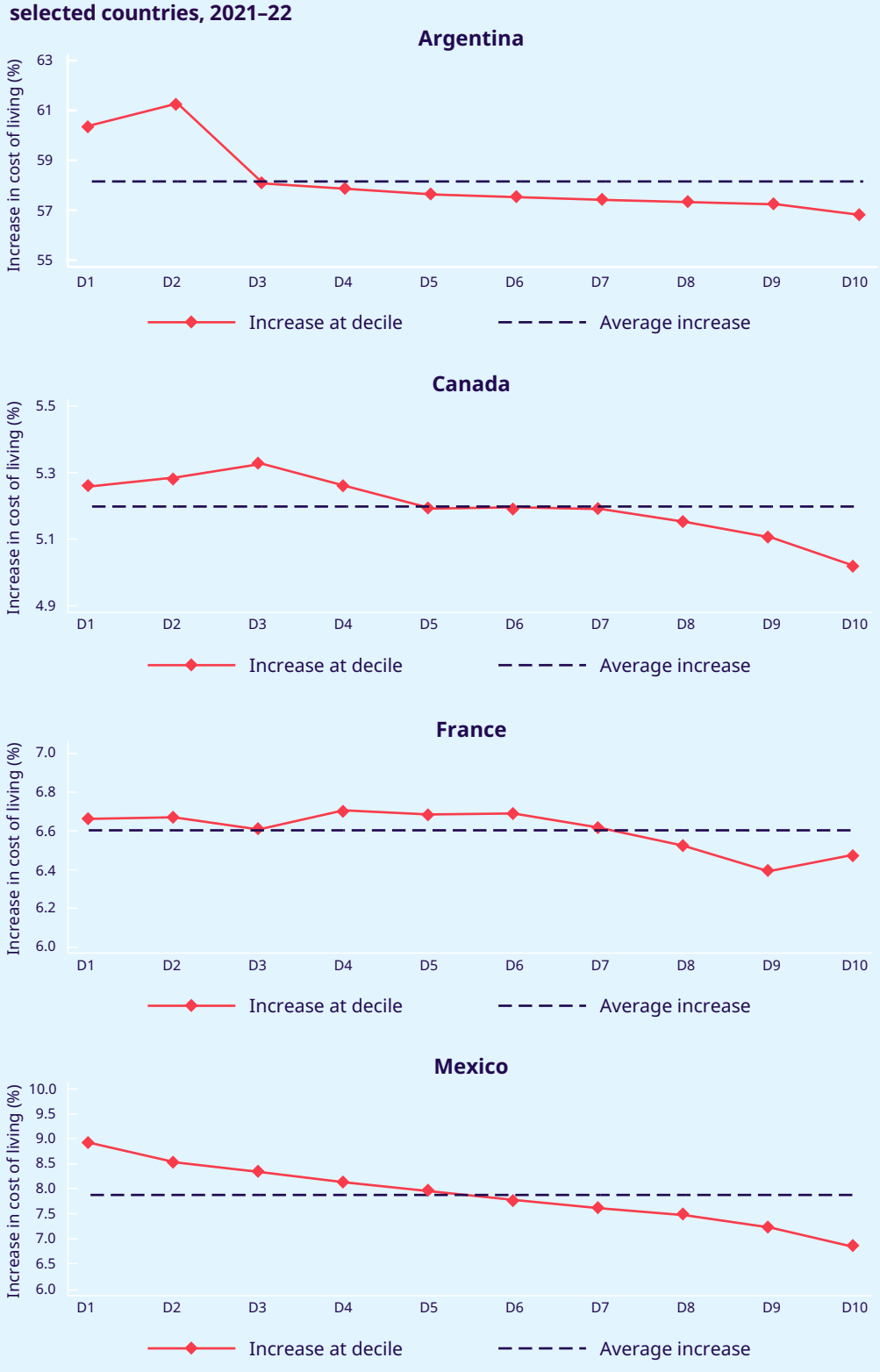
Of course, the extent of the variations in cost-of-living increases across the income distribution differs between countries. Table 3.1 also provides data for Switzerland, where the shares of household income spent on essential goods by bottom- and top-income households are more similar, reflecting the fact that there is less income inequality than in Mexico. In Switzerland, the increase in the cost of living is approximately the same for the two deciles, at 3.9 per cent and 4.0 per cent for bottom- and top-income households, respectively.

Applying a calculation similar to that in table 3.1, but this time to each decile of the household income distribution, figure 3.8 shows by how much the cost of living increased between 2021 and 2022 at each decile for countries with available data on spending across the income distribution. For a majority of countries, it can be seen that the increase in prices between 2021 and 2022 implied greater increases in the cost of living at the lower deciles of the income distribution, while the increase in the cost of living declines steadily at higher deciles. For example, in Spain, price changes in 2021–22 increased the cost of living by 15 per cent for households in the bottom decile, while the increase was 2 percentage points lower (at 13 per cent) among households in the top decile. In France, the difference is smaller across deciles (6.7 per cent at the bottom versus 6.4 per cent at the top), but price changes between 2021 and 2022 still meant that the increase in the cost of living for households at the bottom of the income distribution was 0.3 percentage points higher than the increase for the highest-earning households. Switzerland has more variation in spending patterns among households in the intermediate deciles of the income distribution, which explains the inverse U-shape in figure 3.8.

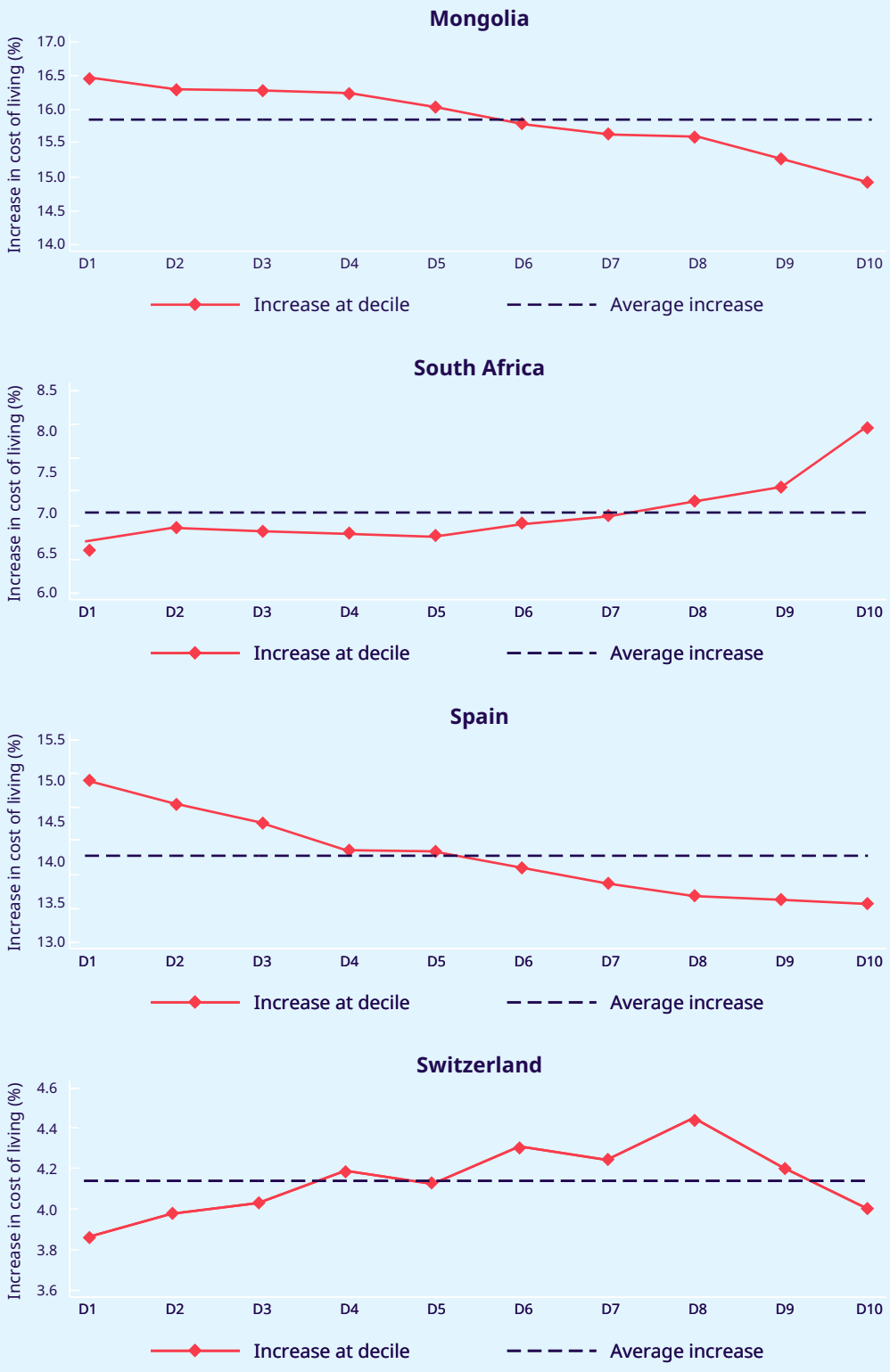
In South Africa, the increase in the cost of living is higher for high-income households – a finding that can be explained by the rise in the cost of transport. While transport accounts for less than 1 per cent of expenditure among bottom-income households in South Africa, this share increases to about 22 per cent among households in the top decile. Significantly, transport is the CPI basket item with the greatest price increases during 2021 and 2022 (19.2 per cent). It is followed by food, the prices of which increased by 8.9 per cent over the same period, and which accounts for about 50 per cent of all spending among households in the bottom decile. If food, housing and transport were the only items considered in the computation, bottom-income households would exhibit the greatest increase in the cost of living, even though the highest-earning households spend a significant proportion of their income on transport.

> The increase in prices between 2021 and 2022 resulted in greater increases in the cost of living at the lower deciles of the income distribution than at higher deciles.

Figure 3.8. Percentage change in the cost of living for households in each decile of the income distribution compared with the average price increase, selected countries, 2021–22



▶ **Figure 3.8.** ***(cont'd)***



▶ **Figure 3.8.** ***(concl.)***

Note: Spending patterns are based on the latest available years and it is expected that such patterns would have remained constant over time. Estimates of the change in the cost of living (overall and by item) are based on the latest available month of information in the IMF CPI database. For all the countries in the above figure, these estimates are based on the change in the general CPI (or item-specific CPI) between comparable months in the second quarter of 2021 and the second quarter of 2022.

Source: ILO estimates. See Appendix I for the sources of data on spending patterns by household income deciles. Increases in item-specific CPI growth were estimated using the IMF monthly CPI series.

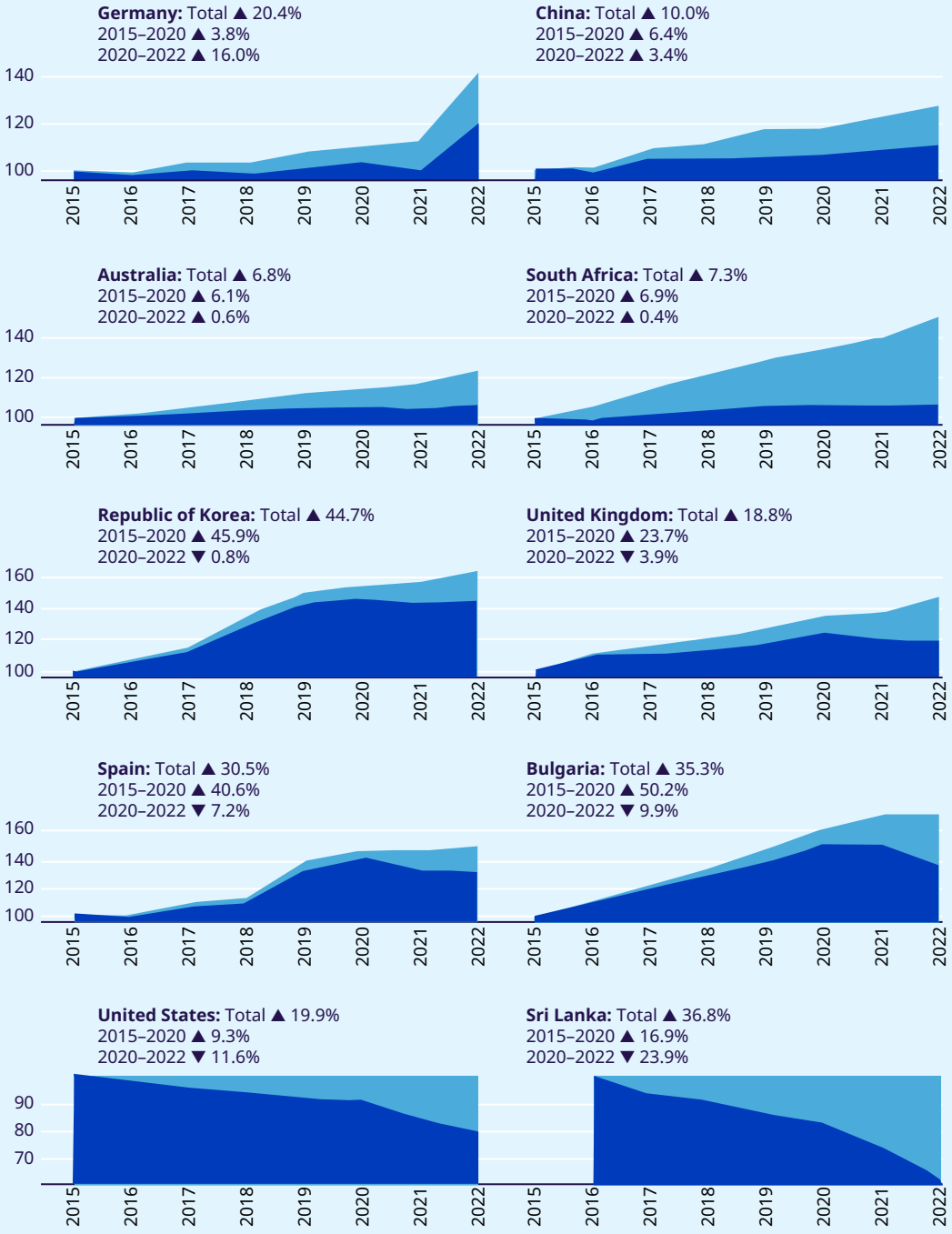
3.6. Inflation rates biting into the purchasing power of minimum wages

Minimum wages are widely used around the world to protect the incomes and purchasing power of low-paid workers and their families. As discussed in the *Global Wage Report 2020–21* (ILO 2020a), the adequacy of minimum wage levels depends crucially on the ability to review and adjust rates regularly. This requires a flexible adjustment mechanism that considers prevailing circumstances, the needs of workers and their families, and economic factors. In times of price inflation, if minimum wages are not adjusted – or if they are not adjusted sufficiently to keep up with rising prices – their real value diminishes. Furthermore, as pointed out in section 3.5, even where the minimum wage is adjusted for CPI increases, this may be insufficient to fully compensate for the rise in the cost of living faced by low-income households.

> In times of price inflation, the real value of minimum wages diminishes if they are not adjusted to keep up with rising prices.

Figure 3.9 shows the relative evolution of nominal and real minimum wages (as measured by the CPI for the sake of simplicity) for seven G20 economies, two additional countries in Europe (Bulgaria and Spain) and one additional country in Asia (Sri Lanka). Among these ten countries, between 2015 and 2022, the nominal minimum wage increased in all but two countries (Sri Lanka and the United States). During 2020–22, the real minimum wage increased in four of the ten countries (Australia, China, Germany and South Africa), thus decreased owing to rising inflation in the remaining six countries displayed in the figure.

Figure 3.9. Evolution of nominal and real minimum wages, selected countries, 2015–22
(index: year 2015 = 100)



Note: light blue = nominal; dark blue = real. Countries are arranged by descending order of the real minimum wage growth between 2020 and 2022. Minimum wage rates are the latest available as of 1 October 2022.

Source: ILO estimates based on the ILO minimum wage database for the minimum wage level and IMF (2022c) for inflation (end-of-period consumer prices).

How have the total wages earned by women and men been affected by the COVID-19 crisis and inflation?

3.7. Evolution of the total wage bill before and during the COVID-19 crisis

The recent erosion of real wages due to inflation comes on top of significant wage losses incurred by workers and their families during the COVID-19 crisis, which are not fully captured in the data on average wages presented in the previous sections of the report. This section therefore seeks to complement the earlier analysis by looking at changes in the total real wage bill. An analysis of total wage bills reveals how, during the lockdown months, the combination of job losses, shorter hours worked and adjustments to hourly wages resulted in an accumulation of lost earnings for wage employees and their families in many countries.

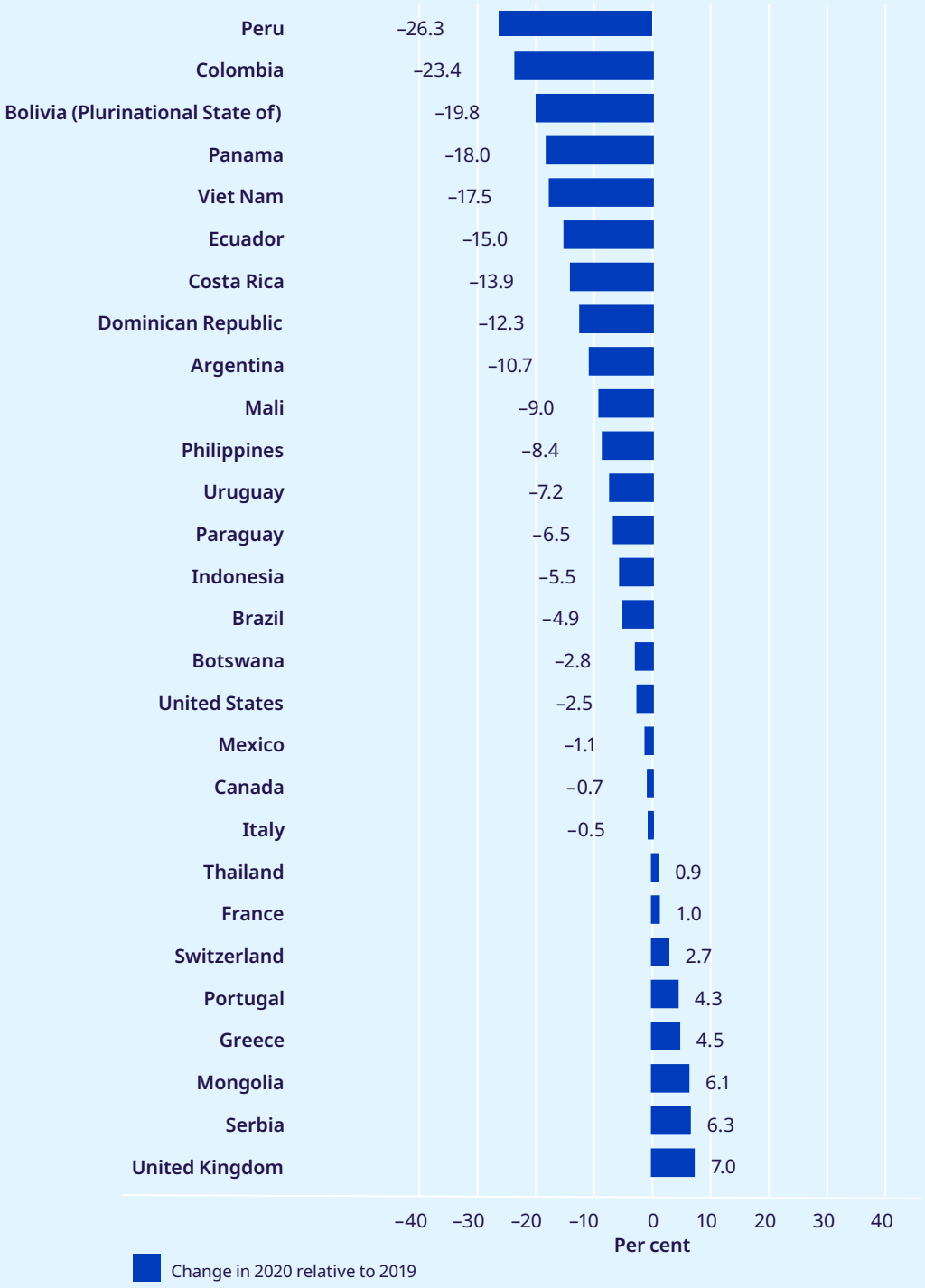
Drawing on quarterly survey data, figure 3.10 shows, for each country that provides such data, the change in the annual total real wage bill between 2019 (the base year) and each of the years up to the latest year, that is, 2020, 2021 and, for some countries, the first or second quarter of 2022. The annual total real wage bill equals the sum of real monthly earnings received by all wage employees in one year.

At the end of 2020, as may be seen in figure 3.10, panel A, 20 of the 28 countries shown in the chart had experienced a decline in the total real wage bill relative to 2019. The loss in total real wages ranged from about 1 per cent in Canada, Italy and Mexico to above 20 per cent in Colombia (23 per cent) and Peru (26 per cent). Considering all 28 countries in the chart, the average decline in the total wage bill was 6.2 per cent per country, which is equivalent to the loss of three weeks of earnings, on average, for each wage employee represented in these 28 countries. Out of the eight countries in which the total real wage bill increased, six are in Europe and two in Asia. In the European countries this was probably driven by stimulus packages (wage subsidies and job retention schemes) that helped to keep wage employees in the labour market during 2020. Wage subsidies are included in the sum of the total wage bill.

Panel B in figure 3.10 adds information from 2021: that is, it shows the change in the total real wage bill in 2020 relative to 2019, the change in 2021 relative to 2019 and the (cumulative) overall change between 2019 and 2021.[9] As can be seen, out of the 21 countries with data up to 2021, 15 continued to experience a lower total real wage bill in 2021 relative to 2019. However, the upswing in the labour market compared to 2020 is clearly visible: except in 3 of these 15 countries, namely Brazil, the Dominican Republic and Indonesia, the loss in the total real wage bill is considerably smaller in 2021 than in 2020. For example, in Peru, Colombia and the Plurinational State of Bolivia, the three countries with the greatest losses in panel B, the total real wage bill losses in 2021 relative to 2019 were 12.6 per cent, 9.4 per cent and 12.4 per cent, respectively, whereas in 2020 they exhibited, respectively, losses of 26.3 per cent, 23.4 per cent and 19.8 per cent. Moreover, during 2021, two countries – Canada and Mexico – reported increases in the total real wage bill relative to 2019, after having experienced losses in 2020. The average loss in the total real wage bill among all 21 countries in the chart was 8.6 per cent in 2020, whereas in 2021 this loss was reduced to 6.3 per cent, which remains considerable. In other words, among the 21 countries with data available for both 2020 and 2021, the decrease in the total wage bill is equivalent to four weeks of wages in 2020 and two weeks in 2021, implying a cumulative loss of six weeks of wages over these two years.

9 Seven countries shown in figure 3.10, panel A, had still not released their quarterly surveys for 2021 or 2022 at the time of writing. These countries – Botswana, France, Greece, Italy, Mali, Mongolia and Serbia – were therefore dropped from the analysis undertaken for the subsequent charts (panels B and C).

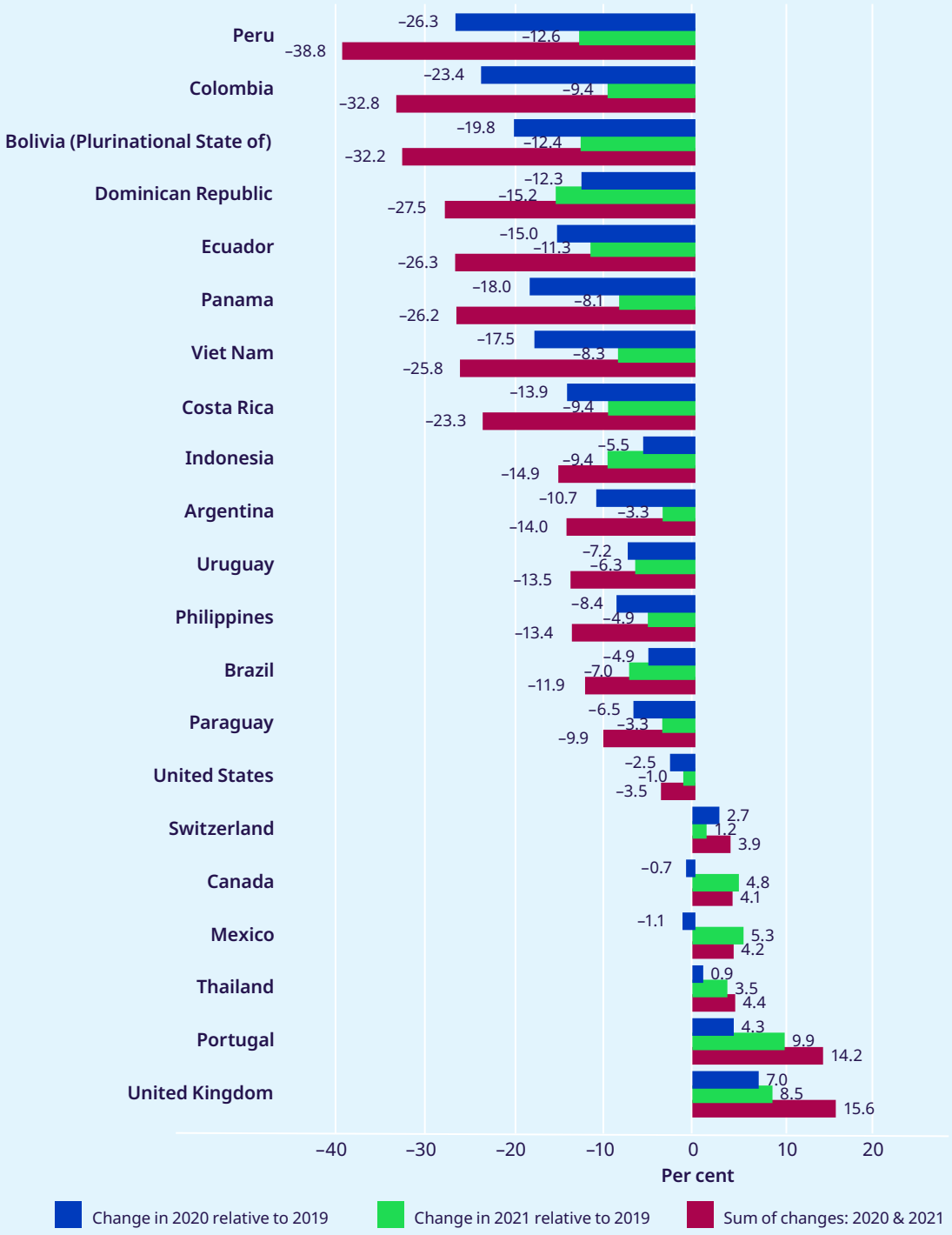
Figure 3.10, panel A. Change in total wage bill between 2019 and 2020, selected countries (percentage)



Note: The chart shows countries with data up to the end of 2020.

Source: ILO estimates. See Appendix I for the sources of survey data used in this report.

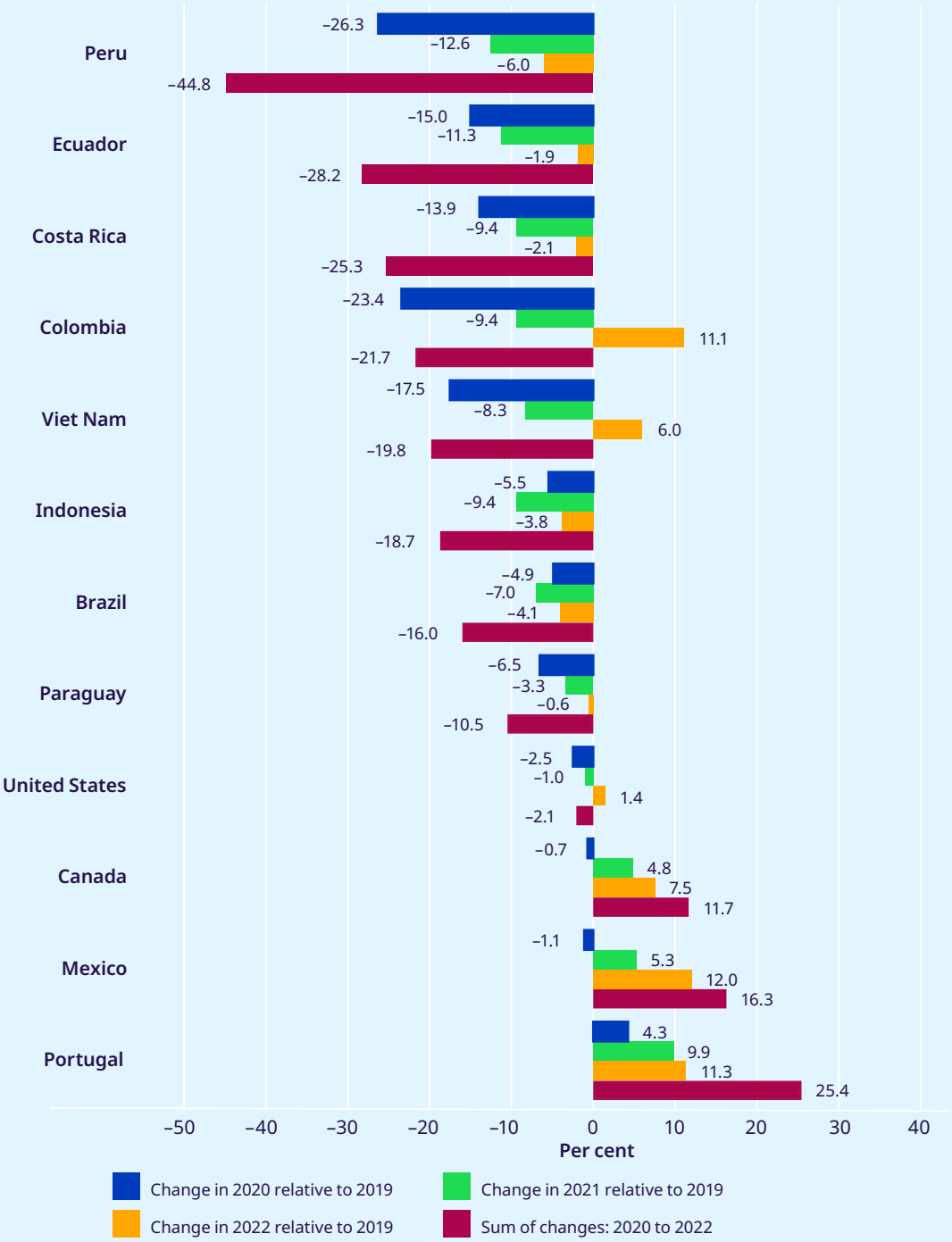
Figure 3.10, panel B. Change in total wage bill during 2020 and 2021 relative to 2019, selected countries (percentage)



Note: The chart shows countries with data up to the end of 2021. Countries are arranged by descending order of the sum of total wage bill changes in 2020 and 2021.

Source: ILO estimates. See Appendix I for the sources of survey data used in this report.

Figure 3.10, panel C. Change in total wage bill during 2020, 2021 and 2022 relative to 2019, selected countries (percentage)



Note: The chart shows countries with data up to the first (in some cases, up to the second) quarter of 2022. See Appendix I for details on data sets. Countries are arranged by descending order of the sum of total wage bill changes in 2020, 2021 and 2022.

Source: ILO estimates. See Appendix I for the sources of survey data used in this report.

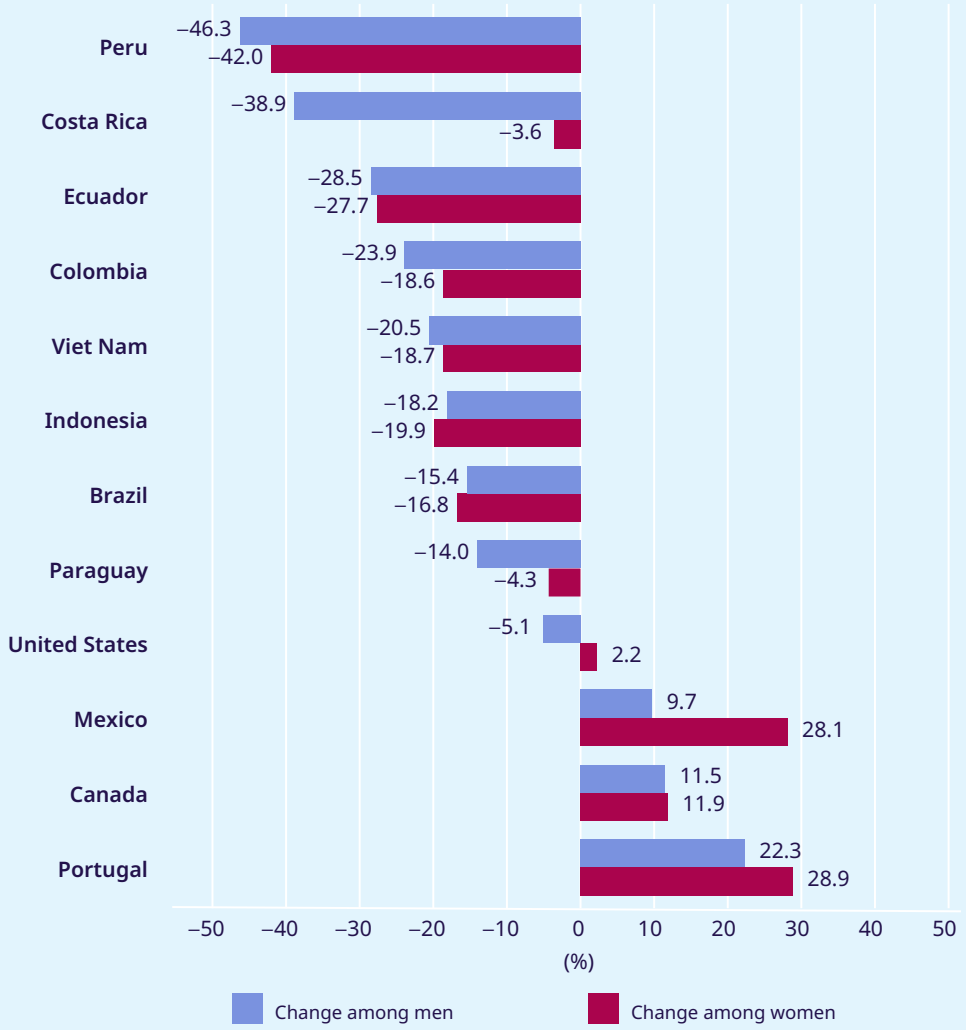
Finally, panel C in figure 3.10 adds information on the total wage bill loss in the first quarters of 2022 compared with (the first two quarters of 2019, and the cumulative loss between 2020 and 2022 in relation to the same period in 2019.[10] Only 12 countries out of the original 28 in panel A have data covering the period 2020–2022. Considering estimates for 2022 only, panel C attests to the gradual recovery of labour markets across regions: in only 6 of the 12 countries is the total real wage bill in the first two quarters of 2022 lower than that estimated for 2019. However, despite the improvement in the most recent quarters (2022), the cumulative change (2020–22) is negative in 9 of the 12 countries, which means that the losses caused by the COVID-19 crisis had not been fully recouped yet by mid-2022. Except in the United States, the cumulative losses over a period covering approximately 30 months since 2020 amount to the equivalent of 11 to 45 per cent of the total wages paid out in 2019. This earnings loss is likely to have translated into a decline in living standards or increasing debts, or both, for households in these countries and the corresponding regions of the world. In section 3.9 it will be shown that wage bill losses have a more negative impact among low-wage earners (and their families) than among their higher-paid counterparts.

Figure 3.11 offers a similar analysis to that underlying figure 3.10, but distinguishing between women and men and showing only the cumulative losses, rather than annual changes, in the total real wage bill up to the first quarters of 2022 relative to 2019. As can be seen, in 8 of the 12 countries there is a cumulative loss in the total real wage bill for both women and men, while in 3 countries the total real wage bill increased for both women and men. Among countries with a cumulative loss, in all but two – Brazil and Indonesia – the loss was greater among men, while in countries with a cumulative gain, the increase was higher among women. Figure 3.12 complements figures 3.10 and 3.11 by tracing the evolution of the total wage bill – for all wage employees, as well as for women and men separately – from the first quarter of 2019 up to the last available quarter in the data, which may be the last quarter of 2020, the last quarter of 2021 or the first or second quarter of 2022.[11] This figure, too, reveals considerable heterogeneity in the evolution of the total wage bills of women and men since the onset of the pandemic, with men incurring greater losses than women in several countries. However, these estimates should not be taken to imply that the concurrent labour market crises have hit men harder than women. The next section will discuss some of the complex ways in which these crises are impacting differently on women and men.

10 Data are available up to the second quarter for Canada, the United States, Colombia and Ecuador. For all other countries shown in figure 3.10, Panel C, data are available only up to the first quarter of 2022. The same applies to figure 3.11.

11 See Appendix I for more details of the survey data used in this report. Appendix II complements figure 3.12 by presenting estimates of the evolution of the total wage bill for countries with available quarterly data.

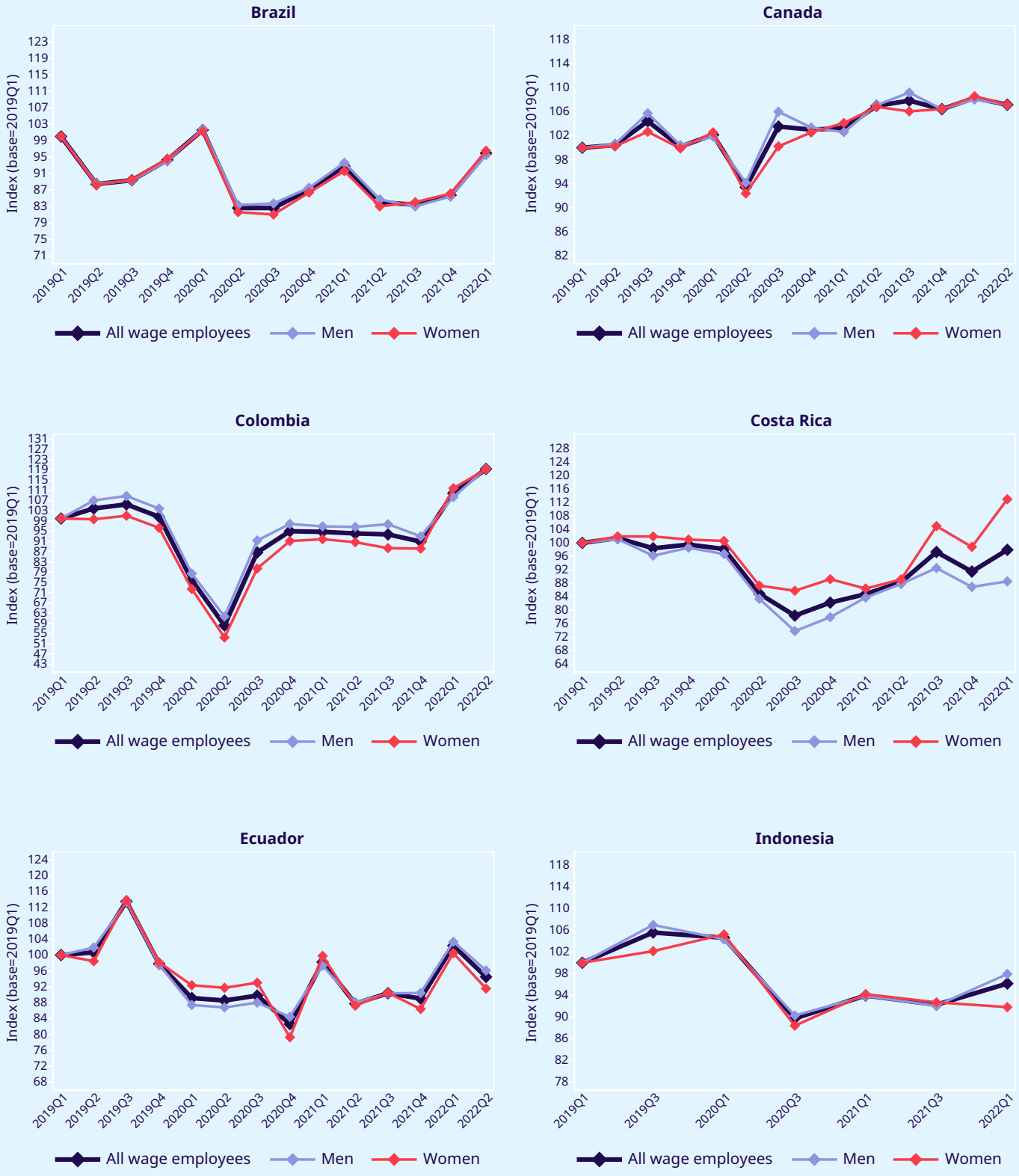
Figure 3.11. Change in total wage bill between 2020 and 2022 relative to 2019, by sex, selected countries (percentage)



Note: The chart shows countries with data up to the first (in some cases, up to the second) quarter of 2022. See Appendix I for details on data sets. Countries are arranged by descending order of the total wage bill change for men.

Source: ILO estimates. See Appendix I for the sources of survey data used in this report.

▶ **Figure 3.12. Evolution of the total wage bill, by sex, selected countries, 2019–22** (percentage)



▶ **Figure 3.12.** ***(concl.)***

Source: ILO estimates. See Appendix I for the sources of survey data used in this report.

3.8. Decomposing the change in the total wage bill over time, and a comparison between women and men

The change in the total real wage bill over a given period – say, between 2019 and 2020 – is the result of changes in total employment (including changes in the number of jobs and in the number of hours worked) and both real and nominal changes in hourly wages. This section analyses the contribution of each of these components to the change in the total real wage bill between 2020 and up to the first or second quarter of 2022. In so doing, it sheds light both on how the COVID-19 crisis has contributed to the reduction in the total real wage bill documented in the previous section and on how the ongoing cost-of-living crisis is also eroding wages. Appendix III describes the methodology used to decompose the change in the total wage bill.

Figure 3.13 shows the decomposition of the change in the total wage bill for 2020, 2021 and 2022, for each of the 12 countries that provided data up to the first or second quarter of 2022.[12] In 10 of the 11 countries where the wage bill decreased in 2020 relative to 2019, the decline in employment was the dominant negative factor. In some of these countries – Brazil, Canada and the United States – disentanglement of the factors behind the change in the total real wage bill in 2020 provides clear evidence of the effect of employment composition on wages that was described in box 3.1. The jobs lost during 2020 in these countries reduced the total real wage bill, but average nominal earnings increased as higher earners remained in wage employment, thereby mitigating the impact of employment losses on the decline of the total wage bill. Costa Rica, Mexico and Paraguay also exhibit some, albeit weaker, signs of a composition effect on wages when the changes in the total real wage bill are decomposed.

Viet Nam is the only country in the small sample covered by figure 3.13 where falling nominal wages were the main factor behind the decline in the wage bill in 2020, but it may be representative of other countries in Asia and other regions in which the COVID-19 crisis translated into wage cuts rather than job losses. In Ecuador, Indonesia and Peru, wages also declined in nominal terms and contributed to a reduced wage bill, but this effect was smaller than the employment effect. Portugal is the only country in the sample where the total wage bill increased in 2020. As in other European countries, wage subsidies and job retention schemes probably played their part in alleviating the impact of the crisis on wage employment there. However, even with the help of stimulus packages, there was a 1.6 per cent decrease in the total wage bill of Portugal due to employment losses. On the other hand, nominal wage increases were sufficiently large to increase the total real wage bill in 2020 by 4.3 per cent relative to 2019.

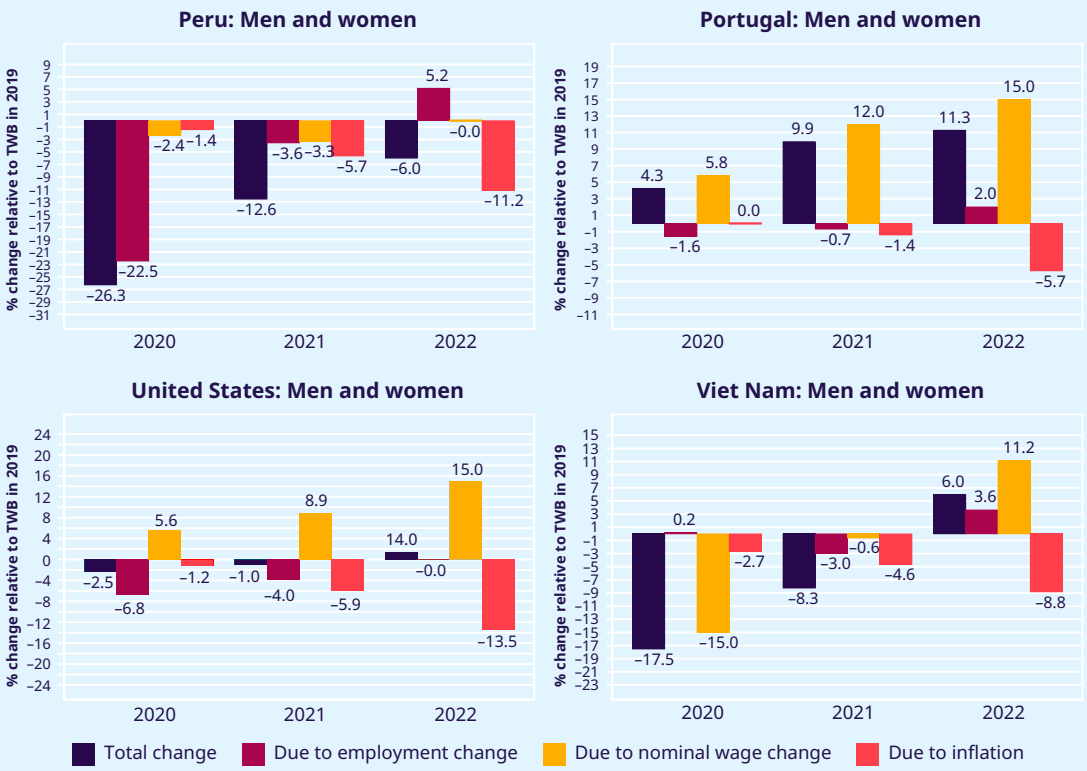
The decomposition in figure 3.13 shows that in 2021, the second year of the pandemic, employment outcomes – and the total real wage bills – were on the whole starting to improve. A few countries recovered from their total wage bill losses in 2020 and reported increases in 2021 relative to 2019 (for example, Canada and Mexico). In most other countries, although the total real wage bill in 2021 continued to be lower than in 2019, the loss in 2021 was smaller than that registered in 2020. However, the most striking finding from the decomposition in figure 3.13 is the strong irruption of inflation as the main factor impacting negatively on the total real wage bill across countries from 2021 onwards. The year 2021 is, therefore, when the effects of the two crises – the COVID-19 crisis and the cost-of-living crisis – overlap and interact to shape changes in the total real wage bill. In 2022, inflation is the dominant negative factor in most countries. Nowhere is this more visible than in Brazil, where the contribution of inflation to the reduction of the total real wage bill in the first quarter of 2022 relative to the first quarter of 2019 was as high as 18.2 per cent.

Figure 3.14 presents a decomposition of the change in the total wage bill similar to that in figure 3.13, but with disaggregation by sex. This helps one to

12 Charts providing a similar decomposition for countries with quarterly data up to 2020 or 2021 are given in Appendix IV.

Figure 3.13. Decomposition of the change in the total wage bill for 2020, 2021 and the first two quarters of 2022, selected countries (percentage)

▶ **Figure 3.13.** ***(concl.)***



Note: Appendix III describes the methodology used to decompose changes in the total wage bill between different years.

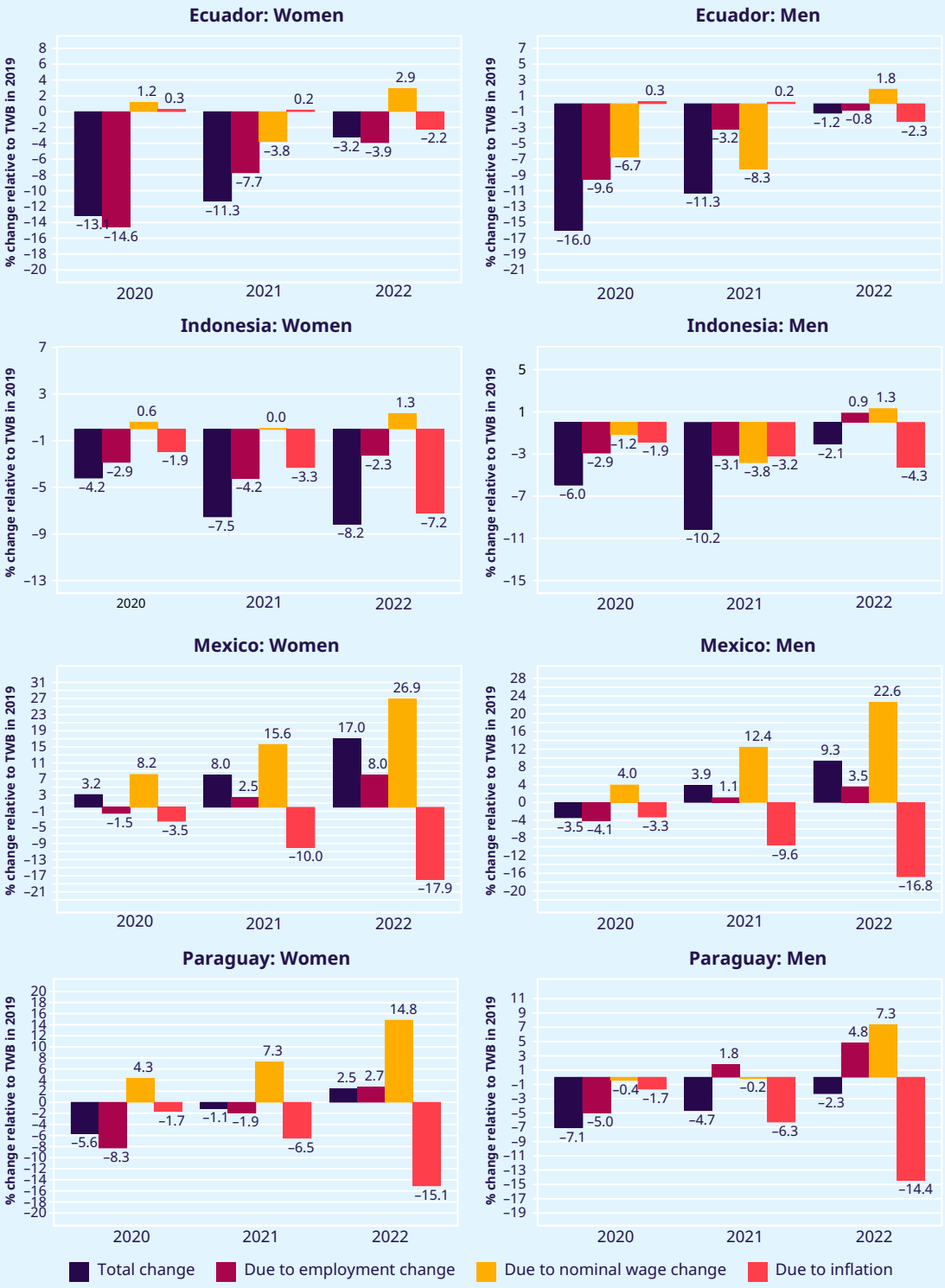
Source: ILO estimates. See Appendix I for the sources of survey data used in this report.

understand what may lie behind the larger decrease in the wage bill of men compared with that of women in many countries that was documented in the previous section. The striking picture that emerges for 2020, the year when the composition effect of wage employment had its greatest impact on average wages, may be interpreted as follows. In 2020, employment losses (including jobs and hours of work) were greater among women than among men in a majority of countries. At the same time, in 2020, increases in average wages were greater among women in all countries. These two observations taken together suggest that the composition effect, particularly in 2020, was far more pronounced among women. In other words, women lost more employment than men at the onset of the COVID-19 crisis and, at the same time, this employment loss had a greater impact in terms of increasing the average nominal wage of those women who remained in wage employment. This suggests that employment losses for women were even more concentrated among low-paid workers than for men.[13]

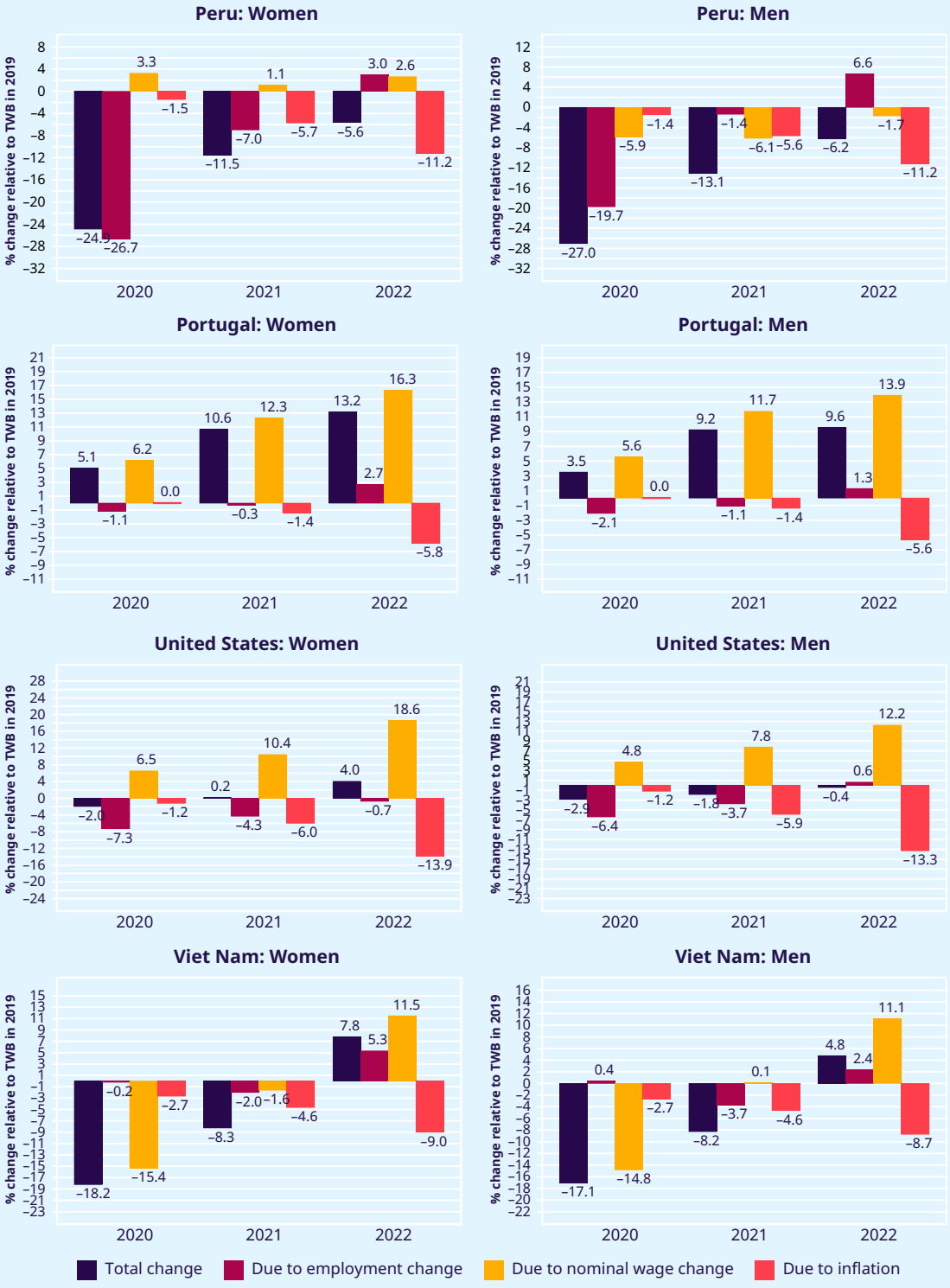
13 Figures 3.13 and 3.14 show that, in some instances, the effect of inflation on the total wage bill varies slightly between women and men, even though the inflation rate used to convert nominal to real values is identical for all wage employees. These differences occur because when decomposing the change in the total real wage bill over a given period, the inflation component is weighted by the relative change in employment, which varies between women and men. This can easily be seen from a glance at equation 4 in Appendix III.

Figure 3.14. Decomposition of the change in the total wage bill for 2020, 2021 and the first two quarters of 2022, by sex, selected countries (percentage)

▶ **Figure 3.14.** ***(cont'd)***



▶ Figure 3.14. ***(concl.)***



Source: ILO estimates. See Appendix I for the sources of survey data used in his report.

This differentiated composition effect among women and men is probably due to the clustering of women and men at different points along the wage distribution, a phenomenon that was already highlighted in the *Global Wage Report 2018/19* (ILO 2018). Thus, in many countries – particularly in low- and middle-income countries, where women's participation in wage employment is often lower than that of men – women tend to be concentrated in specific sectors and occupations, often at the two extremes of the wage distribution, while male wage employees, who often dominate in number, are more likely to be spread across the distribution. When a crisis wipes out low-paid jobs, as was the case in 2020, the effect among women, who are over-represented at the low end of the wage distribution, as demonstrated in the *Global Wage Report 2020/21* (ILO 2020a), is greater than that among men. At the same time, since the women remaining in wage employment are likely to be at the upper end of the wage distribution – whereas the men who remain employed tend to be more evenly spread across that distribution – the increase in nominal wages among women is likely to be higher than that observed among men. Paradoxically, therefore, the gender pay gap as measured by comparing the average wages of men and women may have diminished in some countries during the COVID-19 crisis. However, this most likely reflects the concentration of job losses among low-paid women, and hence a stronger composition effect, rather than an improvement in the average wages of working women.

3.9. Changes in employment and wages across the wage distribution in the formal and informal economies

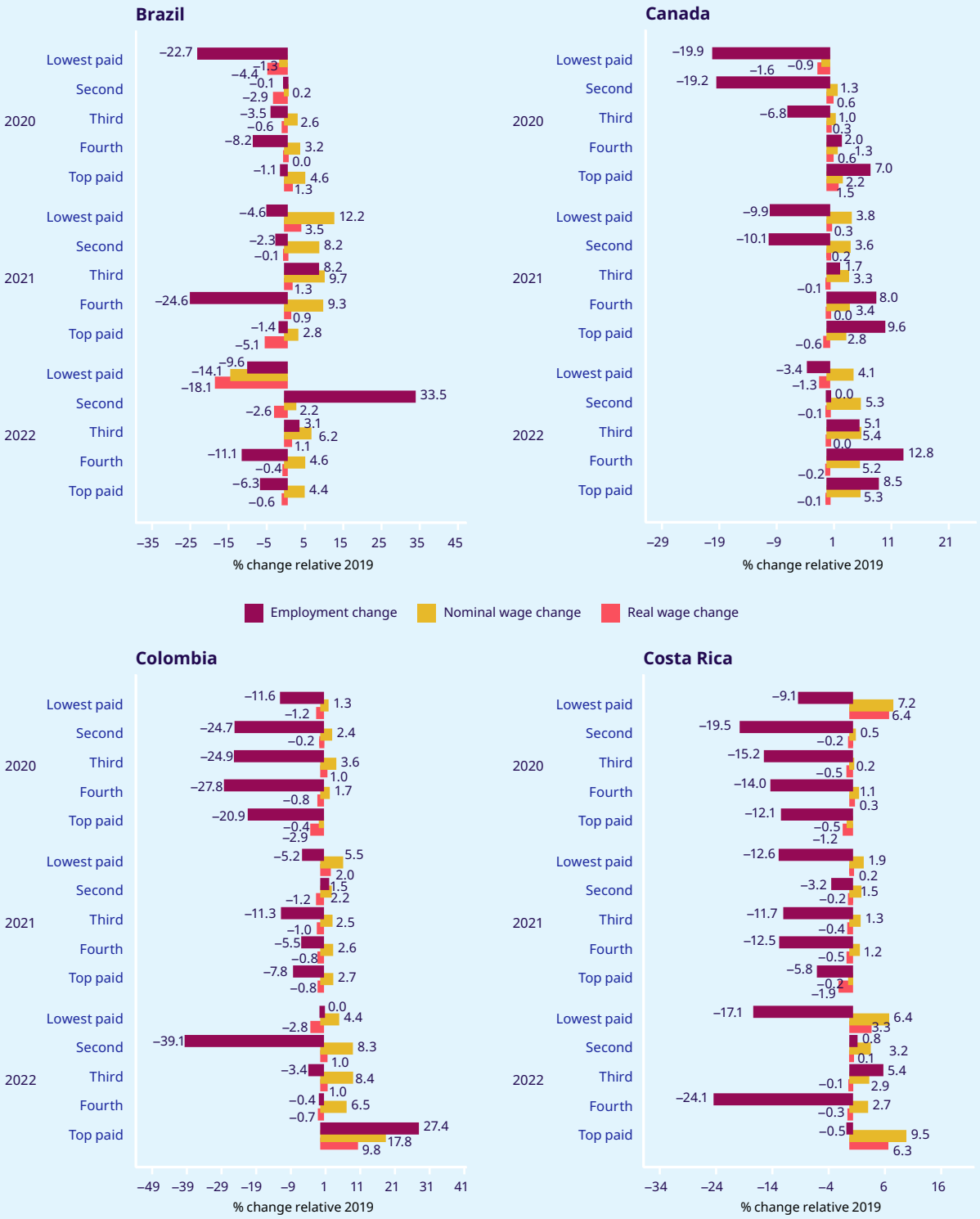
The decomposition of changes in the total wage bill in figures 3.13 and 3.14 provides insights into the impact of the two ongoing crises on all wage employees, and on the different effects that they have had – and continue to have – on women and men. However, neither figure sheds light on whether the crises have affected workers differently depending on their position along the wage distribution. By way of complementing the findings presented in section 3.8, this section therefore examines changes in employment and wage outcomes (nominal and real) across the wage distribution from 2020 to 2022 for a selection of countries, and for paid workers in both the formal and the informal economy. The analysis shows how the employment and wages of low-paid workers and workers in the informal economy have been disproportionately impacted by the ongoing crises, and in particular by the COVID-19 crisis.

Based on a selection of countries representing various regions of the world,[14] figure 3.15 shows the changes in employment, nominal wages and real wages over time and at five different positions on the wage distribution.[15] These five positions are identified as follows: in 2019, wage workers were ranked according to their monthly earnings and grouped into quintiles, that is, the bottom 20 per cent of wage employees, the top 20 per cent and three intermediary groups, each

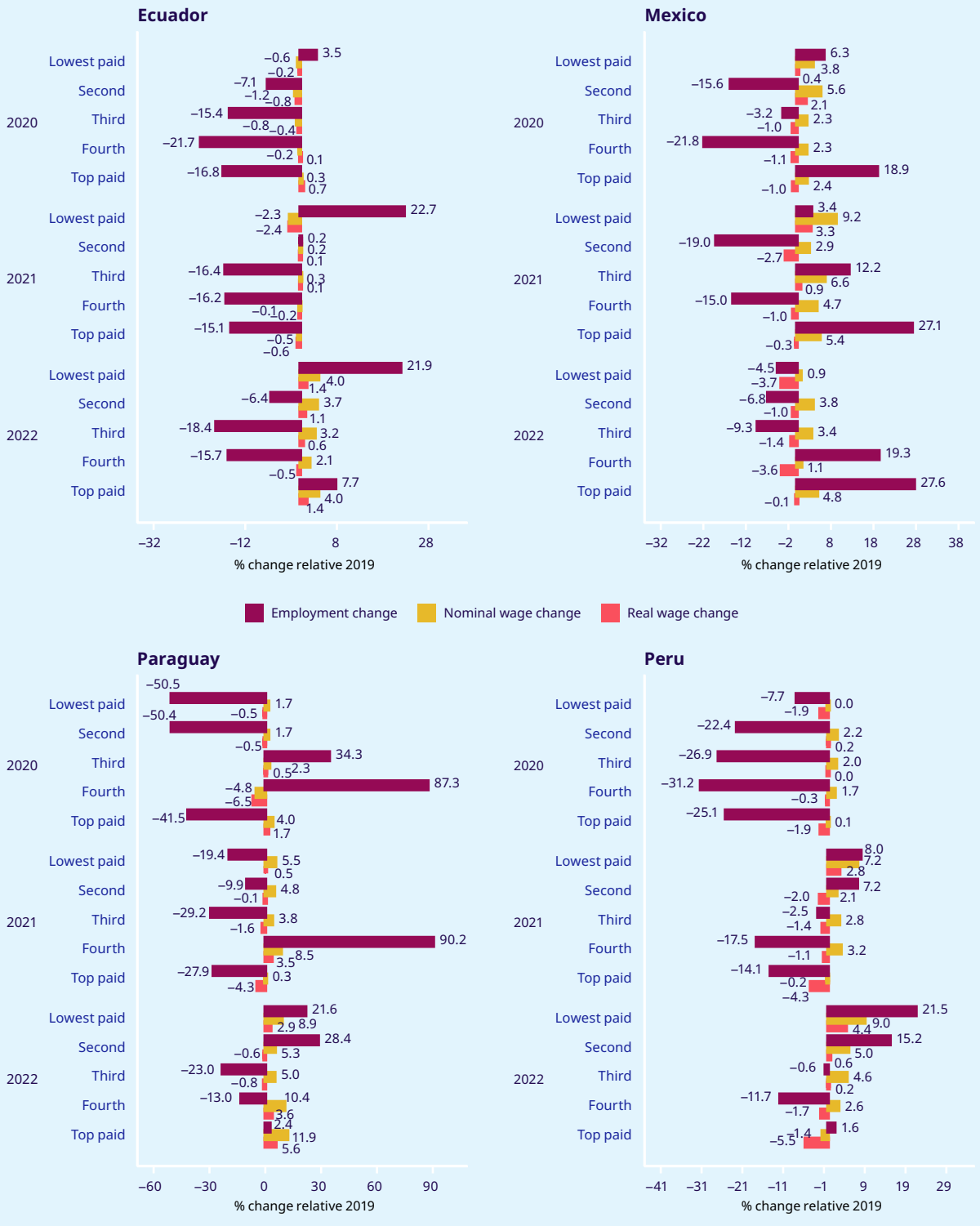
14 The selection includes only those countries with monthly or quarterly data extending to the first two quarters of 2022 at the time of writing. Since Indonesia, for example, regularly provides data for the first and third quarters of each year and the estimates in this section are based on annual aggregates, that country has been excluded from the sample.

15 The breakdown in this section should not be confused with the way in which the total wage bill was decomposed in section 3.8 (that is, in figures 3.13 and 3.14). In that section, the aim was to identify the contribution of employment changes, nominal wage changes and inflation to changes in the total wage bill. This was necessary to explain changes in the total wage bill over time, and also to explain why women or men may exhibit a higher (or lower) total wage bill when in fact they have lost more (or less) employment than the opposite sex. The estimates shown in figures 3.15 and 3.16 in the present section compare simple changes in employment, in nominal wages and in real wages independently over different periods – that is, without considering the interaction between the different components, which was the aim of decomposing the total wage bill. See Appendix III for a detailed explanation of the method used to decompose the total wage bill in figures 3.13 and 3.14, and of how this method differs from that used to obtain the simpler estimates in figures 3.15 and 3.16.

Figure 3.15. Changes in employment and in nominal and real wages, by position on the wage distribution, selected countries, 2020–22 (percentage)



▶ **Figure 3.15.** ***(cont'd)***



▶ Figure 3.15. ***(concl.)***

Note: The classification of wage employees into five groups is based on the wage distribution in 2019.

Source: ILO estimates. See Appendix I for the sources of survey data used in this report.

> The employment and wages of low-paid workers and workers in the informal economy have been disproportionately impacted by the ongoing crises.

also comprising 20 per cent. The threshold values defining the five groups in 2019 were used to subdivide the population of wage employees in subsequent years after converting the thresholds into real values using a given country's CPI.[16] Thus, whereas each of the five groups includes exactly 20 per cent of wage employees in 2019, the share of each group in subsequent years can vary depending on how the dynamics in the labour market, and in particular the ongoing crises, are impacting on the distribution of wage employment and workers' monthly earnings in subsequent years. Therefore, when reporting changes in employment and wages during 2020–22, instead of "quintiles", it is more appropriate to refer to the five groups using ordinal terms: the lowest-paid group, the second-lowest and so on until the highest-paid group.

Figure 3.15 shows that all five groups across the wage distribution in almost all countries suffered employment losses during 2020, the first year of the COVID-19 crisis. In 8 of 11 countries, the losses were greatest among the lowest-paid and second-lowest-paid groups. For example, in Brazil, the group at the bottom lost almost 23 per cent of wage employment relative to 2019, whereas employment losses in the higher-paid groups ranged from 3 to about 8 per cent. In Portugal, the employment loss of the lowest-paid group was 49 per cent, whereas employment in the second-lowest-paid group increased by 55 per cent in 2020. This could be because some workers in the third-lowest-paid group received lower earnings, which would have pushed them into the second-lowest-paid group, but also because of an increase in earnings above inflation, which would have pushed some of the lowest-paid into the next group. An interesting contrast between groups in 2020 may be observed in relation to nominal wage increases. In most countries, nominal wages increase – alongside a decline in employment – for earners in the second-lowest-paid and all higher-paid groups, but not among the lowest-paid group. This means that there is no composition effect among the lowest-paid. In fact, in 2020, in 7 of 11 countries those in the lowest-paid group received lower nominal (and real) wages relative to 2019.

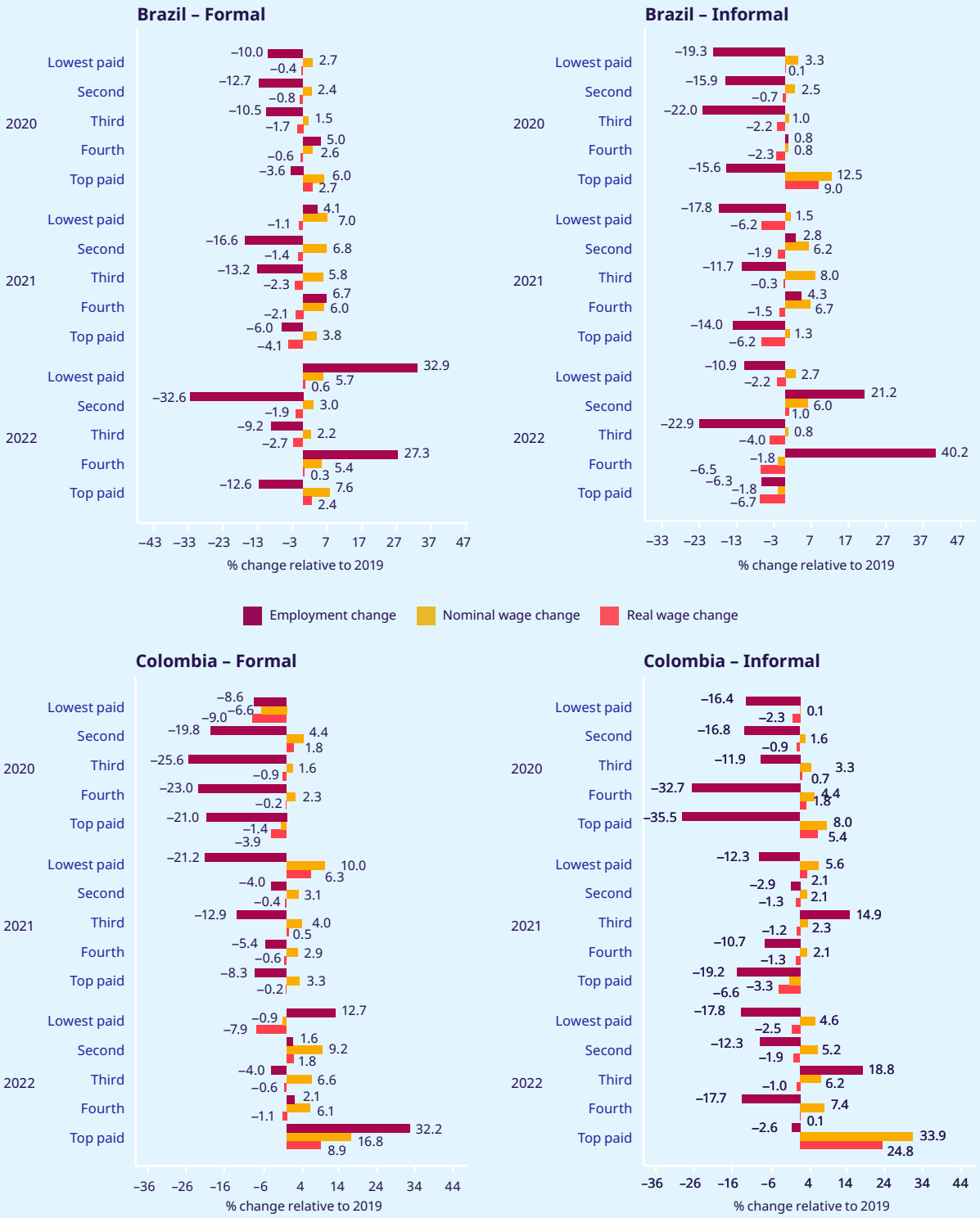
Turning to 2021 and 2022, employment in most countries recovers to levels similar to those seen in 2019. Nevertheless, in 7 of 11 countries, the employment level among the lowest-paid group in 2022 remains below that of 2019, while most other higher-paid wage groups have recovered to their pre-crisis levels. For example, in the United States, the lowest-paid and second-lowest-paid groups have shrunk in size by, respectively, 13.7 per cent and 7.6 per cent in 2022 relative to 2019. The lowest-paid group is also the one that generally has recovered the least in terms of nominal earnings. In Brazil and Portugal, the lowest-paid group receives nominal earnings in 2022 that are, respectively, 14.1 per cent and 2.7 per cent below the estimated average in 2019, whereas the highest-paid group receives nominal earnings that are, respectively, 4.4 per cent and 2.7 per cent higher than the averages in 2019. In most other countries, the lowest-paid have recovered nominal earnings, but at a lower rate than higher-paid groups. For example, in Colombia, Costa Rica and Mexico, nominal monthly earnings among the lowest-paid have increased by, respectively, 4.4 per cent, 6.4 per cent and 0.9 per cent, whereas among the highest-paid group they have increased by, respectively, 17.8 per cent, 9.5 per cent and 4.8 per cent. This means that, with inflation rates rising fast, the real wage increase at the bottom of the wage distribution lags behind that among top wage earners. For example, in Canada the lowest-paid have lost 1.3 per cent of the purchasing power of their earnings, whereas the nominal gains among top earners help them to (almost) keep up their purchasing power relative to 2019: they have experienced a real wage decline of just 0.1 per cent.

16 For example, let us assume that, in a hypothetical country, wage employees in the bottom quintile earned between 10 and 100 local currency units in 2019. The threshold values of 10 and 100 are then kept fixed in real terms for all subsequent years by using the CPI to estimate inflation-adjusted thresholds. If inflation in this hypothetical country increased by 2 per cent between 2019 and 2020, the threshold values delimiting the lowest-paid group in 2020 relative to 2019 would be set at 10.2 and 102 local currency units, respectively.

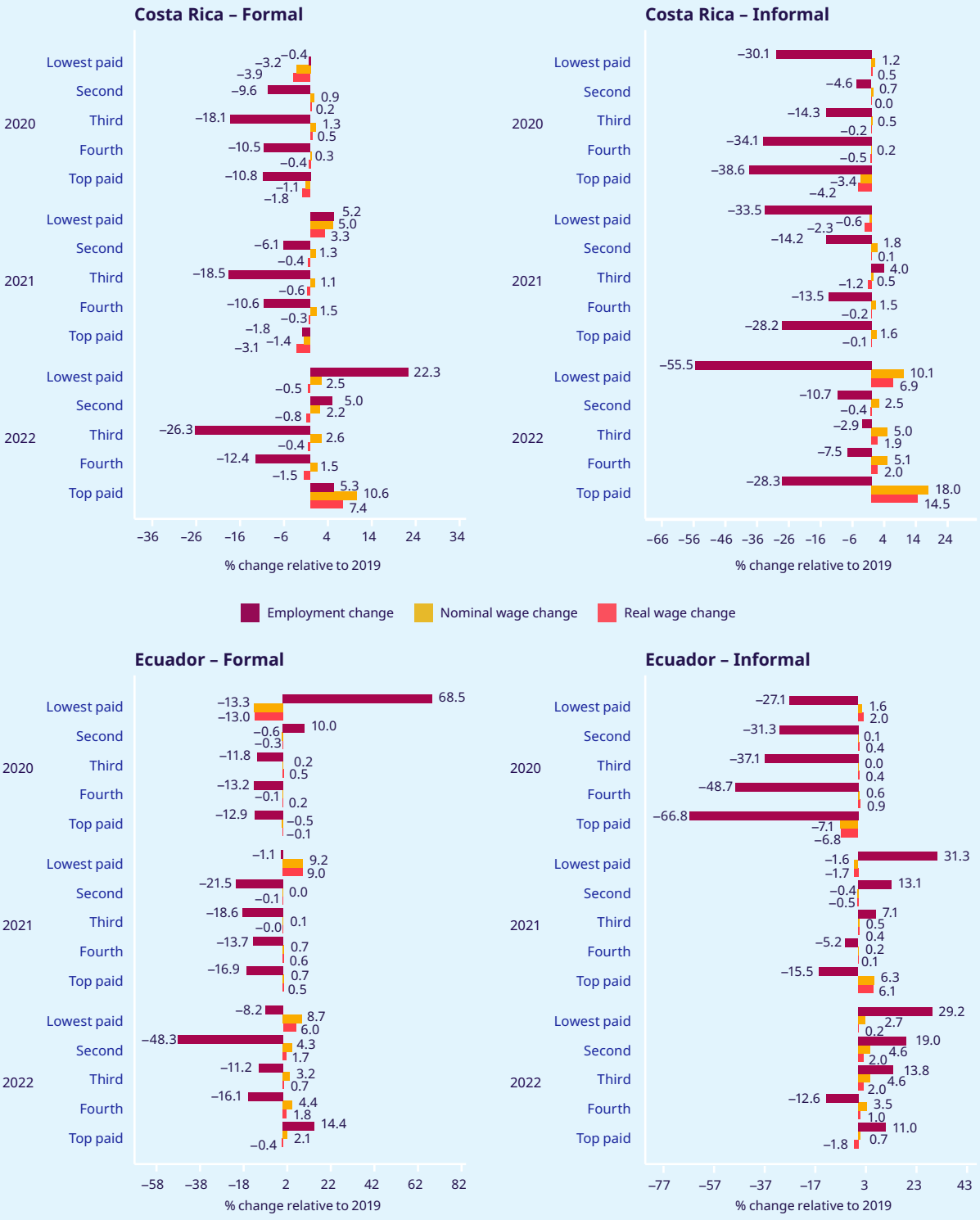
Low- and middle-income countries are often characterized by a high degree of informal employment, including informal wage employment. Were the losses of wage employees in the informal economy comparable to those of their formal counterparts? Did wage employees in the formal and informal economies recover at different speeds during 2021 and 2022? To answer these questions, figure 3.16 disaggregates wage employees by formal and informal employment. As can be seen there, in almost all countries the employment loss among wage employees in informal wage employment during 2020 was greater than that among their counterparts in formal employment. For example, in Brazil, the employment loss among the lowest-paid formal wage employees was 10 per cent, compared with 19 per cent among the lowest-paid informal employees. Similarly, in Colombia and Costa Rica, employment losses among the lowest-paid formal employees in 2020 were, respectively, 9 per cent and –0.4 per cent, whereas losses among the lowest-paid informal employees were, respectively, 16 per cent and 30 per cent.

With regard to employment recovery during 2021–22, the picture is mixed. In some countries, formal wage employment has recovered to a greater extent than informal employment (for example, Colombia and Viet Nam), but in others the opposite is true (for example, Ecuador). It is worth noting that during a crisis there can be shifts between formal and informal employment, with informal employment increasing at the expense of formal employment. Some studies suggest that in emerging market and developing economies the recovery of informal employment has been faster and stronger than that of formal employment, which would point to "scarring" of the labour market as a result of the COVID-19 crisis (ILO 2022b). This could be driving some of the patterns in figure 3.16. As regards earnings, the nominal wage increases observed in 2022 in each of the income groups among formal employees are almost always greater than those of the corresponding groups among informal employees. Among other things, this may reflect the reduced bargaining power of informal wage employees across the entire wage distribution in the aftermath of the COVID-19 crisis.

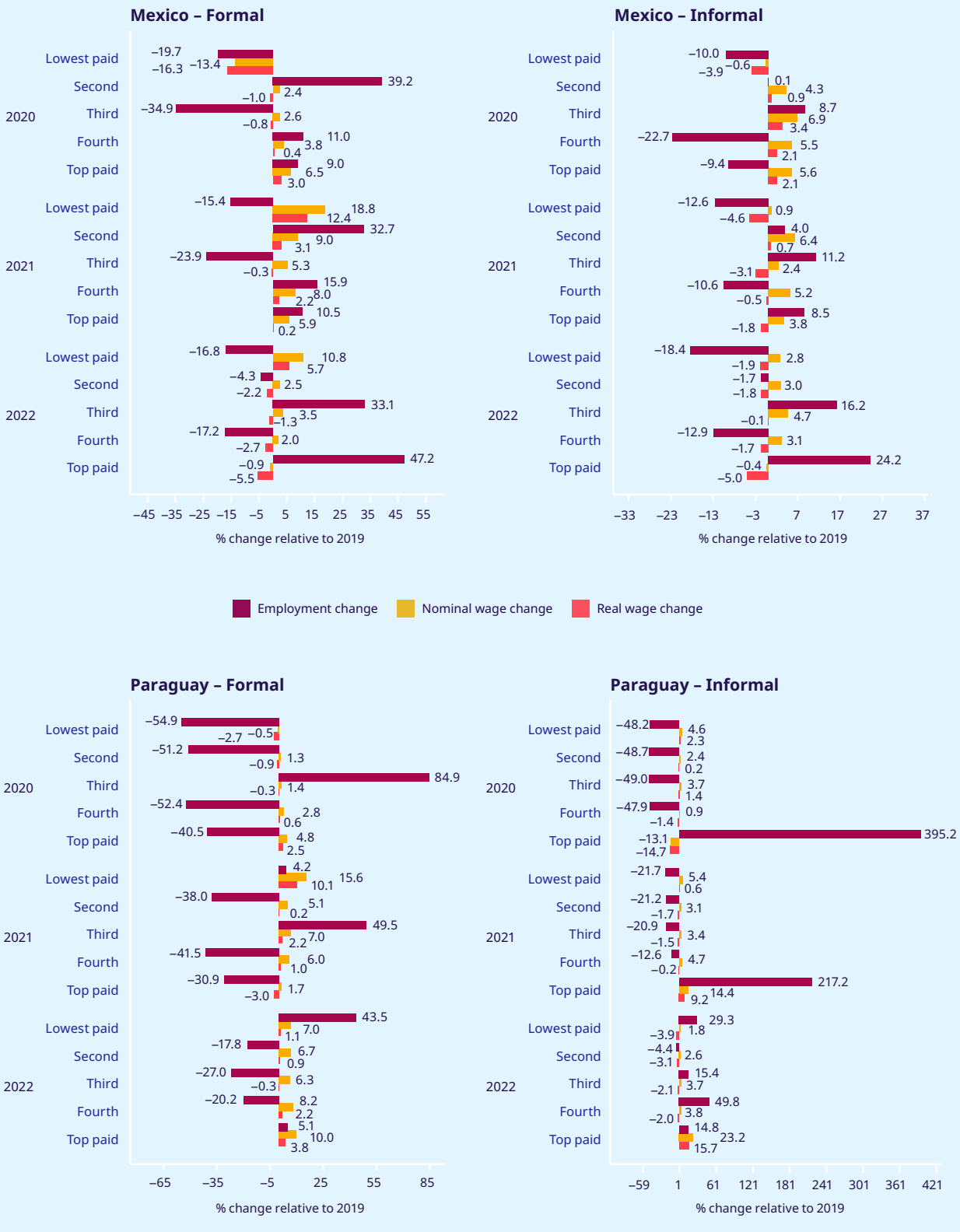
▶ Figure 3.16. Changes in employment and in nominal and real wages, by position on the wage distribution and by formal vs informal status, selected countries, 2020–22 (percentage)



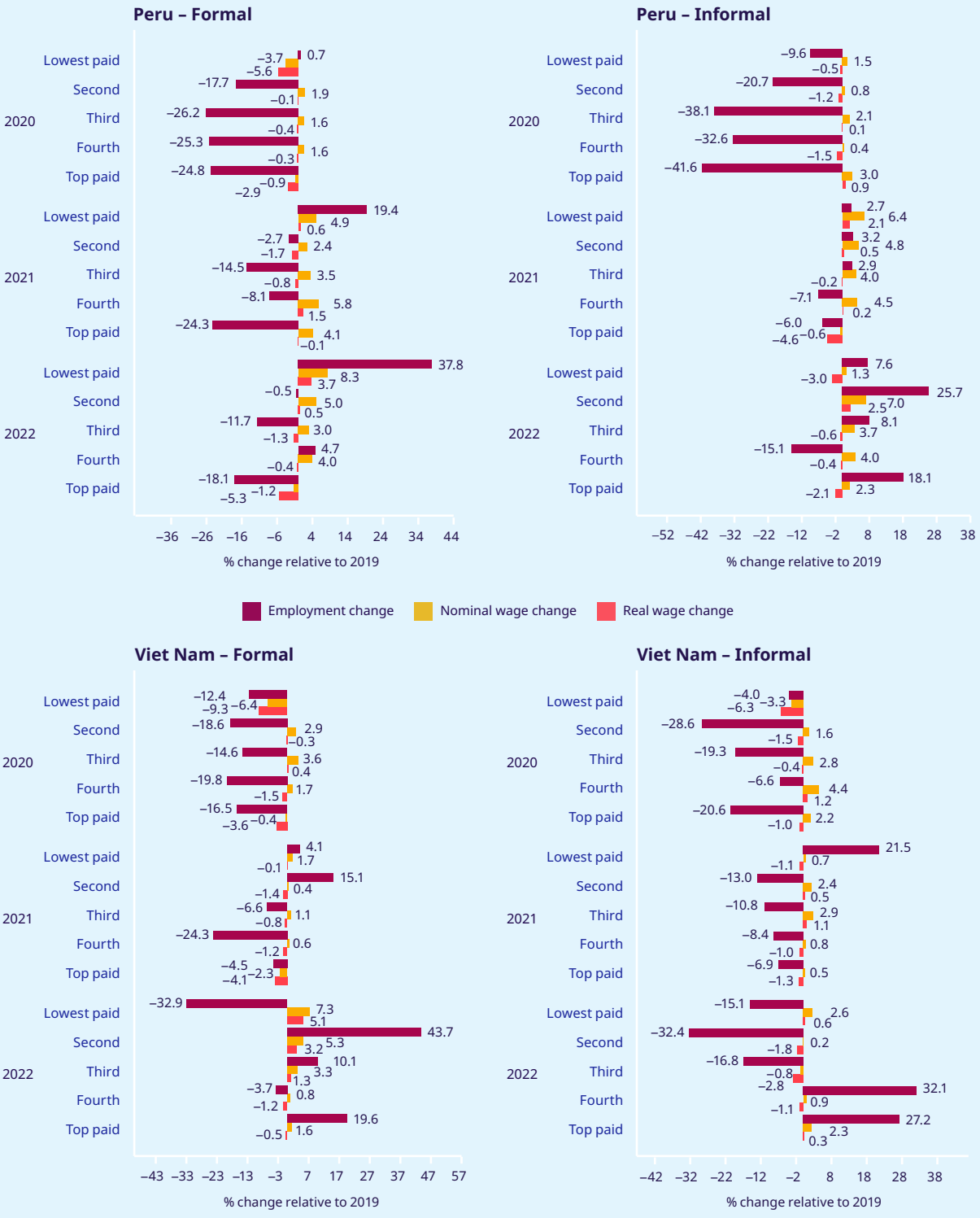
▶ **Figure 3.16.** ***(cont'd)***



▶ **Figure 3.16.** ***(cont'd)***



▶ Figure 3.16. ***(concl.)***



Note: The classification of wage employees into five groups is based on the wage distribution in 2019.

Source: ILO estimates. See Appendix I for the sources of survey data used in this report.

Panos Pictures/GMB Akash

4

Wage inequality in the context of the COVID-19 crisis and rising price inflation

4

Wage inequality in the context of the COVID-19 crisis and rising price inflation

Wage inequality, together with other labour income inequalities, is a major contributor to total income inequality between households and thus an important factor behind income inequality at the country level (ILO 2021b). It is therefore relevant for policymakers to consider, on the basis of empirical data, how wage inequality may have changed in recent times and the role played by the ongoing crises in shaping these changes.

This chapter starts by presenting wage inequality estimates based on data from before the COVID-19 pandemic (2019) and comparing these with estimates based on more recent data (2021 or 2022). It then seeks to decompose the changes in wage inequality so as to disentangle the contribution due to a change in the composition of wage employees from the contribution due to structural changes in the wage distribution. The last section presents estimates that show the change in the gender pay gap since the outbreak of the pandemic, emphasizing that the pay gap between women and men continues to be an important factor behind wage inequality.

> The pay gap between women and men continues to be an important factor behind wage inequality.

4.1. The COVID-19 crisis and wage inequality

Figure 4.1 compares estimates of wage inequality between 2019 and 2021 (or 2022) using six different inequality indicators for 22 countries for which data are available.[1] The use of several indicators (see box 4.1 for the definitions of these) makes it possible to construct a more detailed picture of changing wage inequality. While the Palma ratio and the Gini coefficient each compare the accumulation of earnings across the wage distribution, indicators based on the ratio of wages at two decile thresholds compare different locations of the wage distribution. In this report, the Palma ratio and the Gini coefficient are estimated using *monthly earnings*, whereas the decile ratios D9/D1, D9/D5, D8/D2 and D5/D1 are estimated using the distribution of *hourly wages*. For example, D9/D1 measures the ratio of the threshold of the top decile (D9) to that of the bottom decile (D1) in the distribution of hourly wages. Because monthly earnings take into account both hourly wages and hours worked, comparing changes in wage inequality as captured by indicators that use monthly earnings with changes captured by indicators that use hourly wages can shed light on how changes in working time shape wage inequality. Table 4.1 complements figure 4.1, which shows the change in wage inequality between periods, by providing a summary of the extent to which each of the six measures of wage inequality has changed in each of the 22 countries.[2]

As can be seen from figure 4.1 and table 4.1, there are similarities between estimates using the Palma ratio and the Gini coefficient. In 10 of the 22 countries, monthly wage inequality increased (visibly more in Colombia, Panama, Paraguay and Thailand), while in the remaining 12 countries wage inequality dropped (visibly more in the Plurinational State of Bolivia, the Dominican Republic, Peru and the United States). Colombia and Panama stand out as the two countries with the greatest increase in wage inequality between 2019 and 2021 (2022 in the case of Colombia). Peru is the country where wage inequality decreased the most between 2019 and 2022: the Palma ratio shows that in 2019 the top 10 per cent accumulated 100 per cent more in monthly earnings than the bottom 40 per cent, while in 2022 the gap dropped to 72 per cent. For most other countries the change in wage inequality in the three years is small. Table 4.1 shows that in 16 of the 22 countries the magnitude of the change in the Gini coefficient is less than 6 per cent, while in some of these countries (for example, Ecuador,

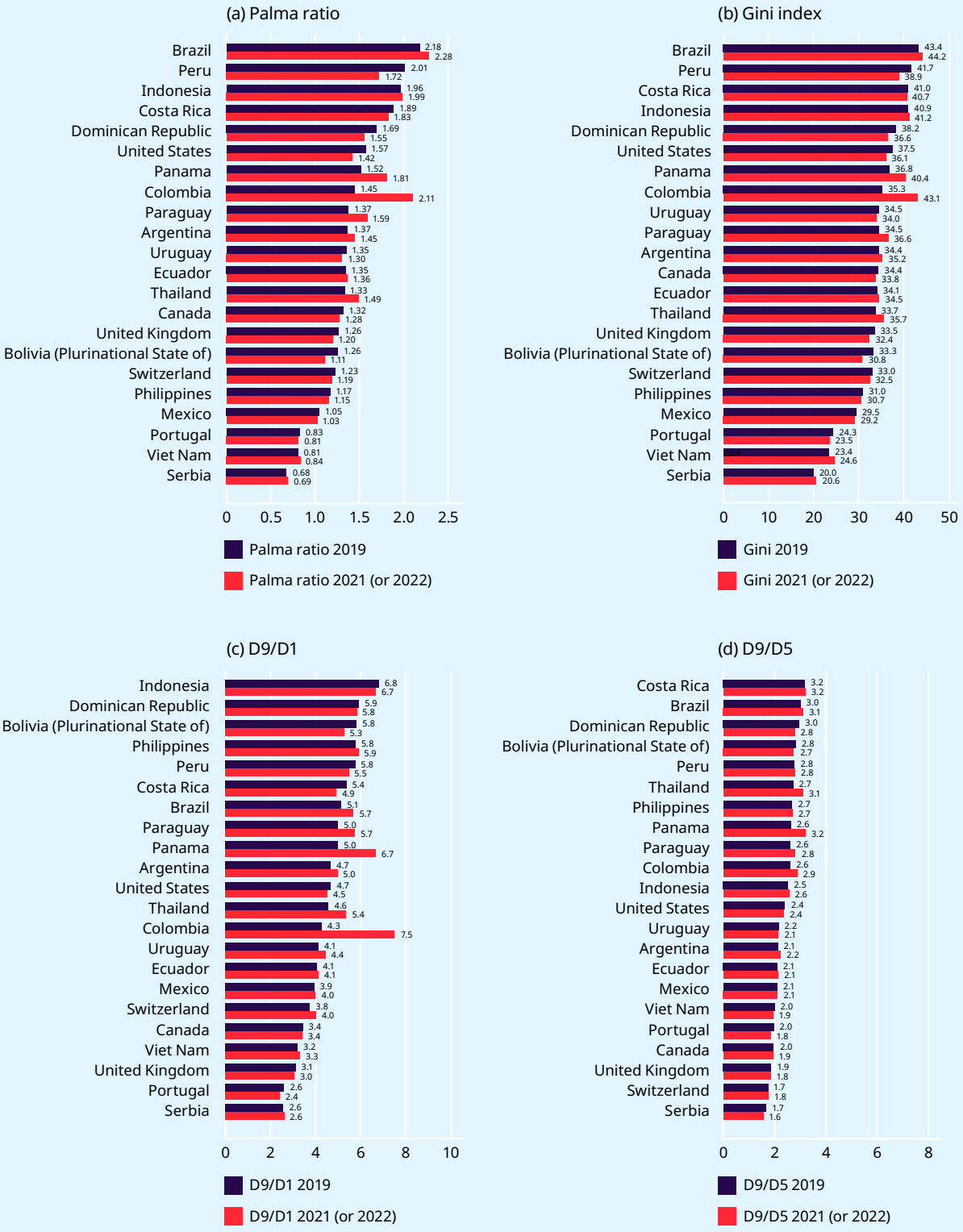
Box 4.1. Indicators of inequality

The Palma ratio is the ratio of the total wage bill accumulated by the top 10 per cent of wage employees to that accumulated by the bottom 40 per cent. The Gini coefficient summarizes the wage distribution among ranked wage employees: when the coefficient is zero, this implies perfect equality (after being ranked, wage employees subsequently accumulate proportionately the same amount of earnings), whereas a value of 1 implies perfect inequality (after being ranked, most wage employees subsequently accumulate almost nothing while one or a few people hoard all the wages earned in the population). The indicators based on threshold values of the distribution of (hourly) wages are simply the ratio between thresholds as defined. For example, D9/D1 is the ratio of the threshold value of the ninth decile of the distribution of hourly wages to that of the first; D8/D2 is the ratio of the threshold value of the eighth decile to that of the second; D9/D5 is the ratio of the threshold value of the ninth decile to the median; and D5/D1 is the ratio of the median to the threshold value of the first decile.

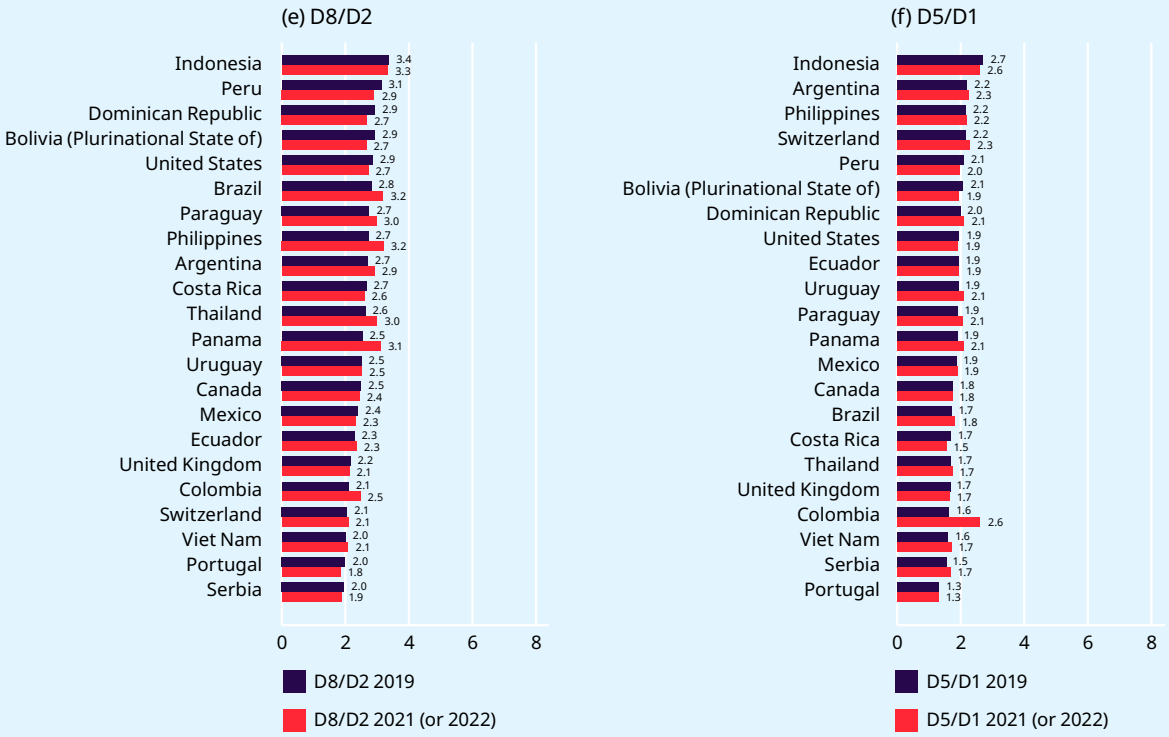
1 In countries with data up to 2021, measures of wage inequality compare estimates based on data from the third quarter of 2019 with estimates based on data from the third quarter of 2021. In countries with data up to 2022, measures of wage inequality compare estimates based on data from the latest available quarter of 2022 with estimates based on data from the corresponding quarter in 2019. See Appendix I for more details of the data sources.

2 Estimates are produced for each country separately. For all inequality indicators, the procedure begins by ranking wage employees according to the earnings variable that underlies the indicator: for the Palma ratio and the Gini coefficient the ranking is based on monthly earnings, whereas for indicators based on decile thresholds the ranking is based on hourly wages.

▶ Figure 4.1. Wage inequality in 2019 and 2021 (or 2022), selected countries



▶ Figure 4.1. ***(concl.)***



Note: (a) The Palma ratio is the ratio of national income shares of the top 10 per cent of households to the bottom 40 per cent; (b) the Gini index is the Gini coefficient (a measure of dispersion of income) expressed as a percentage, with lower values indicating a more equal distribution; (c) D9/D1 denotes the ratio of the income of the richest 10 per cent to that of the poorest 10 per cent; (d) D9/D5 denotes the ratio of the income of the richest 10 per cent to that of those at the median of the earnings distribution; (e) D8/D2 denotes the income of the richest 20 per cent to that of the poorest 20 per cent; (f) D5/D1 denotes the ratio of the income of those at the median of the earnings distribution to that of the poorest 10 per cent.

Source: ILO estimates. See Appendix I for the data sources.

Indonesia, Mexico and the Philippines) it is less than 1 per cent. Countries that exhibit a large increase in wage inequality could take a long time to achieve more equitable wage structures, hence the need for suitable policies (see Chapter 5). In countries where the Gini coefficient or the Palma ratio indicates a substantial drop in wage inequality, the estimates could well be masking composition effects – this will be explored further in section 4.2.

Estimates of wage inequality using decile ratios, (charts (c) to (f) in figure 4.1) are useful in detecting whether specific locations of the wage distribution are shaping the overall change in wage inequality. For example, in Colombia, the large increase in wage inequality seems to be driven by a distancing of the bottom decile from other deciles in the distribution of hourly wages. This can

> Changes in wage inequality can result from a mixture of changes in working time, changes in the earnings from time worked and changes affecting specific regions of the wage distribution.

▶ **Table 4.1. Percentage change in wage inequality, selected countries, 2019–21 or 2019–22**

	Change in the Palma ratio (%)	Change in the Gini index (%)	Change in the D9/D1 ratio (%)	Change in the D8/D2 ratio (%)	Change in the D5/D1 ratio (%)	Change in the D9/D5 ratio (%)
Peru	–14.54	–6.71	–5.03	–7.32	–5.32	0.31
Bolivia (Plurinational State of)	–11.72	–7.33	–9.34	–8.16	–6.72	–2.81
United States	–9.66	–3.91	–3.03	–5.02	–1.71	–1.34
Dominican Republic	–8.21	–4.43	–1.61	–8.68	4.94	–6.24
United Kingdom	–4.88	–3.30	–2.30	–1.61	–0.73	–1.58
Uruguay	–3.61	–1.49	7.19	–0.82	8.86	–1.54
Canada	–3.36	–1.85	–0.70	–1.95	–0.08	–0.62
Costa Rica	–2.99	–0.70	–8.56	–2.20	–8.73	0.19
Switzerland	–2.83	–1.58	7.12	2.04	6.51	0.58
Mexico	–2.10	–0.94	1.58	–3.33	1.05	0.53
Portugal	–1.86	–3.28	–7.54	–7.06	–0.40	–7.17
Philippines	–1.72	–1.15	2.35	17.87	1.44	0.90
Ecuador	0.92	0.97	1.54	2.79	1.06	0.47
Indonesia	1.31	0.73	–2.04	–0.90	–3.51	1.52
Serbia	2.27	2.74	1.62	–4.54	8.89	–6.68
Viet Nam	4.23	4.93	3.24	3.26	6.91	–3.43
Brazil	4.68	1.86	10.86	12.95	6.94	3.67
Argentina	5.83	2.32	6.59	7.94	2.27	4.22
Thailand	11.74	5.76	17.11	13.85	3.01	13.69
Paraguay	15.76	6.18	14.94	8.43	7.53	6.90
Panama	19.28	9.66	33.35	23.09	9.96	21.27
Colombia	45.46	22.31	76.15	17.36	59.71	10.30

Note: The countries have been organized by ascending order of change in wage inequality, as measured by the Palma ratio, between 2019 and 2021 (or 2022). A negative value indicates a decline in wage inequality between periods, while a positive value indicates an increase. For example, in Colombia, the country with the largest increase in the Palma ratio and therefore placed at the bottom of the table, the Palma ratio in 2019 was estimated at 1.45, meaning that the top 10 per cent of wage employees accumulated 45 per cent more total earnings than the bottom 40 per cent in the first quarter of 2019. In 2022 (first quarter) the Palma ratio had increased to 2.11, that is, the top 10 per cent accumulated 111 per cent more than the bottom 40 per cent. The increase between the estimate of 1.45 in 2019 and the estimate of 2.11 in 2022 is approximately 45.5 per cent.

Source: ILO estimates. See Appendix I for the data sources.

> Understanding the complex structure of changes in wage inequality is a prerequisite for designing policies to reduce such inequality.

be seen because the increases in the D9/D1 and D5/D1 ratios between 2019 and 2022 are strikingly large, whereas the D8/D2 and D9/D5 ratios have increased by much less. In contrast, in Panama, the D9/D1, D8/D2 and D9/D5 ratios have increased similarly, whereas the change in the D5/D1 ratio is much smaller. Therefore, in Panama, the country that shows the greatest increase in wage inequality together with Colombia, the increase between 2019 and 2022 seems to be driven by a widening of the

wage distribution at the top: the threshold value for the hourly wages of the top decile has increased.

In 4 of the 22 countries, wage inequality as measured by monthly earnings (the Palma ratio or the Gini coefficient) has changed in the opposite direction to that of the change in wage inequality as estimated using ratios between pairs of deciles at their thresholds in the distribution of hourly wages. In Mexico, the Philippines and Switzerland the four decile ratios suggest that wage inequality has increased across the distribution, since for all three countries the changes in the ratios between 2019 and 2021 (or 2022) are positive. However, in all three countries the Palma ratio and the Gini coefficient are negative. This could indicate that despite increasing inequality in hourly wages, the number of hours worked has changed – increasing on average among lower earners and/or decreasing on average among higher earners – thereby leading to a drop in overall inequality in monthly earnings. In Indonesia the opposite is true: hourly wage inequality has declined across the wage distribution, but changes in the pattern of hours worked among top and bottom earners have led to increasing inequality in monthly earnings.

For all other countries in figure 4.1 and table 4.1 there is consistency between the six estimates of wage inequality: countries exhibiting an increase or a decrease in the Palma ratio and the Gini coefficient between 2019 and 2021 (or 2022) also exhibit an increase or a decrease, respectively, in the ratios of the various pairs of decile thresholds. However, analysis of these indicators shows that changes in wage inequality can result from a mixture of changes in working time, changes in the earnings from time worked and changes affecting specific regions of the wage distribution, particularly the extremes. Understanding the complex structure of changes in wage inequality is a prerequisite for designing policies to reduce such inequality.

4.2. Uncovering the factors behind changes in wage inequality

During labour market shocks, wage inequality can change significantly because of composition effects associated with wage employment. For example, as a result of the COVID-19 crisis, many countries experienced massive job losses among the low-paid, particularly in the second and third quarters of 2020. These losses, clearly a negative labour market outcome by any measure, would nevertheless have compressed the wage distribution at the bottom, thus reducing wage inequality at that time. In addition to composition effects, structural shifts can also change wage inequality. For example, the implementation of a minimum wage can compress the wage distribution from below, thereby reducing wage inequality without changing the composition of wage employees (unless the minimum wage has a negative employment effect). Given that composition effects are often transitory, while structural changes tend to be more persistent, disentangling the factors that lie behind an overall change in wage inequality can be a useful tool for policymakers.

The composition of wage employees, and how it changes over time, is a complex outcome that reflects their multiple characteristics and circumstances. During the COVID-19 crisis, the composition of wage employment was observed to have changed in relation to three of these characteristics: sex, economic sector and occupational category (ILO 2020c). Thus, the shares of female (and male) wage employees changed during and in the aftermath of the COVID-19-related restrictions, probably because women tend to be over-represented in low-paid jobs involving face-to-face work. (As already discussed in section 3.8, women's share of employment losses was greater than that of men in several countries.) Similarly, some economic sectors (particularly the service sector, manufacturing and construction) and occupational categories (notably lower-skilled and unskilled occupations) were found

During labour market shocks, wage inequality can change significantly because of composition effects associated with wage employment.

to be at greater risk of employment loss than others during the crisis (ILO 2020c). Building on the above observations, this section decomposes the change in wage inequality by examining the extent to which changes related to each of these three characteristics of wage employees contributed to the observed change in wage inequality between 2019 and 2021 (or 2022). The method is based on DiNardo, Fortin and Lemieux (1996) and on Daly and Valletta (2006); Appendix V provides further details.

Figure 4.2 presents a decomposition of changing wage inequality that considers changes in the Palma ratio, the D9/D1 ratio and the D5/D1 ratio.[3] In each of the three charts, and for each country, the differently coloured segments of each bar, which may indicate negative or positive values, add up to the total percentage change in wage inequality between 2019 and 2021 (or 2022). These totals correspond to the values given in table 4.1. Whereas the contributions due to the three worker characteristics mentioned above are shown separately, the contribution to changing wage inequality resulting from compositional changes in "other factors" is shown in a single colour segment.[4] When a segment appears to the right of zero, it means that changes in the composition of the corresponding factor between 2019 and 2021 (or 2022) have contributed to an increase in wage inequality over that period; when a segment appears to the left of zero, the change in the corresponding factor has contributed to a reduction in wage inequality over that period. Structural change can also contribute to changes in wage inequality: as with each of the compositional factors, it can either increase or decrease inequality and so the relevant colour segment in each bar will appear either to the right or the left of zero, as the case may be. In all three charts in figure 4.2, the results of the decomposition for Colombia are displayed separately. This is to prevent the scale required to show the very large changes estimated for Colombia from blurring the presentation of the other countries.

> In addition to composition effects, structural shifts – such as the implementation of a minimum wage – can also change wage inequality.

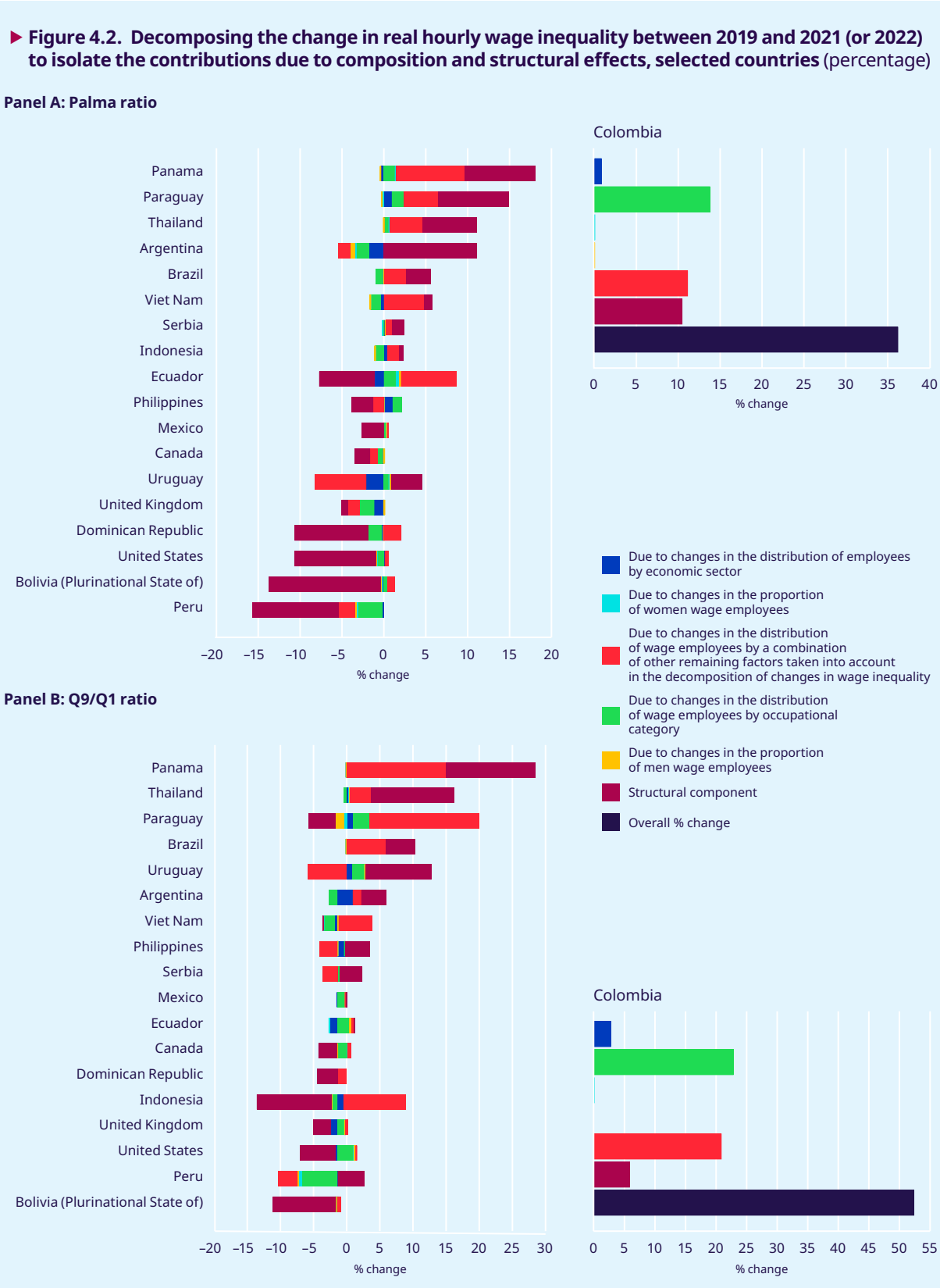
The three charts in figure 4.2 show similarities in terms of how the various factors may have contributed to the compositional component of the total change in wage inequality. The variables that were considered separately (sex, economic sector and occupational category) do not appear to have had a decisive influence on the total change in wage inequality, especially compared with the role of the mixed "other factors". In particular, changes in the relative share of women and men in the population of wage employees do not seem to play an important role. A detailed inspection of the microdata reveals that, among the 19 countries covered by figure 4.2, the shares of female and male wage employees in 2021 (or 2022) are almost identical to those observed in 2019. Some countries exhibit a slight increase in the share of men, but it is less than 2 per cent in all cases. It seems, therefore, that women gradually returned to their pre-pandemic employment levels. This means that when wage inequality is measured in 2021 (2022), relative to 2019, the gender composition of the workforce does not emerge as a relevant factor when it comes to explaining observed changes in wage inequality.

> Disentangling the factors that lie behind an overall change in wage inequality can be a useful tool for policymakers.

3 This decomposition method relies on the estimation of quantiles from the natural logarithmic (Napierian) distribution. In practice, this is identical to estimating the upper threshold of a decile from the (appropriately log transformed) distribution. Therefore, to be consistent with other sections in the chapter, although it would be equally valid to define the change in the ratios as "change in Q9/Q1" – where "Q" would stand for "quantile" – sections 4.2 and 4.3 use the terminology D9/D1 (or D5/D1) in the figures and in the text to refer to quantiles. However, Appendix V relies on the more classical use of the term "Q" to explain the decomposition of changes in wage inequality.

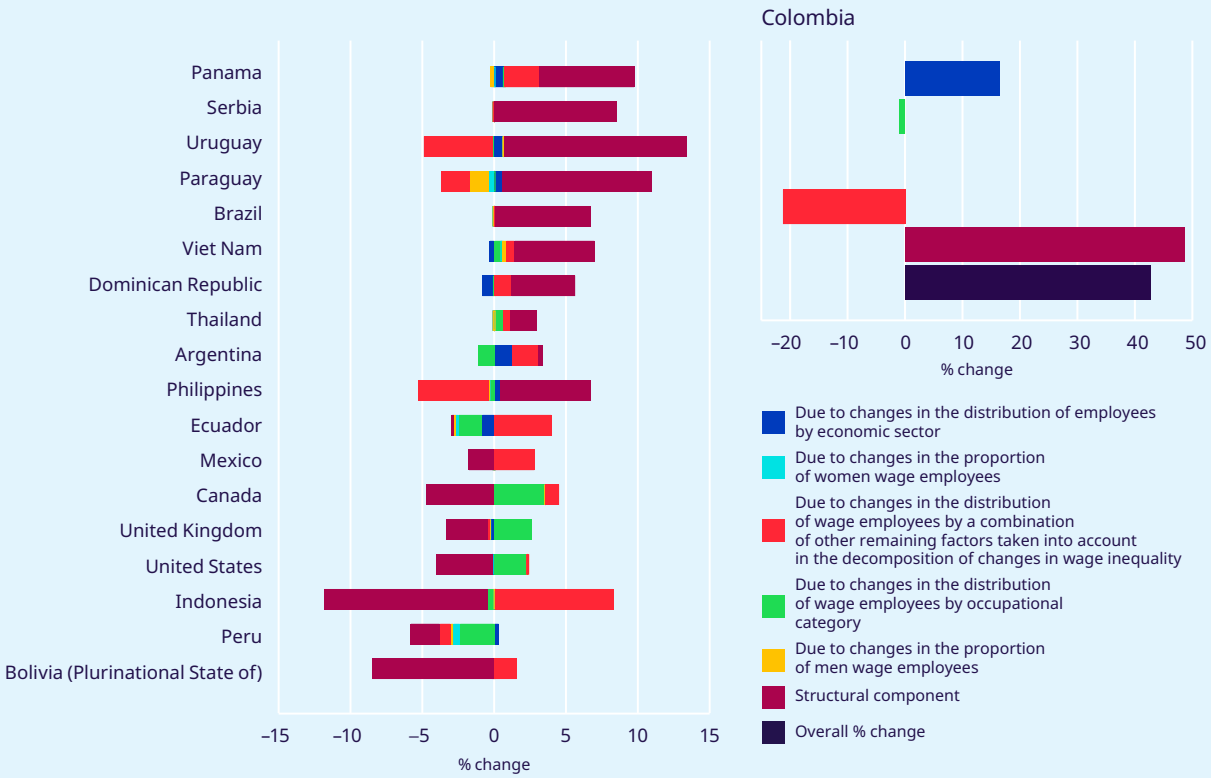
4 These "other factors" may include age, level of educational attainment, migration status, marital/parental status, number of children/adults/working adults in the household, geographical location, contractual arrangements (permanent versus temporary), institutional sector (public versus private), hours worked, size of the enterprise, and formal versus informal status in employment.

▶ Figure 4.2. Decomposing the change in real hourly wage inequality between 2019 and 2021 (or 2022) to isolate the contributions due to composition and structural effects, selected countries (percentage)



▶ **Figure 4.2.** ***(concl.)***

Panel C: Q5/Q1 ratio



Note: The lengths of the various segments (positive and negative) in the bar for each country add up to give the total percentage change in wage inequality, as measured by (a) the Palma ratio; (b) the D9/D1 ratio; and (c) the D5/D1 ratio, between 2019 and 2021 (or 2022). Countries have been arranged in descending order of the overall change in wage inequality. The total changes are almost identical to those presented in table 4.1 for the corresponding indicators. Whereas in table 4.1 the change was estimated as a simple percentage change in the value of the indicator, the lengths of the colour segments for each country in these charts represent logarithmic changes because of the decomposition method used (see Appendix V for more details).

Source: ILO estimates.

In comparison to gender composition, changes in the relative shares of wage employees by economic sector and occupational category seem to be slightly more relevant as drivers of changes in wage inequality. For example, in Argentina, the change in the relative share of wage employees by economic sector increased wage inequality by 2.4 per cent when measured using the D9/D1 ratio, with the overall increase in wage inequality during the relevant period estimated at 6.6 per cent. This means that had the relative share of wage employees by economic sector remained as in 2019 at the extreme deciles of the wage distribution, the D9/D1 ratio would have increased by 4.1 per cent, rather than by 6.6 per cent (all other things being equal). When the Palma ratio is used, the factor "economic sector" contributes negatively to changing wage inequality in Argentina. Thus, the relative shares, by economic sector, of the top 10 per cent and the bottom 40 per cent of earners changed between 2019 and 2021 in such a way that inequality as measured by the Palma ratio decreased by 1.8 per cent. Apart from Argentina – and possibly Uruguay as well – the factor "economic sector" does not seem to play a significant role in driving changes in inequality among the countries studied. Compared

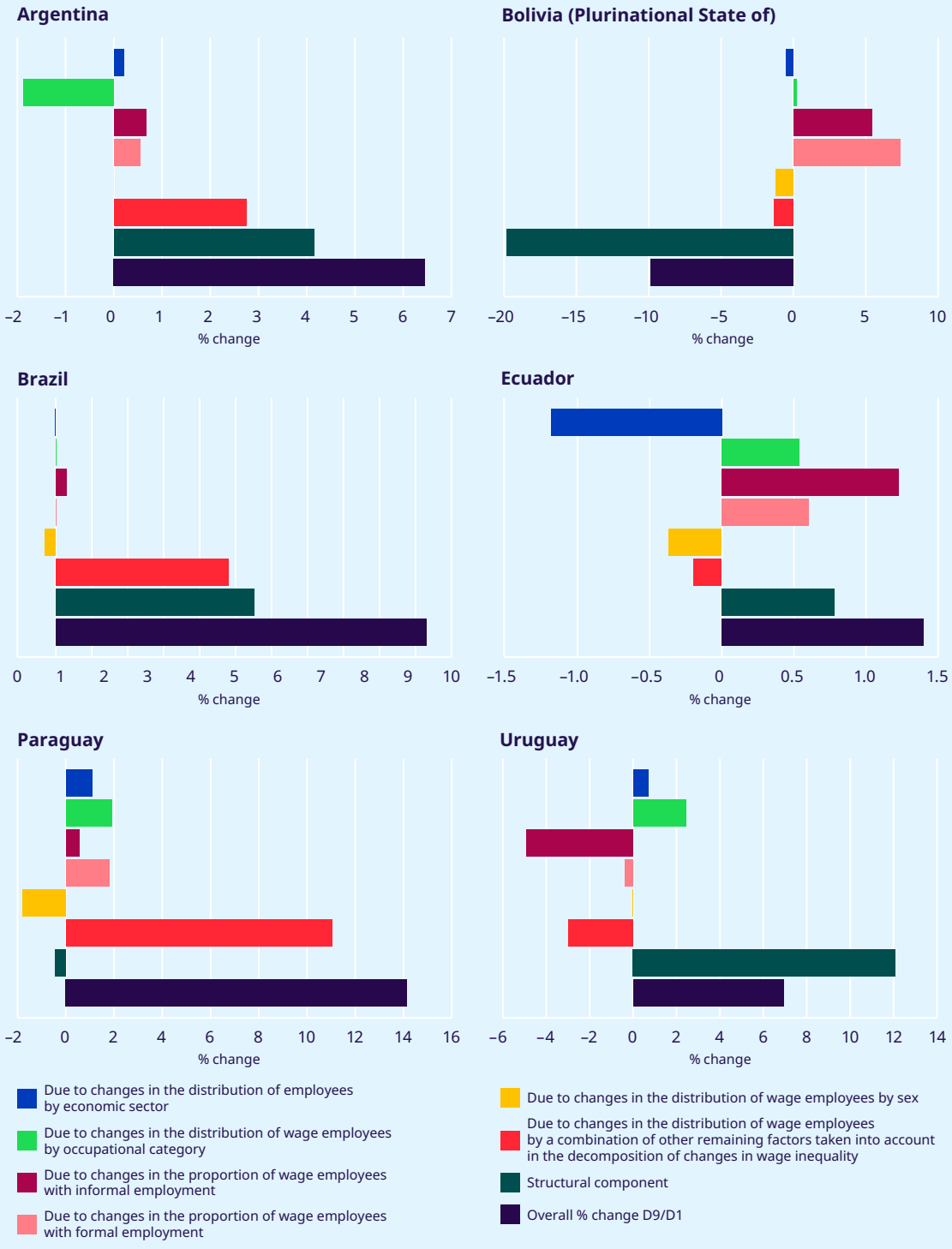
with gender composition or economic sector, a change in the relative shares of wage employees by occupational category appears to be a more relevant contributor to changes in wage inequality. Looking at the Palma ratio, changes in the relative shares of the various occupational categories contributed to a noticeable increase in wage inequality in Colombia (14 per cent), Ecuador (1.5 per cent), Panama (1.4 per cent) and Paraguay (1.4 per cent), and to a noticeable drop in wage inequality in Argentina (–1.4 per cent), the Dominican Republic (–1.6 per cent), Indonesia (–1.1 per cent), Peru (–2.9 per cent), the United Kingdom (–1.8 per cent) and Viet Nam (–1.2 per cent).

In general, the charts in figure 4.2 show that despite the compositional changes in employment during the COVID-19 crisis in terms of occupations, economic sectors and the relative shares of female and male employees, at present, as the effect of the crisis on labour markets begins to fade, the composition effect behind changes in wage inequality is also diminishing. This finding is consistent with the transitory nature of composition effects during labour market shocks. In a few countries, the "other factors" group, which includes education, age and formality status, does seem to be a stronger determinant of changing wage inequality – and in most cases, changes in the composition of this mixed set of factors appear to have contributed to an increase in wage inequality. However, what is far more striking in figure 4.2 is that changes in wage inequality between 2019 and 2021 (or 2022) appear to be strongly driven by changes in the wage structure. Once compositional effects vanish altogether, structural changes are likely to continue shaping the wage distribution in the future. In some of the countries studied (for example, Argentina, Colombia, Panama, Paraguay and Thailand), this implies large increases in wage inequality.

> In most cases a change in the relative shares of formal and informal employment between 2019 and 2021 (or 2022) was associated with an increase in wage inequality.

Earlier in the report (see section 2.4) it was pointed out that as employment gradually recovers to pre-pandemic levels, in some countries – particularly those with large numbers of informal workers – informal employment is increasing at a faster rate than formal employment. Figure 4.3 is based on a similar decomposition exercise to that in figure 4.2, but it seeks instead to identify how changes in the relative shares of formal and informal employment influenced changes in wage inequality between 2019 and 2021 (or 2022). As can be seen, in most cases a change in the relative shares of formal and informal employment was associated with an increase in wage inequality. In Ecuador and Paraguay, where informality among wage employees rose by 7 per cent and 4 per cent, respectively, the increase in informal wage employment and concomitant decrease in formal employment contributed to an increase in wage inequality. In Uruguay, where the microdata show a 4 per cent decrease in informal wage employment (and a corresponding increase in formal employment), there was compression at the bottom of the wage distribution, reflecting a reduction in wage inequality. The findings from figure 4.3 serve to highlight the need for formalization of the informal economy.

Figure 4.3. Decomposing the change in real hourly wage inequality (D9/D1 ratio) between 2019 and 2021 (or 2022) to isolate the impact of changes in formal and informal employment, selected countries (percentage)



Source: ILO estimates.

4.3. The COVID-19 crisis and the gender pay gap

Did the COVID-19 health crisis contribute to a widening of the gender pay gap? Figure 4.4 presents estimates of the mean and median factor-weighted gender pay gaps between women and men for both hourly wages and monthly earnings. Factor-weighted gender pay gaps were first used in the *Global Wage Report 2018/19* (ILO 2018). This method is an alternative to the traditional use of mean and median "raw" gender pay gaps, and eliminates potential bias due to the unequal clustering of women and men at different locations of the wage distribution (see box 4.2 for more details). Although this section relies on factor-weighted gender pay gaps to compare pay differentials between women and men, figure 4.5 complements the analysis by presenting the traditional raw mean and median gender pay gaps based on both hourly wages and monthly earnings.

Panels A and B in figure 4.4 present estimates of the factor-weighted gender pay gap for up to 22 countries for which comparable data for the period from 2019 to 2021 (or 2022) are available. When the factor-weighted method is used, as opposed to the traditional method of raw pay gaps underlying figure 4.5, all estimates of the hourly or monthly (mean or median) gender pay gaps are positive. This illustrates how, in many instances, use of the raw mean or median can give a misleading summary of the wage distribution for the purpose of comparing the earnings of women and men. Instead, the use of weighted averages of gender pay gaps between subgroups of women and men with similar labour market characteristics allows one to avoid underestimating or overestimating the pay gap in the population as a whole (see box 4.2). Thus, although figure 4.5 is included in this section for the sake of completeness, the analysis is centred on figure 4.4, which shows estimates of the factor-weighted gender pay gap.

The estimates presented in the *Global Wage Report 2018/19* indicated a global average gender pay gap of about 20 per cent, based on data from 80 countries (ILO 2018). This edition examines the evolution of gender pay gaps in a more limited sample of countries, finding very little change between 2019 and 2021–22. The charts in figure 4.4 show that the gender pay gap is positive in all the countries studied and has remained so over time.[5] Across these 22 countries, the factor-weighted mean gender pay gap using hourly wages in 2019 ranged from about 2 per cent (Paraguay) to about 22 per cent (Plurinational State of Bolivia), while in 2021 it ranged from 2 per cent (Costa Rica) to about 24 per cent (Indonesia). Thus, whereas in 2019 the simple average of the mean gender pay gap using hourly wages across the 22 countries was 12.8 per cent, in 2021–22 it was 12.3 per cent. Similar estimates are found for the factor-weighted median gender pay gap, with the simple average in 2019 and 2021–22 standing at 11.9 per cent and 11.7 per cent, respectively. The estimates based on monthly earnings in figure 4.4 are a few percentage points higher than those based on hourly wages: whereas in 2019 the simple average using factor-weighted mean monthly earnings was 17 per cent, the average using median values was 16 per cent. Overall, figure 4.4 suggests that the gender pay gap continues to persist in labour markets around the world, with women paid, on average, less than men.

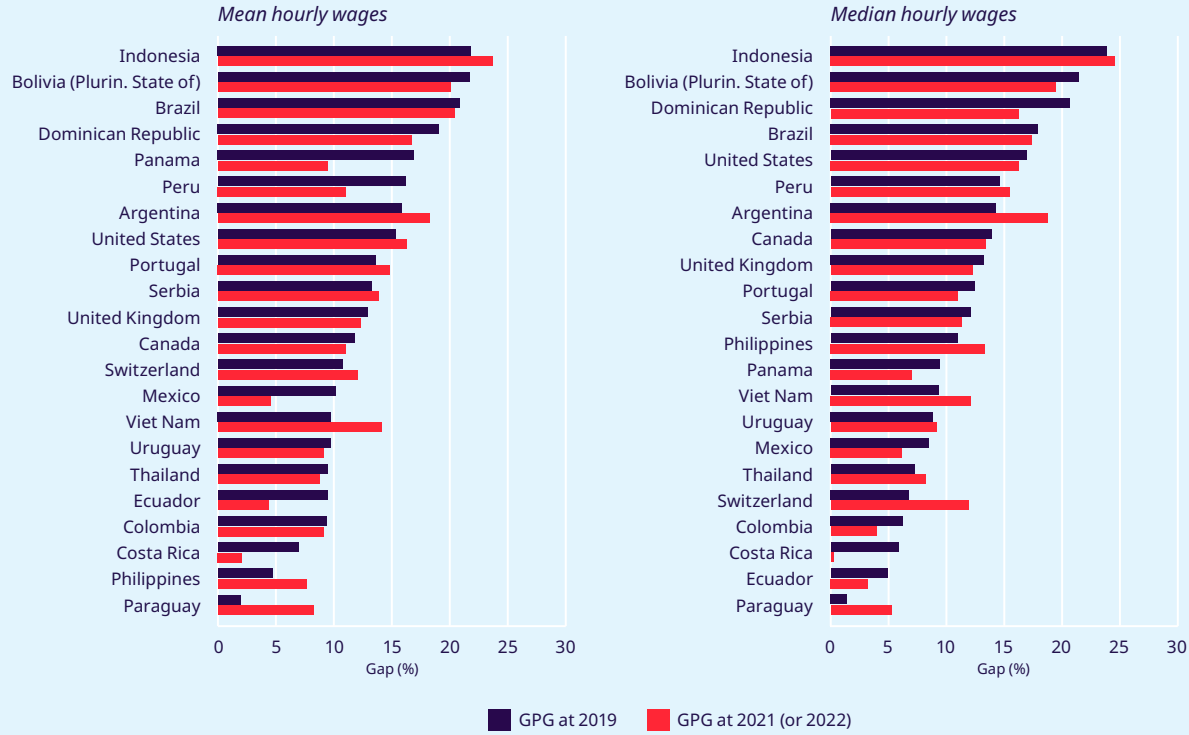
A more detailed look at figure 4.4, panel A – complemented by table 4.2 – reveals that between 2019 and 2021 (or 2022) the gender pay gap based on factor-weighted mean hourly wages increased in 9 of the 22 countries, with the increases ranging from about 0.6 percentage points (for example, in Serbia) to as much as 6.3 percentage points (Paraguay). Among the 13 countries where the

> The gender pay gap continues to persist in labour markets around the world, with women paid, on average, less than men.

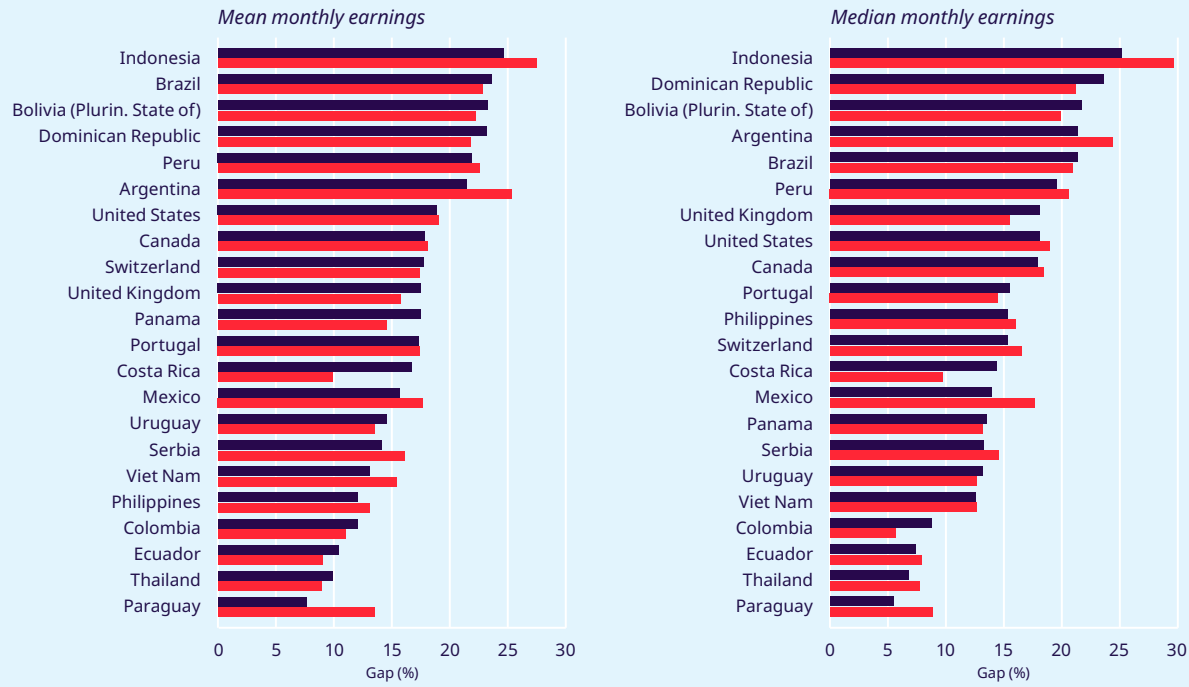
5 From a country-by-country comparison between panels A and B in figure 4.4 it can be seen that the pay gap estimated using monthly earnings is greater than that based on hourly wages (either mean or median). This is because the use of monthly earnings to estimate pay differentials between women and men takes into account both the gap in hourly wages and the gap in hours worked per month.

Figure 4.4. Changes in factor-weighted gender pay gaps between 2019 and 2021 (or 2022), selected countries (percentage)

Panel A. Based on hourly wages



Panel B. Based on monthly earnings



GPG = gender pay gap.

Note: Colombia and Mexico are not included in panel A because the data for these countries from 2022 do not allow wage employees to be grouped as required in the factor-weighted method.

Source: ILO estimates.

▶ **Table 4.2. Change in various measures of the factor-weighted gender pay gap between 2019 and 2021 (or 2022), selected countries** (percentage points)

	Change in mean hourly wage gap	Change in median hourly wage gap	Change in mean monthly earnings gap	Change in median monthly earnings gap
Panama	–7.49	–2.39	–2.88	–0.34
Mexico	–5.58	–2.34	2.00	3.66
Peru	–5.12	0.88	0.66	1.09
Ecuador	–5.06	–1.70	–1.37	0.49
Costa Rica	–4.85	–5.62	–6.83	–4.68
Dominican Republic	–2.40	–4.45	–1.41	–2.45
Bolivia (Plurinational State of)	–1.59	–1.99	–1.01	–1.78
Canada	–0.80	–0.53	0.24	0.48
Thailand	–0.67	0.96	–0.92	0.93
Uruguay	–0.56	0.32	–1.02	–0.51
United Kingdom	–0.54	–0.99	–1.79	–2.65
Brazil	–0.41	–0.51	–0.79	–0.39
Colombia	–0.26	–2.30	–1.05	–3.08
Serbia	0.61	–0.75	1.98	1.27
United States	0.97	–0.65	0.11	0.86
Portugal	1.24	–1.40	0.09	–1.03
Switzerland	1.31	5.15	–0.33	1.23
Indonesia	1.85	0.69	2.81	4.54
Argentina	2.37	4.53	3.84	3.00
Philippines	2.91	2.35	1.03	0.67
Viet Nam	4.39	2.79	2.34	0.07
Paraguay	6.28	3.85	5.92	3.35

Note: The factor-weighted gender pay gap is calculated by clustering women and men into groups based on educational attainment, age, full-time versus part-time employment, and public versus private sector employment. For Paraguay, the Philippines and Uruguay, data related to educational attainment are not comparable between different years, and occupational sectors have been used instead to cluster women and men into homogenous groups. Colombia and Mexico had, respectively, 4 and 6 clusters (out of 64 possible clusters) in which a single person dominated the resulting pay gap. To avoid large variations, these clusters were excluded from the factor-weighted computation for both years. See box 4.2 for more details of how factor-weighted gender pay gaps are estimated.

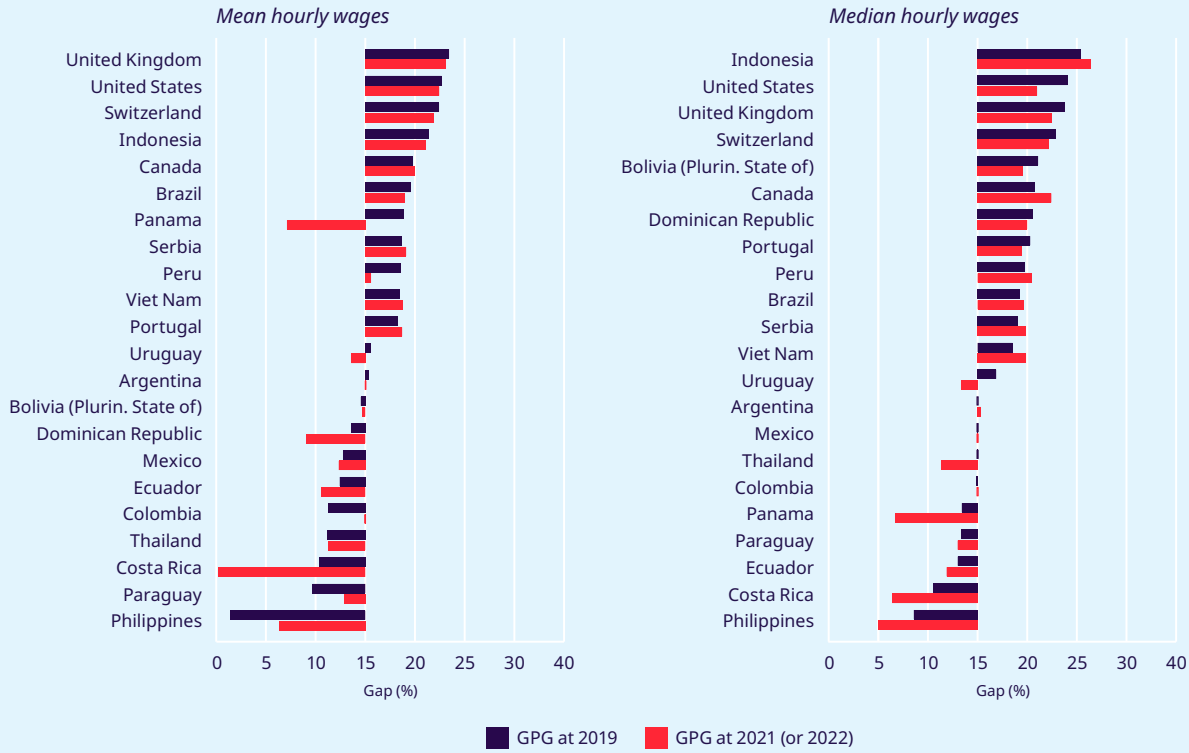
Source: ILO estimates. See Appendix I for the data sources.

factor-weighted mean hourly gender pay gap declined, the decreases ranged from 0.3 percentage points in Colombia to 7.5 percentage points in Panama. Except for a few countries, there is consistency in the direction of the change (that is, the sign) of mean and median estimates between 2019 and 2021 (or 2022), whether hourly wages or monthly earnings are used. One exception, for example, is Peru: the factor-weighted mean gender pay gap using hourly wages declined by 5.12 percentage points between 2019 and 2022, but the median gap increased by 0.88 percentage points.

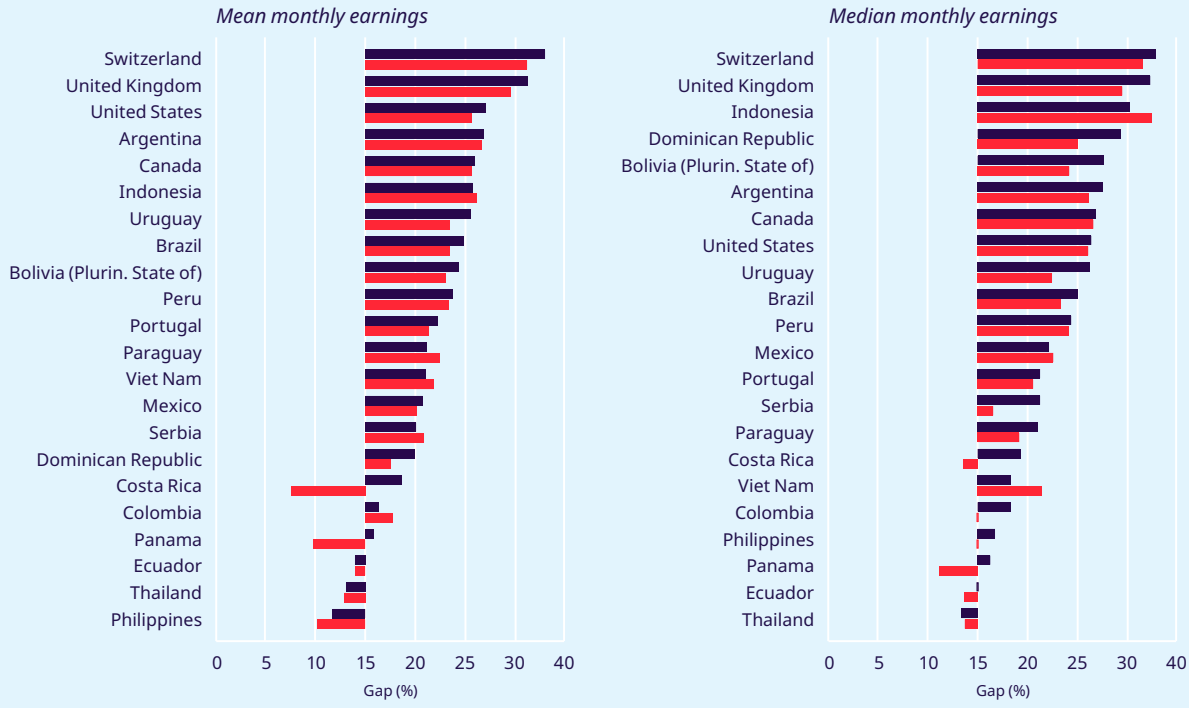
Overall, the four charts in figure 4.4 show that gender pay gaps were not greatly altered by the COVID-19 crisis. While estimates using mean hourly wages indicate an average drop of 0.61 percentage points in the gender pay gap among the 22 countries between 2019 and 2021 (or 2022), those based on mean monthly earnings suggest an increase of less than 0.1 percentage points. The average change in the gender pay gap is similar if estimates based on median hourly wages and median monthly earnings are used: –0.19 percentage points and 0.21 percentage points, respectively.

▶ Figure 4.5. Changes in raw gender pay gaps between 2019 and 2021 (or 2022), selected countries (percentage)

Panel A. Based on hourly wages



Panel B. Based on monthly earnings



GPG = gender pay gap.

Source: ILO estimates. See Appendix I for the sources of data.

▶ Box 4.2. The factor-weighted gender pay gap: An illustrative example

A factor-weighted gender pay gap is arrived at by first selecting a set of variables (factors) that are important determinants of wage structures to cluster women and men into comparable subgroups. Four factors have been highlighted as particularly relevant for this purpose, and data for them are readily available in most survey databases. They are "education", "age", "working-time status" (that is, full-time versus part-time) and "private versus public sector employment". These variables are used to divide the sample into subgroups. It is preferable to keep the number of subgroups reasonably small so that one does not end up with subgroups where a few individuals, who may or may not be representative of their group, dominate the outcome. The variables "education" and "age" are used to classify individuals into four subgroups in each case. The variables "full-time versus part-time" and "private versus public sector employment" by definition comprise two subgroups each. Altogether, these four variables generate a total of (at most) 64 subgroups, as the result of the interaction of 4×4×2×2 different subgroups. Once the subgroups are formed, the next step is to estimate the subgroup-specific gender pay gap for each one, using mean and median values. The final step is to estimate the factor-weighted mean and median gender pay gaps, summing the weighted values of the (at most) 64 subgroups. The weight for each subgroup is its proportional representation in the population of wage employees, so the (at most) 64 subgroup weights will add up to 1. Applying these weights and adding up the weighted subgroup gender pay gaps leads to a single value that is referred to as the mean (or median) factor-weighted gender pay gap.

The table below, using the example of Egypt, provides some details to illustrate the method described above and shows the effect of "clusters" in the estimation. The first four rows present the average hourly wage received by individuals in each subgroup defined by their educational level and by whether they are employed in the private or public sector. The following three rows show the proportional representation of each subgroup in the total population of wage employees. For example, Egyptian women educated to university degree level or above who work in the private sector are paid, on average, 4.8 Egyptian pounds per hour, while men in the same category earn 6.0 Egyptian pounds. Overall, women and men educated to university degree level or above and who work as wage employees in the private sector represent 17.2 per cent of all women and men who work in Egypt, so this is the weight that this particular gender pay gap would receive in a weighted calculation that breaks the sample down according to educational level and public versus private sector employment.

One thing that emerges from this table is that there is a positive gender pay gap (that is, favouring men) in all cells defined by education and economic sector. In Egypt, nearly 74 per cent of female wage employees work in the public sector, and of these 58.5 per cent are highly qualified and are pushing the average hourly wage higher for all women, while the fact that a significant proportion of men are located in lower educational categories – in particular, those working in the private sector – pulls the men's average wage down. The result is a negative gender pay gap (that is, favouring women), even though within each of the subgroups defined by education and private versus public sector employment the gender pay gap is always positive (that is, favouring men). Although not all possible subgroups (of which there may be at most 64) are shown in the table, once the composition effects are accounted for by weighting the (at most) 64 subgroups, the gender pay gap becomes positive.

▶Table 4.B1. Details of the factor-weighted gender pay gap for Egypt

		Private sector			Public sector		
		Women	Men	Women and men	Women	Men	Women and men
Average wages per hour of each subgroup (Egyptian pounds)	Below secondary	3.4	4.5	4.4	3.4	4.4	4.3
	Secondary/vocational	3.0	4.6	4.5	5.9	6.1	6.1
	University and above	4.8	6.0	5.8	6.5	7.7	7.2
	Overall weighted average	3.8	4.8	4.7	6.2	6.4	6.3
Share of each subgroup in the total population of wage employees (%)	Below secondary	36.8%	47.0%	46.2%	4.4%	23.3%	17.0%
	Secondary/vocational	27.3%	37.4%	36.6%	37.1%	36.8%	36.9%
	University and above	36.0%	15.6%	17.2%	58.5%	39.9%	46.1%
Total number of wage employees in each subgroup		759 874	8 769 7 01	9 529 575	2 138 373	4 318 519	6 456 892

Source: ILO estimates using national survey data from Egypt, 2012 (see ILO 2018a, Appendix V).

Source: Based on box 3 in ILO (2018).

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5

Policy options and responses to the cost-of-living crisis

5

Policy options and responses to the cost-of-living crisis

This report highlights how the various crises of the past three years have interacted to affect both wage growth and labour market outcomes for wage employees worldwide. At a time when WHO has announced that the end of the COVID-19 pandemic is in sight,[1] the growing impact of a widespread and severe inflationary crisis, together with a global slowdown in economic growth, driven in part by the war in Ukraine and the global energy crisis, is pushing real wage growth into negative figures in most countries and regions. Indeed, it is the first time since the ILO started presenting wage trends through the *Global Wage Report* that global wage growth is negative – this with a data series that goes back to 2006 and thus covers a period that includes the most significant economic crises of the twenty-first century so far.

1 On 14 September 2022, the WHO Director-General announced that the end of the COVID-19 pandemic was in sight, presenting the most optimistic outlook yet on the two-year-long health crisis, which has killed nearly 7 million people worldwide.

Before the pandemic, slow wage growth across countries and regions was often highlighted as a concern and there was much discussion of possible ways of increasing wage growth to help sustain domestic demand and reduce inequalities (IMF 2017; ILO 2018; OECD 2016). The COVID-19 crisis triggered an unprecedented response by countries around the world as they sought to support workers and incomes and save labour markets from collapse. However, the difference in the capacities of advanced, emerging market and developing economies to respond to the crisis has exacerbated global income inequality, which has increased to levels last seen in 2008–10, thereby partly reversing the decline achieved in the past two decades (Adarov 2022).

Poverty has also been on the rise. Although global poverty more recently resumed its downward trend, between 75 million and 95 million people were pushed into extreme poverty during the COVID-19 crisis (Gerszon-Mahler et al. 2022). The negative wage growth reported for 2022, which has been fuelled by the fast rise in inflation, is likely to lead to further increases in within-country inequality, not only because inflation hits low-income households the hardest (Bulíř 2001; Benson 2021; Orchard 2022)

> Policies required to contain rising inflation have an impact on households across the income scale, so it is essential to support wage workers and their families through the provision of adequate wages.

but also because inflation-vulnerable households are likelier to have lost more in terms of wage employment and total wage bill in the harshest phases of the crisis. Policies are clearly required to put a brake on rising inflation, but consideration should also be given to the way in which such policies impact on households across the income scale. More than ever, it is necessary to support wage workers and their families through the provision of adequate wages. The purpose of this final chapter is to provide an overview of policy options and responses to the current cost-of-living crisis.

5.1. Macroeconomic policies

From the second quarter of 2022 onwards, central banks and monetary authorities across the globe have responded to the current inflation crisis by, in particular, raising interest rates to stop inflation from soaring further. On 15 June 2022, the US Federal Reserve raised its benchmark interest rates by 0.75 percentage points – the biggest hike since 1994 – as a first step towards gradually achieving a 2 per cent inflation rate by 2024. Similarly, in the second quarter of 2022, the European Central Bank (ECB) announced a gradual lifting of accommodative monetary policy. It subsequently raised interest rates by 0.25 percentage points in July 2022 and by a further 0.75 percentage points in September 2022 – the biggest rise ever. Like the Federal Reserve, the ECB also expects to achieve a 2 per cent inflation rate by 2024.

With interest rates going up, it is expected that the cost of financing will increase (as will the benefits of saving), that consumption and investment will drop, and that inflation will stop growing as the economy slows down. However, the tight monetary policy could lead to adverse outcomes for certain segments of the population and trigger a period of recession. Households, for example, may find it difficult to repay their debts, including their mortgages, the taking out of which entails the greatest investment risk for most households. The moves by the ECB during 2022 have already increased the cost of repaying an average mortgage in Spain by about €120 per month. This is likely to cause significant financial distress for low-income households in a country where the gross minimum wage is €1,167 per month. Higher interest rates increase the cost of both servicing mortgages and renting a house, which could delay the decision of young workers to become independent and start a family, further contributing to an ageing population. Moreover, those households that fell into debt during the

COVID-19 crisis so as to make ends meet now face the double burden of repaying their debts at higher interest rates, which will further drag down their standard of living. Although central banks are aware of these risks, the alternative scenario of continued price inflation is considered even more undesirable.

For business owners, higher interest rates increase the cost of financing their business, including the cost of investment. This may dampen the creation of wage employment in the private sector and contribute further to a slowdown in economic growth. Public employment creation can also suffer in periods of tight monetary policy. While high interest rates increase the attractiveness of public debt among investors because government bonds bring greater returns at a risk that is considered low, the interest payments on public debt faced by governments increase and this may ultimately divert resources away from public employment creation. For low- and middle-income countries, the current increase in interest rates in the United States, together with the ensuing appreciation of the US dollar, means that debt repayments have become more expensive, putting their economies in a weaker position at a time when their labour markets are still recovering from the effects of the pandemic (Estevaõ 2022).

One mechanism whereby tight monetary policy can stop inflation from rising further is the effect of such a policy on inflation expectations and therefore on moderating wage demands to avoid a wage–price spiral[1] (ECB 2022). This is because price expectations (or expectations of inflation in the future) are a key element in wage negotiations, including collective bargaining.[2] But is there a case for such a mechanism to play a role in reducing current inflation rates? Drawing on empirical evidence, this report has shown that nominal wages are not catching up with inflation and that the subdued wage growth, lagging behind productivity growth, that was already highlighted in the *Global Wage Report 2018/19* (ILO 2018) continues to characterize wage outcomes in many countries worldwide. There is in fact no evidence of a wage–price spiral either in high-income countries or in middle- and low-income ones, most of which are still at employment levels below those observed before the pandemic (IMF 2022d; Orchard 2022). It would seem, therefore, that much of the recent rise in inflation is the result of expansionary policies over the past few years combined with the recent increase in energy prices, bottlenecks in global supply chains caused by the COVID-19 crisis, and geopolitical conflicts, notably the war in Ukraine (ILO 2022c). It is also a moot point whether some large corporations may have taken advantage of the inflationary environment to raise their prices and profits (Zahn 2022). Wage workers, particularly those in the lower deciles of the wage distribution, are faced with higher and rising prices resulting from a battery of exogenous shocks which do not seem related to spiralling wages. In such circumstances, the bargaining process for future nominal wage adjustments should embrace a sufficiently large but prudent price expectation. This could contribute to safeguarding the standard of living of households – particularly low-income households – against unexpected future inflation hikes, while avoiding an undesirable wage-inflation spiral. Moreover, the report has shown that the gap between wage growth and labour productivity growth is widening further: in fact, the gap in 2022 is at its widest since the beginning of the twenty-first century. This means that there is room for average real wages to increase, not just to catch up with inflation but also to become aligned with productivity growth.

> The gap between wage growth and labour productivity growth is widening further – there is room for real wages to increase, not just to catch up with inflation but also to become aligned with productivity growth.

1 The Phillips curve posits a negative relationship between unemployment and wage growth, whereby lower unemployment leads to higher wage and price inflation.

2 The expectation of a 2 per cent inflation rate in 2024 should certainly affect the adjustments behind collective pay agreements currently negotiated for the next two years. However, not too long ago, central banks together with the IMF had called for wages to increase since these were far too low to drive up inflation to the 2 per cent target (Vieira 2016).

5.2. The need to strengthen labour market institutions and wage policies

The report has demonstrated how inflation rates are also eroding the purchasing power of minimum wages. Given that 327 million wage earners before the pandemic, or 19 per cent of all wage employees worldwide, earned at or below the applicable hourly minimum wage (ILO 2020a), an adequate adjustment of minimum wages would in itself help significantly to improve the living standards of low-income households in the current cost-of-living crisis. The importance of minimum wages as a tool for reducing working poverty is highlighted by the fact that 90 per cent of ILO Member States have minimum wage systems in place. Minimum wages can protect low-paid workers against hefty losses of purchasing power at times of high inflation. However, for this mechanism to be effective, it is necessary that minimum wages be adjusted regularly to take into account the needs of workers and their families, along with economic factors. This adjustment process should be undertaken with the full participation of the social partners, in line with the Minimum Wage Fixing Convention, 1970 (No. 131). An adjustment of minimum wages would make a positive contribution to mitigating the current cost-of-living crisis while helping to sustain aggregate demand at a time when the global economy is slowing down as a result of various concurrent crises (ILO 2016). It is worth emphasizing that minimum wages also played a positive role during the COVID-19 crisis by serving as a benchmark in temporary wage subsidy schemes (ILO 2020b).

Strong social dialogue, including collective bargaining, can be instrumental in achieving adequate wage adjustments during a crisis. The prerequisite for this is adequate representation of employers' and workers' voices. However, several studies have pointed to the gradual decline in union power, accompanied by the rising power of large companies, as an important factor behind the slow real wage growth over the past three decades. Social dialogue, both bipartite and tripartite, played a critical role in the immediate response to the COVID-19 crisis in many countries and sectors, particularly when it came to designing and implementing national recovery plans. Considerable efforts were undertaken to strengthen the capacity of public institutions and employers' and workers' organizations to participate in such dialogue and arrive at common positions in tackling the challenges brought by the crisis (ILO 2021c). Unfortunately, according to a recent report by the Organisation for Economic Co-operation and Development (OECD), union membership among OECD countries has declined from about 33 per cent in 1975 to 16 per cent in 2018, while the share of workers covered by a collective bargaining agreement shrank from 46 per cent in 1985 to 32 per cent in 2017 (OECD 2019). In the United States, for example, the share of workers covered by collective agreements fell from 27 per cent in 1979 to just 11.6 per cent in 2019 (Hirsch and Macpherson, n.d.).

Collective bargaining and social dialogue can benefit from the use of sound empirical evidence to inform bipartite or tripartite negotiations. This report has highlighted the importance of using relevant data to examine how the COVID-19 crisis impacted on the labour market outcomes of wage employees. In particular, Chapter 4 sought to disentangle the effects of employment

Minimum wages can protect low-paid workers against hefty losses of purchasing power at times of high inflation. However, for this mechanism to be effective, it is necessary that minimum wages be adjusted regularly to take into account the needs of workers and their families, along with economic factors. This adjustment process should be undertaken with the full participation of the social partners.

composition on wage outcomes, leading to a more accurate understanding of how the crisis affected employees across the wage distribution. It thus emerged that wage employment losses among women were greater than those among men, that low-wage earners lost more employment than higher-wage earners, and that wage earners in informal employment were more adversely impacted than those in formal employment. From a policymaking point of view, robust and detailed empirical evidence is required to guide the social partners and labour market institutions. During the pandemic, national statistical offices made great efforts to maintain the regular collection of survey data, but in several countries the coverage of data up to the end of 2021 (and sometimes into the first half of 2022) was not comparable to that of previous years. This was noticeable not least in wage statistics (see Appendix I, in particular the sections on the processing of data). Therefore, one relevant recommendation for policymakers is to enhance the capacity of national statistical offices – mostly, though not exclusively, in low- and middle-income countries – to collect labour market information, even during a crisis.

As pointed out in Chapter 3, consumer price inflation generally impacts most adversely on low-income households, which spend a larger share of their income on price-inelastic goods, particularly food, housing and transport. In some countries, the higher cost of living faced by low-income households is already taken into account when adjusting the minimum wage. For example, in Brazil the National Consumer Price Index (INPC), rather than the general price index, is used to adjust the minimum wage.[3] The INPC is computed over a consumption bundle of households earning between one and eight minimum wages, whereas the general price index uses a consumption bundle of households earning up to 40 minimum wages, which therefore covers almost all wage earners except for those in the top deciles. The INPC puts a greater weight on goods consumed among poorer households, and since 2011 it has been the index used to adjust the national minimum wage together with the variation in the previous year's GDP. Another example of a differentiated index is the US Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W), which is slightly above the Consumer Price Index for All Urban Consumers (CPI-U) since the former effectively considers low- and middle-income workers. In the United States, the CPI-W is used exclusively to adjust social security and federal retirement benefits, and not the earnings of wage employees (not even those on the minimum wage). Both countries (Brazil and the United States) provide examples of action that could help to adjust the nominal wages of low-income households so that – especially at times of high and rising inflation – real wages are aligned with spending patterns at the low end of the income distribution.

> The creation of decent formal wage employment is a prerequisite for a more equitable distribution of wages and income, and is a key contributor to equitable and sustainable wage growth.

It should be added that the creation of decent formal wage employment is a prerequisite for a more equitable distribution of wages and income, and is a key contributor to equitable and sustainable wage growth. By the end of 2021, employment in high-income countries had recovered to the levels observed before the pandemic (sometimes even exceeding these), with some of these countries experiencing a surge in job vacancies (particularly in low- and semi-skilled occupations) while the number of jobseekers remained stable (ILO 2022a). In low- and middle-income economies, employment has not yet recovered to pre-pandemic levels, while informal employment seems to be on the rise – a scarring effect that may last far beyond the aftermath of the COVID-19 crisis. The Transition from the Informal to the Formal Economy Recommendation, 2015 (No. 204), provides guidelines that can help low- and middle-income countries to mitigate such effects.

3 INPC stands for *Índice Nacional de Preços ao Consumidor*. There is a third basket of goods and services calculated by the Brazilian Institute of Geography and Statistics known as the Necessary Minimum Wage basket. This basket has proved to be unaffordable at the prevailing minimum wage, but it helps policymakers to understand the effective inflation experienced by households earning one minimum wage, a rate that has been historically higher than that implied by the INPC (Lemos 2004).

5.3. Policies to support households, particularly the most vulnerable, during high inflation

Policies to ease the impact of the cost-of-living crisis on households range from measures targeting specific groups, such as means-tested vouchers provided to low-income households to enable them to buy essential goods, to more general interventions aimed at reducing the cost of living for all households, such as the (often temporary) reduction of indirect taxation on goods and services. For example, many governments, particularly among countries in the eurozone, are providing low-income households with energy vouchers to help them cope with the current energy crisis. In September 2022, the German government announced a €200 billion package to mitigate the impact of soaring energy prices on companies and households; the measure includes a brake on gas prices and a cut in sales tax for fuel. Likewise, in the same month the French Ministry of Finance announced a €45 billion package to shield households and businesses from energy price shocks. Also in France, households with an annual income below €10,800 have since 2018 been eligible for energy vouchers ranging from €48 to €277 per month.

Some countries (or blocs of countries) have introduced taxes, temporary or permanent, on oil and gas companies, large corporates or wealthier households, to help pay for measures during times of crisis. For example, in September 2022 the EU proposed a windfall tax on fossil fuel producers to offset the effects of the energy crisis. At the same time, Spain announced a battery of measures (some temporary, some permanent) aimed at increasing the Government's revenue to help cope with the current crisis while avoiding hurting vulnerable households. These measures included a (temporary) tax of 1.7 per cent on the patrimony of large fortunes (that is, households with €3 million or more in wealth), an increase in the tax paid by the top income bracket of up to 2 percentage points, a temporary tax applied to both large energy companies and the banking sector and, at the same time, a reduction in income tax among low-income households along with a reduction in tax payments among small enterprises and own-account workers. In the United Kingdom a levy of 25 per cent was imposed in May 2022 on the profits of major oil and gas companies operating on its territory, a levy that is expected to raise more than £28 billion in the next few years. In October 2021 the OECD agreed to introduce a landmark reform to the international tax system, which will ensure that multinational enterprises (MNEs) will be subject to a minimum 15 per cent tax rate from 2023. The agreement covers 136 countries and jurisdictions representing more than 90 per cent of global GDP and, if applied, could reallocate more than US$125 billion of profits from around 100 of the world's largest and most profitable MNEs to countries worldwide (OECD 2021). Measures such as these could help governments raise the resources needed to weather the current crises. Assuming that energy producers do not pass their higher costs on to consumers, such policies could significantly mitigate the cost-of-living crisis for low-income households without negatively impacting on inflation or prices.

> Cuts to VAT can mitigate the burden of inflation among low-income households while further helping to reduce inflation.

Cuts to value added tax (VAT) can mitigate the burden of inflation among low-income households while further helping to reduce inflation. In Germany, for example, VAT was reduced for six months, from 1 July to 31 December 2020, as part of the COVID-19 stimulus package to foster aggregate demand. In addition to considerably lowering the cost of basic goods and services (for example, the earlier VAT rate of 7 per cent on food was reduced to 5 per cent), it is estimated that the policy boosted German GDP by 0.3 per cent (Funke and Terasa 2022). As the current cost-of-living crisis begins to threaten the economic survival of households, several countries are cutting VAT rates on energy. For example, Spain has reduced VAT on electricity

from 21 per cent to 5 per cent as of June 2022, while VAT on gas in Germany has been reduced from 19 per cent to 7 per cent as of August 2022. The benefits of reducing VAT on essential goods and services are twofold. As highlighted in Chapter 4, these are the goods that take the largest share of income among low-income households, which means that cutting their cost can help the latter to weather the crisis. At the same time, the reduction of VAT contributes to lowering the general price level, which is also the objective of tight monetary policy.

> As the current cost-of-living crisis begins to threaten the economic survival of households, several countries are cutting VAT rates on energy.

5.4. Tackling the gender pay gap

The *Global Wage Report 2018/19*, which drew on data from 2014–16, estimated the global gender pay gap at around 20 per cent (ILO 2018). On the basis of a smaller sample of countries, the current edition suggests that gender pay gaps have changed little in recent years, despite the efforts by several countries across all regions of the world to reduce pay discrimination and achieve equal pay for work of equal value. This reflects the complexity of tackling pay gaps between women and men.

Significantly more needs to be done to further reduce gender pay inequalities in the world of work. This includes addressing the part of the gender pay gap that can be explained in terms of the labour market attributes of women, that is, by improving the educational situation of women and striving for a more equitable distribution of women and men across occupations and industries. It also includes addressing other factors underlying the gender pay gap – notably by reducing the motherhood pay gap, increasing pay in undervalued and highly feminized sectors and industries, and implementing legal frameworks and policies to increase pay transparency at the enterprise level with a view to eliminating pay discrimination. The Equal Pay International Coalition, a joint initiative launched by the ILO, UN-Women and the OECD in September 2017, has managed to reach out to governments, the social partners and a considerable number of enterprises in the private sector as part of its mission to achieve equal pay for work of equal value.[4] This and similar initiatives enable countries across the world to learn from successful examples of how to measure and monitor pay gaps at the national level, to familiarize themselves with the tools that some major economies are applying, and to understand which are most effective in reducing pay discrimination between women and men.

In addressing gender inequalities in the world of work, it is important to take into account one possible consequence of the COVID-19 crisis, namely a wider gender gap in employment, particularly in low- and middle-income countries (ILO 2022a). When women leave the labour market, they are less likely than men to return; moreover, women are less likely than men to find a job (ILO 2017a). The widening of employment gaps between women and men can also weaken the bargaining power of women in the labour market, especially in low- and middle-income countries, where they tend to dominate in low-paid jobs. This would undoubtedly contribute to maintaining or even increasing the gender pay gap between women and men, which could become one of the long-lasting effects of the COVID-19 crisis.

4 See https://www.equalpayinternationalcoalition.org/.

5.5. The role of multilateralism

Although prices were already on the rise before the outbreak of war in Ukraine, it is unquestionable that the conflict has contributed to increasing inflation rates, particularly among countries that depend heavily on the supply of oil and gas from the Russian Federation. A prolongation of the war could thwart expected productivity outcomes and drag large economies, especially those of the eurozone, into a recession. In such circumstances, despite the need to channel public spending into support measures for low-income households, it is also important to consider public investment in the promotion of energy sources that are a viable alternative to carbon-based fuels. This could in itself be a way of increasing wage employment in new sectors, but more importantly, it would help to increase global stability by cutting dependence on geopolitically sensitive energy sources and facilitate a just transition to a resource-efficient economy.

Although the recent health crisis and the war in Ukraine seem to be the key drivers of uncertainty at present, the fact is that over the past two decades the world has arguably been drifting in a direction that endangers the prospect of achieving prosperity and peace for all, as called for by the United Nations 2030 Agenda for Sustainable Development. The 17 Sustainable Development Goals pursue a world without extreme poverty and with equal opportunities for everyone to realize their potential. Global funding and mobilization of resources are key to achieving these goals, and although the international community has so far provided considerable support, more needs to be done.

The negative effects of climate change; increasing inequalities; the poverty, discrimination, violence and exclusion endured by millions of people, including the discrimination that women and girls continue to suffer in many parts of the world; the lack of vaccines and access to adequate sanitation and essential healthcare for all; and the growing digital divide between poor and wealthier countries – all these factors may contribute to economic, social and political conflicts that threaten the very existence of humankind.

Accordingly, in 2021, the United Nations Secretary-General presented an agenda of key proposed actions grouped under 12 commitments, which together seek to reaffirm global solidarity as a way of overcoming crises. *Our Common Agenda*, as the document is entitled, includes the strengthening of decent work as one of these key actions (UN 2021). The creation of decent wage employment, along with policies to ensure adequate wages, which are relevant to several of the Sustainable Development Goals, can make a vital contribution to the pursuit of social justice.

Estimating global and regional wage trends in the ILO Global Wage Report: methodological note[1]

The methodology to estimate global and regional wage trends was developed by the ILO in collaboration between technical departments and the Department of Statistics, following proposals formulated by an ILO consultant (Mehran, 2010) and three peer reviews conducted by four independent experts (Tillé, 2010; Jeong and Gastwirth, 2010; Ahn, 2010). All the methodology was again peer reviewed in 2017 by an external expert (Karlsson, 2017). This appendix describes the methodology adopted because of this process.

[1] This methodological note appeared as Appendix I in the ILO Global Wage Report up to the 6th edition. From edition 7th the note appears only as an additional resource in the corresponding wage page of the ILO. If there is a need to find out more specific estimates of the parameters and measures explained in the note, please contact inwork@ilo.org.

Concepts and definitions

According to the international classification of status in employment (ICSE-93), "employees" are workers who hold "paid employment jobs", that is, jobs in which the basic remuneration is not directly dependent on the revenue of the employer. Employees include regular employees, workers in short-term employment, casual workers, outworkers, seasonal workers, and other categories of workers holding paid employment jobs (ILO, 1993).

As economies advance in terms of economic development, the proportion of workers who become wage employees usually increases this is because own-account workers find better opportunities as wage employees. Female labour force participation also tends to be positively related to economic development. As a result, wage trends are affecting an increasing share of the employed population across the world. At the same time, not all people who work are paid employees. Particularly in low- and middle-income countries, many are self-employed or are contributing to family businesses. Such workers receive an income from their work, but not a wage from an employer.

The word "wage" refers to total gross remuneration including regular bonuses received by employees during a specified period for time worked as well as time not worked, such as paid annual leave and paid sick leave. Essentially, it corresponds to the concept of "total cash remuneration", which is the major component of income related to paid employment (ILO, 1998). It excludes employers' social security contributions.

Wages, in the present context, refer to real average monthly wages of employees. Wherever possible, we collected data that refer to all employees (rather than to a subset, such as employees in manufacturing or full-time employees)[2]. To adjust for the influence of price changes over different time periods, wages are measured in real terms, i.e., the nominal

[2] Aiming for the broadest possible coverage is in line with the idea that decent work and hence adequate earnings are of concern for all workers, and that statistical indicators should cover all those to whom an indicator is relevant. See ILO, 2008.

wage data are adjusted for consumer price inflation in the respective country.[3] Real wage growth refers to the year-on-year change in real average monthly wages of all employees.

Considering the differences in definitions and the absence of wage figures which are completely disaggregated for every country by each component of wages (including bonuses, family allowances, sick leave, etc.), the *Global Wage Report* has to date focused on identifying changes over time within countries instead of comparing wage levels across countries.

Census approach

The methodology used for the global and regional estimates is a census method with non-response. In the census approach, the objective is to find wage data for all countries and to develop an explicit treatment in the case of total non-response (see "Treatment of total non-response" below). In each edition of the ***Global Wage Report*** the objective is to collect wage data from as many countries and territories (about 190) which are then grouped into five separate regions.[4] To enable easier comparison with regional employment trends, our regional groupings are compatible with those used in the ILO's Global Employment Trends: see the ILOSTAT Data Explorer (https://www.ilo.org/shinyapps/bulkexplorer19/).

Treatment of item non-response

In some countries for which we found data, the statistical series were incomplete, in the sense that data for some years were missing. The data appendix in the ILO WAGE website provides coverage information for each year from 2007 to the latest available year. Coverage from 2007 refers to annual estimates except for the most recent year where

[3] This is done based on the IMF's consumer price index (CPI) for each country. In cases where our national counterparts explicitly provide a real wage series, the real wage series is used in place of the nominal series deflated by the IMF CPI.

[4] Excluding countries and territories for which data on employment are not available from the ILO's Global Employment Trends Model (GET Model), more specifically some small countries and territories (e.g., the Holy See and the Channel Islands) that have no discernible impact on global or regional trends.

information refers to months up to the second quarter of that year. Considering that not all countries provide data with the same frequency interval, the number of countries covered with data from the latest year of the report is less complete than that from previous years: this implies that estimates for the latest year are provided with a greater margin of uncertainty.

Although the number of countries covered in subsequent editions of the Global Wage Report continues to increase (see ILO, 2018) the coverage continues to be uneven between regions – with data from countries from lower income regions less prevalent than that from higher and middle-income countries. For this reason, regional growth rates are flagged as "provisional estimates" when they are based on coverage of around 75 per cent and as "tentative estimates" when the underlying coverage of our database is between 30 per cent and 60 per cent, to draw attention to the fact that they might be revised once more data become available.

To address this kind of item non-response (i.e., gaps in the spread of countries for which we have data) a "model-based framework" is used to predict missing values.[5] This is necessary to hold the set of responding countries constant over time and so avoid the undesired effects associated with an unstable sample. Several complementary approaches were used, depending on the nature of the missing data points; these are described in detail in Appendix I of the 2010/11 edition (see ILO, 2010).

Treatment of total non-response

Response weights

To adjust for total non-response (when no time series wage data are available for a given country), a "design-based framework" was used in which non-response was considered as a sampling problem. Because non-responding countries may have wage characteristics that differ from those of responding countries, non-response may introduce a bias into the final

[5] This is in line with standard survey methodology, where a model-based framework is generally used for item non-response, while a design-based framework is used for questionnaire non-response.

estimates. A standard approach to reduce the adverse effect of non-response is to calculate the propensity of response of different countries and then weight the data from responding countries by the inverse of their response propensity.[6] This implies that no imputations are made for non-responding countries.

In this framework, each country responds with a probability ϕ_j and it is assumed that countries respond independently of each other (Poisson sampling design). With the probabilities of response, ϕ_j, it is then possible to estimate the total, *Y*, of any variable y_j:

$$Y = \sum_{j \in U} y_j \tag{1}$$

by the estimator

$$\hat{Y} = \sum_{j \in R} \frac{y_j}{\phi_j} \tag{2}$$

where *U* is the population and *R* is the set of respondents. This estimator is unbiased if the assumptions are true (see Tillé, 2001). In our case, *U* is the universe of all countries and territories listed in table A1 in Appendix II and *R* is those "responding" countries for which we could find time series wage data.

The difficulty, however, is that the response propensity of country *j*, ϕ_j, is generally not known and must itself be estimated. Many methods are available in the literature to estimate the response propensity (see e.g., Tillé, 2001). In our case, the response propensity was estimated by relating the response or non-response of a given country to its number of employees and its labour productivity (or GDP per person employed in 2011 US$PPP). This is based on the observation that wage statistics are more readily available for richer and larger countries than for poorer and smaller countries. The number of employees and

[6] For a discussion of the missing data problem, see also p. 8 in ILO Global Wage Report 2010/11 (ILO, 2010).

labour productivity are used since these variables are also used for calibration and size weighting (see below).[7]

For this purpose, we estimated a logistic regression with fixed effects as follows:

$$prob(response) = \Lambda(\alpha_h + \beta_1 x_{j2008} + \beta_2 n_{j2008}) \quad (3)$$

where x_{j2008} is ln(GDP per person employed in 2011 US$PPP) of country *j* in the year 2008, n_{j2008} is ln(number of employees) in 2008, and Λ denotes the logistic cumulative distribution function (CDF).[8] The year 2008 is chosen because to reflect a time between 1999 and the latest year in the series: any year that is approximately a mid-point in the series would be acceptable. The fixed effects, α_h, are dummies for each of the regions with incomplete data (Asia and the Pacific, Latin America and the Caribbean, Arab States, Africa), while the two remaining regions with complete data form the omitted benchmark category. The logistic regression had a universe of *N* cases – where *N* is approximately 190 countries or territories – and produced a pseudo-R^2 of 0.4 in each of the editions of the report. The estimated parameters in (3) were then used to calculate the propensity of response of country *j*, ϕ_j.

The response weight for country *j*, φ_j, is then given by the inverse of a country's response propensity:

$$\varphi_j = \frac{1}{\phi_j} \quad (4)$$

[7] An alternative specification with GDP per capita and population size produced very similar results.

[8] Data for the number of persons employed and the number of employees are from the Global Employment Trends database (see ILOSTAT Data Explorer, https://www.ilo.org/shinyapps/bulkexplorer19/). The data on latest year's GDP at 2011 US$PPP are drawn from the World Bank's World Development Indicators database (see the WDI database at World Development Indicators | Data Bank (worldbank.org)).

Calibration factors

The final adjustment process, generally called calibration (Särndal and Deville, 1992), is undertaken to ensure consistency of the estimate with known aggregates. This procedure ensures appropriate representation of the different regions in the final global estimate. In the present context, a single variable "number of employees", *n*, each year *t* was considered for calibration. In this simple case, the calibration factors, γ_{jt}, are given by:

$$\gamma_{jt} = \frac{n_{ht}}{\hat{n}_{ht}},\ j \in h \tag{5}$$

where *h* represents the region to which country *j* belongs, n_{ht} is the known number of employees in that region in year *t*, and $\hat{n}_{ht}$ is an estimate of total number of employees in the region and the same year, obtained as a sum product of the uncalibrated weights and the employment data from the responding countries within each region.[9]

The resulting calibration factors vary in each edition of the Global Wage Report. As an example, for the year 2017 these were 1.00 (Europe and Central Asia), 0.99 (Asia and the Pacific), 1.01 (Americas), 0.97 (Africa) and 1.10 (Arab States). Since all calibration factors are either equal to or very close to 1, these results show that estimates $\hat{n}_{ht}$ were already very close to the known number of employees, n_{ht}, in each region. Note the calibration process was repeated for each year so that the weight of each region in the global estimate changes over time in proportion to its approximate share in the global wage bill.

[9] The estimate, $\hat{n}_h$, of the number of employees in region *h* is obtained by multiplying the number of employees in countries from the region for which we have wage data with the uncalibrated weights, and then summing up across the region.

Calibrated response weights

The calibrated response weights, φ'_{jt}, are then obtained by multiplying the initial response weight with the calibration factor:

$$\varphi'_{jt} = \varphi_j \times \gamma_{jt} \tag{6}$$

The regional estimate of the number of employees based on the calibrated response weights is equal to the known total number of employees in that region each year. Thus, the calibrated response weights adjust for differences in non-response between regions. The calibrated response weights are equal to 1 in the regions where wage data were available for all countries (Europe and Central Asia). They are larger than 1 for small countries and countries with lower labour productivity since these are under-represented among responding countries.

Estimating global and regional trends

One intuitive way to think of a global (or regional) wage trend is in terms of the evolution of the world's (or a region's) average wage. This would be in line with the concept used for other well-known estimates, such as regional GDP per capita growth (published by the World Bank) or the change in labour productivity (or GDP per person employed).

The global average wage, $\bar{y}_t$, at the point in time *t* can be obtained by dividing the sum of the national wage bills by the global number of employees:

$$\bar{y}_t = \frac{\sum_j n_{jt} \times \bar{y}_{jt}}{\sum_j n_{jt}} \tag{7}$$

where n_{jt} is the number of employees in country *j* and $\bar{y}_{jt}$ is the corresponding average wage of employees in country *j*, both at time *t*.

The same can be repeated for the preceding period *t+1* to obtain $\bar{y}^*_{t+1}$, using the deflated wages $\bar{y}^*_{jt+1}$ and the number of employees n_{t+1}. It is then straightforward to calculate the growth rate of the global average wage, *r*.

However, while this is a conceptually appealing way to estimate global wage trends, it involves some difficulties that we cannot at present overcome. In particular, aggregating national wages, as done in equation (7), requires them to be converted into a common currency, such as US$PPP. This conversion would make the estimates sensitive to revisions in PPP conversion factors. It would also require that national wage statistics be harmonized to a single concept of wages to make the level strictly comparable.[10]

More importantly, the change in the global average wage would also be influenced by composition effects that occur when the share of employees shifts between countries. For instance, if the number of paid employees falls in a country with high wages but expands (or stays constant) in a country of similar size with low wages, this would result in a fall of the global average wage (when wage levels stay constant in all countries). This effect makes changes in the global average wage difficult to interpret, as one would have to differentiate which part is due to changes in national average wages and which part is due to composition effects.

We therefore gave preference to an alternative specification to calculate global wage trends that maintains the intuitive appeal of the concept presented above but avoids its practical challenges. To ease interpretation, we also want to exclude effects that are due to changes in the composition of the world's employee population. We therefore avoid the danger of producing a statistical artefact of falling global average wages that could be caused by a shift in employment to low-wage countries (even when wages within countries are growing).

[10] See e.g., the work done mainly for industrialized countries by the International Labor Comparisons program of the US Bureau of Labor Statistics (see: http://www.bls.gov/fls/). Since we do not compare levels but focus on change over time in individual countries, data requirements are less demanding in our context.

When the number of employees in each country is held constant, the global wage growth rate can be expressed as a weighted average of the wage growth rates in the individual countries:

$$r_t = \sum_j w_{jt} \times r_{jt} \tag{8}$$

where r_{jt} is wage growth in country j at point in time t and the country weight, w_{jt}, is the share of country j in the global wage bill, as given by:

$$w_{jt} = n_{jt} \times \bar{y}_{jt} / \sum_j n_{jt} \times \bar{y}_{jt} \tag{9}$$

While we have data for the number of employees, n_{jt}, in all countries and relevant points in time from the ILO's Global Employment Trends Model, we cannot estimate equation (9) directly since our wage data are not in a common currency. However, we can again draw on standard economic theory which suggests that average wages vary roughly in line with labour productivity across countries.[11] We can thus estimate $\bar{y}_j$ as a fixed proportion of labour productivity, *LP*:

$$\hat{\bar{y}}_{jt} = \alpha \times LP_{jt} \tag{10}$$

where α is the average ratio of wages over labour productivity. We can therefore estimate the weight as

$$\hat{w}_{jt} = n_{jt} \times \alpha \times LP_{jt} / \sum_j n_{jt} \times \alpha \times LP_{jt} \tag{11}$$

which is equal to

$$\hat{w}_{jt} = n_{jt} \times LP_{jt} / \sum_j n_{jt} \times LP_{jt} \tag{12}$$

[11] See also ILO Global Wage Report 2008, p. 15, for the association between wage levels and GDP per capita. Notwithstanding this, wage developments can diverge from trends in labour productivity in the short and medium term.

Substituting $\hat{w}_{jt}$ for w_{jt} and introducing the calibrated response weight, φ'_j, into equation (8) gives us the final equation used to estimate global wage growth:

$$r_t = \frac{\sum_j \varphi'_j \times \hat{w}_{jt} \times r_{jt}}{\sum_j \varphi'_j \times \hat{w}_{jt}} \qquad (13)$$

and for regional wage growth:

$$r_{ht} = \frac{\sum_j \varphi'_j \times \hat{w}_{jt} \times r_{jt}}{\sum_j \varphi'_j \times \hat{w}_{jt}}, j \in h \qquad (13')$$

where *h* is the region to which country *j* belongs. As can be seen from equations (13) and (13'), global and regional wage growth rates are the weighted averages of the national wage trends, where φ'_j corrects for differences in response propensities between countries.

Differences in global and regional estimates between editions of the Global Wage Report

Since 2010, when the publication of regional and global wage growth estimates using the methodology outlined above began, there have been slight revisions to the historical estimates. While these revisions are relatively minor in some regions, such as Europe and Central Asia, and Asia and the Pacific, they are more frequent and sometimes substantial in others. The revisions to regional estimates can be explained by several factors, briefly highlighted here.

Improvements and revisions to surveys which collect wage data. Improvements and revisions to existing wage data and surveys often occur. They may include a change in the geographical coverage (e.g., from urban to national), a change in sector coverage (e.g., from manufacturing to all sectors), a change in employee coverage (e.g., from full-time employees only to all employees), etc. To the extent that these changes influence the growth in wages they may also influence the regional estimate.

Exclusions. In Latin America, Argentina was excluded from the calculations from 2013 to 2016, included back in the estimates as of 2017. The exclusion during the period 2013 to 2016 was due to identified inconsistencies in its wage series during those years. Venezuela (since the 2016/17 edition) has been excluded due to the lack of consistent wage and inflation data.

Availability of new data from non-response and response countries. Particularly in emerging and developing economies, there is often a lag in the process time for data and/or their public availability. When new or older series are made available, they are incorporated into the regional estimates.

Revision of other data sources used to calculate the estimates. Over time, revisions to the CPI, total employment, total employees, and labour productivity can also influence regional and country estimates.

Bibliography

If you want to obtain any of the papers referred to in this methodological note, please write to inwork@ilo.org mentioning the author and year as it appears quoted in the text.