

## Survey responses

### Question 1 (part 1)

Table 1

	Have average wages risen more or less than headline inflation in 2022? Are they expected to rise by more or less in 2023?		Has the minimum wage risen more or less than headline inflation in 2022? Is it expected to rise by more or less in 2023?	
	2022 (latest year-over-year)	2023 (expected)	2022 (latest year-over-year)	2023 (expected)
Argentina	between 1 and 3 pp below CPI inflation	between 1 and 3 pp above CPI inflation	between 1 and 3 pp above CPI inflation	between 1 and 3 pp above CPI inflation
Brazil	more than 3 pp above CPI inflation	between 1 and 3 pp above CPI inflation	between 1 pp below and 1 pp above CPI inflation	between 1 and 3 pp above CPI inflation
Chile	between 1 and 3 pp below CPI inflation	between 1 and 3 pp above CPI inflation	more than 3 pp above CPI inflation	more than 3 pp above CPI inflation
China	between 1 and 3 pp above CPI inflation	more than 3 pp above CPI inflation	between 1 pp below and 1 pp above CPI inflation	between 1 pp below and 1 pp above CPI inflation
Colombia	between 1 pp below and 1 pp above CPI inflation	not applicable	between 1 and 3 pp below CPI inflation	between 1 and 3 pp above CPI inflation
Czech Republic	more than 3 pp below CPI inflation	between 1 and 3 pp below CPI inflation	more than 3 pp below CPI inflation	more than 3 pp below CPI inflation
Hong Kong	between 1 pp below and 1 pp above CPI inflation	between 1 pp below and 1 pp above CPI inflation	not applicable	more than 3 pp above CPI inflation
Hungary	more than 3 pp above CPI inflation	more than 3 pp below CPI inflation	more than 3 pp above CPI inflation	more than 3 pp below CPI inflation
India	between 1 and 3 pp below CPI inflation	not applicable	between 1 and 3 pp below CPI inflation	not applicable
Indonesia	more than 3 pp below CPI inflation	not applicable	more than 3 pp below CPI inflation	not applicable
Israel	between 1 and 3 pp below CPI inflation	between 1 and 3 pp above CPI inflation	more than 3 pp below CPI inflation	more than 3 pp above CPI inflation
Korea	between 1 pp below and 1 pp above CPI inflation	between 1 pp below and 1 pp above CPI inflation	between 1 pp below and 1 pp above CPI inflation	between 1 and 3 pp above CPI inflation
Malaysia	between 1 and 3 pp below CPI inflation	between 1 and 3 pp below CPI inflation	more than 3 pp above CPI inflation	not applicable
Peru	more than 3 pp below CPI inflation	more than 3 pp below CPI inflation	between 1 and 3 pp above CPI inflation	between 1 pp below and 1 pp above CPI inflation
Philippines	not applicable	not applicable	between 1 and 3 pp below CPI inflation	between 1 pp below and 1 pp above CPI inflation
Poland	between 1 and 3 pp below CPI inflation	between 1 and 3 pp above CPI inflation	between 1 and 3 pp below CPI inflation	between 1 and 3 pp above CPI inflation
South Africa	between 1 and 3 pp below CPI inflation	between 1 and 3 pp above CPI inflation	between 1 pp below and 1 pp above CPI inflation	between 1 and 3 pp below CPI inflation

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Thailand	more than 3 pp below CPI inflation	between 1 and 3 pp above CPI inflation	between 1 and 3 pp below CPI inflation	not applicable
Türkiye	more than 3 pp below CPI inflation	not applicable	more than 3 pp above CPI inflation	not applicable
Vietnam	more than 3 pp above CPI inflation	more than 3 pp above CPI inflation	between 1 and 3 pp above CPI inflation	more than 3 pp below CPI inflation

Source: EMDGM 2023 Questionnaire

## Question 1 (part 2)

Table 2

	How high is the risk of a wage-price spiral?	Use the space below if you want to add any qualification or comment on the above responses:
Argentina	high	Last estimations point to a real decrease in real wages of around 7% YoY. in December. Unions are expected to negotiate higher real wages in the first semester of 2023. This negotiation will be frequently updated considering the evolution of the CPI in the last months of 2022 and at the beginning of 2023. The government is making some agreements with the main private sector enterprises to assure low growth of the prices of retail food and basic products commonly used by the households.
Brazil	low	<p>Measures of real wages (usually received or effectively received) according to the National Household Services are increasing more than 5% in YoY terms in Sep/22. However, it is important to note that current levels of real wages are still below the pre-pandemic level. The strong YoY increase in real wages in Sep/22 reflects the base effects in 2021 due to the relevant surprise inflation in consequence of supply shocks. We expect the real wages (effectively received) to decrease -0.6% in 2022 considering the average level in the whole year and to increase around 1% next year.</p> <p>Regarding the minimum wage, in recent years in Brazil it has been readjusted in January. Therefore, the answer reflects that in Jan/22 the minimum wage has increased by the same amount that the CPI in 2021 (Dec21/Dec20). For 2023, the government recently elected has been proposing a real increase slightly higher than 1%.</p>
Chile	average	Real wages have continued to decline given the recomposition of the labour supply after the covid restrictions and the significant increase in inflation. The fall in real wages is the steepest in more than two decades, amid historically high variations in nominal wages. This is consistent with the information gathered from business surveys. Although companies perceive an increase in their labour costs, in general, nominal wage increases are below the CPI growth and have become less frequent. Except for mining, this evolution of real income is transversal to most sectors, among which the sharp drop in construction and communal services stands out. By occupational group, the most significant declines have occurred in the higher-paid jobs (September 2022, Monetary Policy Report, p. 18).
China	very low	China's economy is relatively dynamic, with economic growth generally maintaining a stable and rapid level, and households' wage income has been growing relatively fast at over 8% before the outbreak of the pandemic. Affected by the Covid-19 pandemic, China's CPI in 2022 rose by 2% over the previous year, and the wage income in the per capita disposable income increased by 4.9% over the previous year, 2.9 percentage points higher than the CPI growth. There are some disparities in China's regional development and the minimum wage standard varies from province to province. The average national minimum wage increased by 2.6% in 2022. China attaches great importance to protecting the livelihoods of low-income groups and other disadvantaged groups, and to guaranteeing the basic living needs of the people. China's average subsistence allowance increased by 5.6% in the first three quarters of 2022. It should be noted that as China's economy is recovering, the lack of effective demand is still the main issue. The industrial and supply chains operate smoothly, and the supply is adequate. The price level has remained stable and households' inflation expectations have been well anchored. There are favorable conditions to maintain the basic stability of prices. The real growth rate of households' disposable income is basically in line with economic growth, and the risk of "wage-price" spiral is relatively low.
Colombia	average	<p>Nominal wages for the salaried segment of the labour market have risen by 12% during the last year, partially offsetting the observed inflation (11.4% in September 2022). Thus, real wages have remained quite stable. It is worth to say that in the case of the non-salaried workforce, a segment that represents around of 53% of total employment, the nominal adjustments in their labour income have been stronger: currently their real labour income is growing at annual rates around 10%. Part of this large increase is related to a low base of comparison in 2021 due to the effect of the pandemic on this segment.</p> <p>Regarding the minimum wage (MW), its increase for 2022 was 10.07%, which implies that real MW shrank by 1,3 percentage points (pp) throughout the year. The 2023 scenario remains uncertain; nevertheless, in Colombia, the MW adjustment has as floor the observed inflation in the last year, and usually the rise incorporates an additional adjustment due to productivity growth. For such reason, nominal MW is expected to grow by, at least, 11% for the coming year. Given the high incidence of MW on wages, increases of such magnitudes are a cause of concern."</p>

## Question 1 (part 2)

Table 2

	How high is the risk of a wage-price spiral?	Use the space below if you want to add any qualification or comment on the above responses:
Czech Republic	average	The wage growth in the Czech Republic has risen over the last year but it has been falling behind the inflation greatly. There are however several significant risks of future wage development. First comes from overall status of the Czech Labour market, which has been cooled down only moderately after the pandemic and the energy crisis hasn't hit it as deeply as expected, despite the fact of Ukrainian refugees' inflow during 2022. The unemployment rate is keeping its extremely low levels (lowest in the EU). There are signals of persistent demand for labour by employers (leading indicators show hiring intentions, there is still almost as many vacancies as unemployed people). Another warning signal may be still robust and gradually further accelerating wage growth over the last year in business sector (2022Q1: 8.1%, 2022Q2: 4.4%, 2022Q3: 7.3%, 2022Q4: 8.9%), industry (1Q2022: 6.9%; 2Q2022: 7.9%; 3Q2022: 7.7%; 4Q2022: 9.4%; January 2023: 11.9%) and construction (1Q2022: 6.7%; 2Q2022: 7.9%; 3Q2022: 8.6%; 4Q2022: 9.0%; January 2023: 14.9%). Also, wage payments for January and February 2023 point to a further acceleration of overall wage growth to 10%.
Hong Kong	low	For the expected 2023 headline inflation rate, we adopt the latest market Consensus Forecasts, which average 2.1%. Regarding the minimum wage, the statutory rate is subject to a two-year review cycle and the current level is HK\$37.5 per hour, which hasn't changed since the last revision effective 1 May 2019 (and hence "not applicable" above). Recently, the Minimum Wage Commission has proposed raising the statutory minimum wage in Hong Kong from HK\$37.5 to HK\$40 per hour. The 6.7 percent increase is expected to come into force in May 2023 upon the Government's approval and is higher than the expected headline inflation rate of 2.1% by the market. Note: Headline inflation rate in Hong Kong could be quite volatile due to the effects of Hong Kong Government's one-off relief measures (eg public housing rental waiver, electricity charges allowance). As such, one can also refer to the official underlying inflation rate, which nets out the impact of these relief measures, for the trend of price changes.
Hungary	low	There is no sign of a wage-price spiral in Hungary yet, which is confirmed by the largest HR services companies. Wage dynamics are high because of the one-off effect of the huge minimum wage increase in the beginning of the year and the historically tight labour market. Wage dynamics are expected to slow down next year.
India	low	The data on wages in India relate to average rural wages for men for all-India covering all the agricultural and non-agricultural occupations released by the Labour Bureau, Government of India. Comparison of rural wage inflation with CPI Rural inflation has been considered above. References: 1. Reserve Bank of India, Monetary Policy Report, September 2022 (Box II.2. "An Examination of the Rural Prices and Wages Dynamics in India.""). 2. Kundu, S. (2019). Rural wage dynamics in India: What role does inflation play. RBI Occasional Paper, 40, 51-84.
Indonesia	low	Average wages rise in Feb'22: 1,12%. Average minimum wages rise 2022: 1,09%. 2022 Inflation (as of Oct'22): 5,71%.
Israel	average	Inflation does not seem to be a major factor in the labour market as of yet, provided that it will be contained at the current level and decelerate in 2023. The risk is that the formation of a new government, against the backdrop of a strong fiscal position and the lag of wages in the public sector relative to the business sector- due to temporary institutional factors - will result in substantial public sector wage increases that will ignite a wage spiral. A significant minimum wage increase is also expected in the beginning of 2023, unless the default legislative mechanism is adapted.
Korea	low	
Malaysia	low	For 2022, we utilised YTD average for CPI inflation (January to September, CPI inflation averaged 3.3%), and average wages for the private sector (1Q-3Q average growth: 2.9% per worker). Data covers the Services and Manufacturing sectors (3Q 2022: 3.5% and 1.9% respectively). For 2023, we utilised the mid-point forecast range for CPI inflation from the Ministry of Finance: 2.8-3.3%. Average wage outlook are internal projections.

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Table 2

	How high is the risk of a wage-price spiral?	Use the space below if you want to add any qualification or comment on the above responses:
Peru	very low	Annual inflation to October was 8.28 percent, mainly in the food group (11.3 percent). This increase in inflation has mainly affected households in the lowest income quintiles, which dedicate a larger proportion of their income to spending on food. At the same time, this group of the population mainly registers for informal jobs and does not benefit from the increase in the minimum wage.
Philippines	low	<p>The risk of a wage-price spiral is low for the Philippines given that inflation expectations remained firmly within target in the medium-term. At the same time, regulation on annual wage adjustment will help prevent wage-price spiral. While the average regional wage increases in 2022 was higher-than-expected, the last wage adjustment took place in 2020 for most of the regions.</p> <p>The estimated national minimum wage increased by 13.1 percent in 2022. January to September 2022 headline inflation rose to 5.1 percent. The BSP's latest inflation forecasts of 5.6 percent for 2022, 4.1 percent for 2023 and 3.0 percent for 2024 incorporate adjustments in minimum wage that are consistent with the country's labour productivity growth and historical wage increases.</p> <p>Other factors that contain the risk of a wage-price spiral include the underlying shocks to inflation that mostly originate outside of the labour market, falling real wages, and aggressively tightening monetary policy. In the case of the Philippines, the BSP raised its policy rate to 4.25 percent or by 225 bps since May 2022. The policy actions are expected to contain domestic inflation pressures and manage inflation expectations.</p>
Poland	low	
South Africa	low	<p>The latest year over year growth in the average nominal wage was 3.6% in the 2022Q2, while average CPI inflation was 6.6% year on year in 2022Q2.</p> <p>Expected wage inflation is 6.7% in 2023, whereas CPI inflation is expected to be 5.3%.</p> <p>In 2022 the minimum wage increased by 6.9% year on year, while CPI inflation is expected to be 6.5%.</p> <p>The minimum wage is a recent development in the South African labour market, with its enactment into law having come into effect in 2019, so it is still too early to determine whether a strong relationship exists between CPI inflation and the minimum wage.</p> <p>The conditions that have driven concerns of a wage-price spiral in the US and parts of Europe such as an elevated number of vacancies relative to job seekers and significantly higher wage growth as a result of the labour market tightness are not of much concern in the South African labour market, which experiences considerable slack in low-skilled work and relative tightness in high-skilled work. The nuances in the South African labour market are such that wage increases are determined more by labour union strength than they are by tightness or slackness particularly in the public sector, mining and manufacturing. In addition to this, the drivers of inflation are from outside the labour market (food and fuel being most influential), real wages are actually declining which is helping to reduce price pressures, and the SARB is on progressive monetary policy tightening. These factors should minimize the probability of a wage-price spiral unfolding in the near and medium-term.</p>
Thailand	low	The risk of a wage-price spiral is expected to be minimal due to low share of wage earners, flexibility of labour market and weak labour market institutions. During the first three quarters of 2022, headline inflation had averaged 6.2 %YoY and wage growth was 2.1 %YoY. However, in Q4 of 2022 minimum wage has increased at 5%, resulting in the continued wage growth in the following year. In 2023, wage growth will also be higher than headline inflation, which is expected to decrease to 2.6% due to falling global oil prices and gradual easing of supply chain bottlenecks.
Türkiye	average	The decline in real unit wages, which started in the last quarter of 2021, continues in 2022. In this period, both hours worked and value added increased. However, as nominal wage increases remained below inflation, real wages declined. In the first quarter of 2022, according to seasonally adjusted series, total value added per hour worked increased by 9.5% compared to the previous quarter, while real wage payments decreased by 5.7%. On the other hand, in tandem with 30% additional increase in minimum wage in the second half of 2022, average wages show a moderate increase in real terms in July 2022.
Vietnam	high	

Source: EMDGM 2023 Questionnaire

## Question 2

Table 2

	What is your current assessment of the labour market in your country, overall and by segment?						Use the space below if you want to add any qualification or comment on the above responses:
	overall labour market	agricultural sector	manufacturing sector	service sector	for high-skill workers	for low-skill workers	
Argentina	strong	weak	strong	neutral	strong	neutral	The real wage has recently shown a very flexible development, encouraging a strong expansion of the employment level. Most of the employment creation was focused in the informal sector, and low skilled workers. The main sectors of economic activity (manufacturing, trade and construction) are already in high levels of employment, while services producers' employment levels are near the pre-pandemic levels.
Brazil	strong						<p>Our assessment is presented only for the overall labour market. Currently the unemployment rate is below the historical average (since 1999, using data from more than one survey). The employment level (ratio between the number of employed people and working age population) is above historical averages. Other indicators point in the same direction (see boxes in the recent editions of the Inflation Report: <a href="https://www.bcb.gov.br/content/ri/inflationreport/202209/ri202209b9i.pdf">https://www.bcb.gov.br/content/ri/inflationreport/202209/ri202209b9i.pdf</a> and <a href="https://www.bcb.gov.br/content/ri/inflationreport/202203/ri202203b4i.pdf">https://www.bcb.gov.br/content/ri/inflationreport/202203/ri202203b4i.pdf</a>).</p> <p>Despite a strong labour market, real wages remain below pre-pandemic levels (but are increasing).</p> <p>Since there is mobility of workers among sectors in the economy, it is not clear if they should have different levels of over/underheating. In meeting with representants of the non-financial sector of the economy (business associations, firm executives, and firm owners), Anecdotes suggest shortages for some types of skilled workers, principally in IT. But this seems a structural issue. In addition, employers in the agricultural sector complained about the difficulties in hiring.</p>
Chile	weak	neutral	weak	neutral	weak	weak	The labour market tightness that we observed during 2021 and the beginning of 2022 has significantly loosened. Total employment stagnates or marginally decreases, and real wages decrease in year on year and quarter on quarter comparisons. This picture is very also when considering sectorial figures; except for mining, real wages are falling in all sectors. According to our expectations of the last Monetary Policy Report, we should be seeing somewhat higher real wages and lower employment; thus, the adjustment in the labour market is happening more through prices than quantities.
China	neutral	neutral	neutral	neutral	neutral	neutral	In 2022, China's surveyed unemployment rate fluctuated, due to multiple unexpected factors, such as the pandemic, but the overall employment situation has remained stable. With the package of economic stabilization policies and measures taking effect, the optimization of Covid-19 prevention and control measures, manufacturing enterprises gradually resuming production, and the significant improvement in hospitality, catering, tourism and other service industries, China's surveyed unemployment rate stood at 5.5% in December 2022, and averaged at 5.6% for the whole year.

## Question 2

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	What is your current assessment of the labour market in your country, overall and by segment?						Use the space below if you want to add any qualification or comment on the above responses:
	overall labour market	agricultural sector	manufacturing sector	service sector	for high-skill workers	for low-skill workers	
Colombia	strong	weak	neutral	strong	strong	neutral	The most recent labour market data from the household survey show that overall employment grew at an annual rate of 8.7% in August. This means that the level of total employment is 4 pp above the pre-pandemic levels. The sectors that contributed the most to the annual expansion of employment were services and commerce (6.3 pp out of 8.7 pp), followed by manufacturing and construction (1.7 pp out of 8.7 pp). Instead, agriculture contributed 0.5 pp, and was the only sector whose employment shrank in monthly terms during the last months. Regarding demographic characteristics, the employment growth has been more dynamic for skilled workers, particularly, those with technical and technological education.
Czech Republic	overheated	strong	overheated	strong	strong	overheated	The demand for labour remains quite solid in the Czech Republic. As of February 2023, there were about 280 thousand vacancies for as many unemployed people registered in the Czech employment offices. There have been no significant dismissals over the last two years. The Czech labour market remains strong despite the Covid pandemic and energy crises caused by the Russian invasion. The immigration wave induced by the invasion has been absorbed fully into the labour market with no significant effect on its status. The number of employed Ukrainian refugees in the second half of 2022 was around one hundred thousand.
Hong Kong	weak		weak	weak	weak	weak	For most major industries and occupations, the unemployment rates declined in recent months and the number of employed persons began to increase again. This recovery is supported by the continued revival of domestic economic activities amid various policy support measures (eg Government's Consumption Voucher Scheme). Yet in general labour market conditions were still weaker than the pre-pandemic levels (and hence the ""weak"" assessment above), given various external challenges including the worsened global economic prospects. Note: The agricultural sector assessment is left blank as the relevant labour market data are not available in Hong Kong. That said, the local agricultural sector is very small, representing less than 1% of GDP in Hong Kong.
Hungary	strong	neutral	strong	strong	overheated	strong	The Hungarian labour market remained resilient throughout the COVID-crisis and approached full employment again during 2022. Recently, the labour market has been strong, however, early signs of a slowdown has appeared.
India							The official labour market data, ie the periodic Labour Force Survey Report (PLFS) by Government of India (GOI) comes with a lag of one year. The latest annual PLFS 2021-22 which covers both rural and urban areas shows improvement in unemployment rate, labour force participation rate and employment rate compared to pre-pandemic period. Key results of latest PLFS quarterly bulletin suggest strengthening of employment conditions in urban area in Q3:2022-23. Labour force participation rate (LFPR) at 48.2 per cent was the highest in the series, slightly higher than 48.1 per cent registered just before the pandemic (Q4:2019-20).

## Question 2

Table 2

	What is your current assessment of the labour market in your country, overall and by segment?						Use the space below if you want to add any qualification or comment on the above responses:
	overall labour market	agricultural sector	manufacturing sector	service sector	for high-skill workers	for low-skill workers	
Indonesia	neutral	neutral	neutral	strong	strong	neutral	The labour market is recovering with no sign of overheating.
Israel	strong	neutral	strong	strong	overheated	strong	Overheating is relevant predominantly to the high-tech sector.
Korea	strong	strong	strong	strong	strong	strong	The overall labour market of South Korea is strong. However, the number of persons employed in face-to-face service sectors still remained sluggish, such as food services and accommodation, wholesale and retail trade, and personal services, where the negative effects of the pandemic were most concentrated.
Malaysia	neutral	strong	neutral	neutral	neutral	strong	Responses above reflect qualitative judgments on slack/tightness or under/overheating in the labour market, based on data on labour supply and demand conditions as well as wage growth. In the Malaysian labour market, improvements in employment have been forthcoming since 4Q 2021, where labour demand increased following the reopening of the economy. This was met by forthcoming labour supply as labour force participation rate rebounded above pre-pandemic levels. The improvements in wage growth seen since 2Q 2022 in particular is assessed to largely reflect the pickup in economic activity, and to a smaller extent the minimum wage hike effective May 2022. Wage developments are not assessed to further fuel inflation thus far. However, there has been significant shortage in the supply of labour, especially in the agriculture sector following departure of migrant workers since the onset of the pandemic. This has led to some wage pressure seen in the low skilled segment. However, this increase in wages was not sufficient to attract local workers given the nature of jobs in the sector. As a result, agriculture production has been declining since 2020.
Peru	neutral	strong	strong	under-heated	neutral	neutral	In the second quarter of 2022, the labor participation rate exceeded the level observed before the pandemic. Meanwhile, private formal employment recovered its pre-pandemic level since the fourth quarter of 2021. It should be noted that after the pandemic began, there was significant growth in employment in the agricultural sector since it was not affected by sanitary restrictions. As of this year, this sector has returned to normal employment.



## Question 2

Table 2

	What is your current assessment of the labour market in your country, overall and by segment?						Use the space below if you want to add any qualification or comment on the above responses:
	overall labour market	agricultural sector	manufacturing sector	service sector	for high-skill workers	for low-skill workers	
Philippines	neutral	neutral	weak	strong	neutral	strong	<p>Labour market conditions have improved about two years since the onset of the pandemic with the gradual re-opening of the economy. Employment and unemployment rates have reached pre-pandemic levels, while labour force participation rate exceeded the pre-pandemic level. Moreover, overall employment gains have been consistently recorded in the last thirteen months. Among major sectors, services recorded a strong recovery with consistent employment gains and jobs growth for the past year, while Agriculture registered employment gains with moderate jobs growth. On the other hand, employment conditions in Manufacturing have not been favorable as recovery in the sector continues to be weighed down by economic concerns, ie high inflation and depreciation of the Philippine peso.</p> <p>Official data on high-skill workers and low-skill workers are not available. Nonetheless, low-skill workers, as proxied by elementary occupation workers, have registered sustained employment gains. Meanwhile, signs of recovery for high-skill workers are mixed given that managerial jobs continued to register job losses while other skilled occupations such as clerical support workers, service and sales workers, and craft and related trades workers have registered employment gains.</p>
Poland	strong	neutral	weak	strong	strong	neutral	<p>Labour market conditions remain favorable in Poland. It is reflected in a record low unemployment, high level of employment and a strong wage dynamic. However, some weakening of labour demand has been already noticed and expected in the following quarters. The overall labour market assessment needs also to consider a relatively high level of uncertainty now resulting from the war in Ukraine, as well as all socio-economic consequences of this war (including the energy crisis).</p>
South Africa	weak	weak	weak	neutral	strong	weak	<p>We used the following understanding of each of the assessment choices made</p> <p>Weak = labour demand is generally low relative to supply and/or has been declining in recent years with no real structural changes that give prospects of an upward shift in demand for labour.</p> <p>Strong = labour demand is high relative to supply, or unemployment is relatively low.</p>
Thailand	strong	strong	strong	neutral	strong	weak	<p>We assess labour market by comparing the current (Q3 of 2022) level of employment and wage rates to that of the pre-pandemic level. At sectoral level, manufacturing sector has recovered faster than other sectors, as shown by number of employees and real wage which have reached the pre-pandemic level. On the other hand, despite being minimally affected by the pandemic, agricultural sector has currently been facing higher cost due to the Russia-Ukraine conflict. Tourism-related sectors, which employ a large number of low-skilled workers, have still lagged behind due to the very low number of foreign tourists comparing to the pre-pandemic level.</p>

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	What is your current assessment of the labour market in your country, overall and by segment?						Use the space below if you want to add any qualification or comment on the above responses:
	overall labour market	agricultural sector	manufacturing sector	service sector	for high-skill workers	for low-skill workers	
Türkiye	strong	neutral	strong	strong	strong	strong	In tandem with economic activity, labour market shows a strong outlook in Türkiye. As of the first quarter of 2022, Türkiye outperforms all other OECD countries in terms of employment increase compared to the pre-pandemic levels. In August 2022, seasonally adjusted employment increases by 3.7% (1.1 million people) since the beginning of the year. Despite the increases in labour force participation rates, unemployment rates are declining. In August 2022, seasonally adjusted unemployment rate declined to 9.6%, which is the lowest level since April 2014.
Vietnam	strong	strong	strong	strong	strong	neutral	

Source: EMDGM 2023 Questionnaire

	Do you expect the pandemic or any of the policies enacted during it to have any lasting impact on labour market dynamics or wages?
Argentina	Monetary policy management during the pandemic required a major expansion of liquidity. Given the previous existence of inertial components in the inflationary process, expansive monetary policies have indirectly impacted on an inflation inertia that has stood at high levels. Other factors have also triggered inflation dynamics, such as, the influence of international prices, which have been more related to the price of energy and the cost of global manufactures, the recovery observed in the marketing margins in some sectors and the rearrangement of relative prices in private services after the reopening of activities due to the improved epidemiological situation and, to a lesser extent, the wage adjustments resulting from the collective bargaining agreements.
Brazil	We still do not have a definite answer to this question. Some new patterns might have emerged and become permanent. For example, home office adoption for certain careers (particularly for high income earners). However, its macroeconomic impact is unclear. In addition, in meeting with people from the non-financial sector of the economy (business associations, firm executives, and firm owners), people from the tourism and lodging sector stated that after the pandemic previous employees in the sector are not returning as expected and many of them complain about the work schedules (night and weekend shifts). This may also reflect a strong labour market.
Chile	The participation rate has stagnated recently and is still below its pre-pandemic level, lagging behind other economies. This is mainly linked to the delayed recovery in the participation among workers under 25 and over 54 years, in a context in which women's participation continues to lag well behind men (49.9% and 70.1%, respectively). According to NSI information, among the reasons for not participating, family and personal responsibilities, studying, and retirement are at the top of the list (September 2022, Monetary Policy Report, p. 18). It will not be a surprise if those age segments' participation rates do not return to pre-pandemic levels over the next year.
China	Following the outbreak of Covid-19 in 2020, China quickly put the pandemic under control, and tried hard to lessen the impact on the labour market and the economy. Monetary policy has remained accommodative, responding strongly to the shocks from the pandemic and other unexpected factors to support the economy, while taking into account internal and external balances to ensure support from the monetary policy is sustainable. China optimized Covid-19 prevention and control measures at the end of last year and the beginning of this year. Now the infection rate has passed the peak, with the order of production and life quickly restored, without enduring disruptions to labour supply. After the Chinese New Year in 2023, enterprises resumed operations and employees returned to work earlier than in previous years, so labour supply and demand remained stable. The 20th National Congress of the Communist Party of China has made clear to prioritize employment, and the Central Economic Work Conference stressed the need to make efforts to stabilize employment by promoting employment, especially for college graduates, and strengthening protection of workers' rights and interests. These would help stabilize the job market.
Colombia	<p>Studies done by the technical staff of the Central Bank suggest that the pandemic could have enhanced automation. During the pandemic, job openings and salaried employment fell more drastically in occupations with higher potential for automation. These effects are sizable and persistent and are mostly driven by the changes in the relative labour demand from sectors that were affected by the mobility restrictions imposed by the government.</p> <p>In a country characterized by high levels of unemployment and informality as Colombia, this automation effect could produce a structural mismatch between the demand of occupations where new labour skills are required and the skills currently offered in the labour market, inducing thus a negative effect on the long-term unemployment rate.</p> <p>On the other hand, there was an emergency relief program aimed to subsidize employment of small firms and those most affected by the pandemic (PAEF, by its acronym in Spanish). Preliminary evidence from a work in progress of the members of the technical staff points out to significant effects on employment of the firms targeted by the program.</p> <p>Reference:            Bonilla, L.; Flórez, Luz A.; Hermida, D.; Lasso-Valderrama, F.; Morales, L.; Ospina, J and J. Pulido (2022). ""Is the Covid-19 Pandemic Fast-Tracking Automation in Developing Countries? Evidence from Colombia,"" Borradores de Economía 1209, Banco de la República de Colombia.</p>
Czech Republic	Not anymore. During the pandemics there were significant disruptions into wage dynamics and labour force caused by government policies associated with pandemic business closures, but all those effects have already faded away.

Do you expect the pandemic or any of the policies enacted during it to have any lasting impact on labour market dynamics or wages?	
Hong Kong	Hong Kong's economy and labour market have been adversely affected by the COVID-19 pandemic and the accompanying restrictive measures. In particular, the impact of the pandemic on the labour market were highly uneven, with elevated unemployment rates in the more affected sectors (eg inbound tourism). Meanwhile, we have observed some signs of employment shifting towards more "high-end" service sectors, especially the financial industry and those witnessing greater use of digital technologies. There is also some evidence of companies upskilling their workforce by hiring new graduates with higher education levels during the pandemic. Sectoral data also reveal real wage increases in the "high-end" industries, while in the lower-end real wages have remained roughly stable or have decreased since the pandemic. Having said that, it remains to be seen whether the pandemic would have any "lasting" impact on the labour market dynamics or wages, especially considering the fact that domestic economic activities are gradually normalizing. As an example, visitors to Hong Kong have risen visibly, albeit from a low base, after the Government further adjusted the quarantine arrangements for inbound visitors in September this year. This will be conducive to the recovery of employment and wages in tourism-related sectors.
Hungary	Not being able to work in sectors (such as tourism) during the pandemic made workers shift to other sectors, such as IT and communication and other services, which now enhances the labour shortage in certain sectors. In the meantime, the spread of home-office possibilities allows for more people to be able to work.
India	The average Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) wage rate was revised by the Government of India with effect from April 1, 2020, by Rs.20 over the wage rate of 2019-20.
Indonesia	As the case for Indonesia, the potential for scarring during the current pandemic period is significantly lower than during the Asian Financial Crisis. This is in line with the relatively faster economic recovery, which has boosted improvement in labour demand as reflected by among others. The recovery is reflected in the decrease of the unemployment rate to 5,83% in February 2022 from the spike up at 7,07% in August 2020, although it was still higher than the pre-pandemic level at 4,94% in February 2020. The recovery is also reflected in the sectoral labour absorption in line with the reopening of the economy, support of fiscal and monetary stimulus, and current export. The recovery is also supported by a better structure of the labour market. To mitigate the scarring risk and promote economic recovery, Bank Indonesia and Government strengthen the national economic policy synergy to maintain macroeconomic and financial system stability, while reviving lending to businesses in priority sectors to stimulate economic growth and exports, while increasing economic and financial inclusion. Several structural avenues to mitigate the scarring risk are labour reallocation to solve persistent unemployment and create new capabilities, capital reallocation to break down the stagnation of production and operation and resume investment for productivity, create an innovative environment, and digital inclusion
Korea	In spite of many concerns about the scarring effects of the pandemic, the current Korean labour market has mostly recovered to the pre-pandemic level. However, we are consistently monitoring the labour market with the possibility that there may be structural changes (eg the effect of acceleration of digital transformation on employment) due to the pandemic.
Malaysia	We do not expect policies enacted during the pandemic to have lasting impact on the labour market. Policy support has been withdrawn and progressively becoming more targeted since 2021. Nevertheless, the pandemic has accelerated technological adoption, digitalization, and automation, which may result in lower need for labour in some low-skilled and mid-skilled segments in the medium to long term, and structurally lower wage pressures for these segments. On the other hand, demand for high skilled workers would increase. Wages for these high-skilled workers should also adjust higher gradually over time, to commensurate with their higher productivity. There could be upward pressure on wages for this segment if the supply of high-skilled workers is slow to adjust to higher demand.
Peru	As a result of the pandemic, fewer formal jobs have been generated, which is why growth in the informality rate in the labor market is to be expected in the years to come. Additionally, since labor participation in Peru is high and income in real terms has not recovered, more household members are expected to participate in the informal labor market to offset the drop in income.

Do you expect the pandemic or any of the policies enacted during it to have any lasting impact on labour market dynamics or wages?

Philippines	<p>For minimum wages, there was more than 2 years lag since the last wage order was approved by the regional wage boards due to the pandemic. However, we see that the current minimum wage setting, where no new wage order may be issued within a period of 12 months from effectivity of the current wage order, limits any undue risk to the wage-price dynamics in the country.</p> <p>At the same time, the fiscal response concerning wages during the pandemic were mostly one-time financial support to small businesses, private sector employees that have adopted flexible working arrangements or endure temporary closure, and displaced land- and sea-based Filipino workers.</p> <p>In terms of labour market dynamics, there was an uneven pace of recovery across types of jobs available in the labour market about two years since the onset of the pandemic. A predominant share of jobs created post-pandemic are elementary occupations and self-employed workers without any paid employee, which are considered mostly as vulnerable employment. On the other hand, hiring of skilled and salaried occupations such as managerial jobs continued to contract. This shift in employment composition reflected how workers and firms have adapted to the changes in work and business environment brought about by the pandemic. The contraction in employment of managers coincides with lower labour demand from firms during the period due to business closures or firms operating only at partial capacity, while the growth in self-employed workers may have resulted from laid-off and unemployed workers putting up their own micro-businesses or one-person enterprises to earn income. However, we expect that this change in employment composition would persist in the short to medium term given current unfavorable macroeconomic conditions. For instance, demand for managers hinges on the strength of economic recovery as well as positive business sector sentiment, which now is hampered by concerns on high inflation and depreciation of the peso, among others.</p>
Poland	<p>The anti-crisis measures targeted to protect labour market from the negative consequences of the pandemic, especially to avoid the surge in unemployment, were temporary and their effect on economy faded away gradually throughout 2020 and 2021.</p> <p>However, since the beginning of the pandemic, a number of amendments to the law dedicated to foreigners have come into force in Poland. Their aim was to extend the legal stay of a foreigner staying in Poland and extend the validity of legal work entitlements, ie work permits, seasonal work permits as well as work based on declarations on entrusting work to a foreigner. The government has been continuing its efforts to facilitate immigrants' activity in Poland as it recently legislated amendment to the Act on Foreigners. The aim of this new law was to facilitate the procedures of granting the residence permits and employing the foreigners. The most important modification was the extension of the validity period for declarations on entrusting work to a foreigner (granted to citizens of 6 countries: Armenia, Belarus, Georgia, Moldova, Russia and Ukraine) from 6 to 24 months.</p> <p>After the unprovoked Russian aggression against Ukraine some new regulations have been advanced to deal with the massive influx of Ukrainian refugees. Pursuant to a special law, Ukrainian refugees are allowed to legally remain in Poland for 18 months since 24 February 2022 and can apply for PESEL (Polish National Identification Number), which grants, inter alia, the right to work and start a business in Poland without a special work permit and to receive social assistance including unemployment benefits.</p> <p>The observed evolution of legislation promotes the settlement immigration by granting longer stay permits and simplifying work legalisation procedures, which should allow for more stable work for current immigrants and act as an attracting factor for the new ones. A growing share of permanent immigrants would, in turn, favour a more effective labour force allocation in the economy by making it worthwhile for employers to improve their foreign staff skills. This should contribute to an increase in labour productivity and result in a more intensive job creation.</p> <p>During the pandemic, the prevalence of remote work has increased. In response to this trend, a package of changes in Labour Code is being proceeded by Polish parliament at the moment and is intended to come into force by the end of 2022. New regulations address such topics as teleworking, more elastic working arrangements for parents and securing more stable working conditions for young workers i.a. by limiting temporary employment. The proposed labour code amendments should support the work-family life reconciliation which should foster higher labour force participation and improve general well-being. The planned changes are likely to increase labour supply both at the intensive and extensive margin. Teleworking is expected to encourage entering labour market by young, still in education, disabled and affected by traffic exclusion, especially those in urban areas.</p>

## Question 3

Table 3

Do you expect the pandemic or any of the policies enacted during it to have any lasting impact on labour market dynamics or wages?	
South Africa	<p>A trend that has emerged in patterns of employment in the post-pandemic recovery phase is that of rapid growth in part-time employment while full-time employment has grown slower. This may be a reflection of hesitance by employers to employ on a full-time basis given the prevailing high uncertainty.</p> <p>The pandemic also brought about significant changes in how people work with more organisations allowing for work from home and hybrid arrangements. The greater flexibility of these new arrangements is likely to remain a feature of the labour market. This flexibility may partly explain the increase in part-time hires during the recovery.</p> <p>During the pandemic the government implemented the Covid-19 Temporary Employer-Employee Relief Scheme (TERS) which subsidised the wage bill to qualifying employers affected by the COVID-19 lockdowns. Although there is little research into the impact of this policy on the labour market, there is some evidence that it enhanced job retention during the most stringent lockdown period (Köhler, Hill and Bhorat (2022))* , suggesting the impacts were temporary.</p> <p>*Köhler, T., Hill, R. &amp; Bhorat, H. (2022) The effect of wage subsidies on job retention: Evidence from South Africa during the COVID-19 pandemic. WIDER Working Paper 2022/114. Helsinki: UNU-WIDER."</p>
Thailand	Human capital loss is the main impact that the pandemic could leave lasting scars in the Thai labour market. This could happen in the shifting of employment from nonfarm formal sector to agricultural sector and self-employed, through lower productivity of the informal sector businesses and mismatch between new demanding skills and their previously trained skills.
Türkiye	Due to pandemic, job retention schemes were extended to save jobs and protect households against income losses. Termination of job contracts were prohibited until June 2021. Employers were allowed to send their workers on unpaid leave. The employees on unpaid leave were also provided daily cash benefit. Eligibility requirements for the short-time work allowance (STWA) were eased and duration of STWA was extended by 8 months. On average, 4.2 million people benefited from job retention schemes, which corresponds to 28.6% of formal employees, during the pandemic. This rate is slightly above the job retention rate in OECD countries, on average. These policies prevented job losses and contributed to the strong labour market recovery afterwards.
Vietnam	There is currently no plan to increase the regional minimum wage in 2023, but on 11/11/2022, the National Assembly passed a Resolution on the state budget estimate for 2023. Accordingly, from 1/7/2023 base salary will be increased by 20.8% compared to the current base salary (equivalent to an increase from 1.49 million VND/month to 1.8 million VND/month). The base salary growth in 2023 is 3 times larger the growth of the last base salary change (7.2% in 2019). Therefore, it is expected that the base salary increases in 2023 will have an impact of about 0.6 ppt on inflation in 2023.

Source: EMDGM 2023 Questionnaire

## Question 4

Table 4

	What fraction of workers is informal?			What fraction of wages are covered by collective wage agreements?			What fraction of wages have explicit indexation clauses?			Use the space below if you want to add any qualification or comment on the above responses:			
	% of total workers			% of total employment			% of total sales			% of total workers			
	2000	2019	2022	2000	2019	2022	2000	2019	2022	2000	2019	2022	
Argentina	36.60	22.80	23.40		27.40	27.70							There has been a shortening in the lengths of wage contracts, which evolved from an annual basis to a 6-months one. There is anecdotal evidence of wage indexation, but it's not a generalized trend. Despite the high levels of inflation, the government avoided the inclusion of indexation clauses in the wage bargaining process.
Brazil		40.70	39.00										Informality according to the first criteria in the attached Excel file (DadosMT_BIS.xlsx)
Chile	39.30	28.47	27.04	14.80	20.40						34.60		Regarding government actions on wage indexation, annual or other indexation timing is not mandatory in Chilean law; only the public sector sets annual adjustments that are discussed and approved by the parliament. Recently, there have not been specific government measures to affect wage indexation. Sources: First column: 39.30=Perticar� and Celhay (2000); 28.47 INE, year average of the labor informality rate; 27.04=INE, Average of the labor informality rate from January to September. The third column (corresponds to "Collective Bargaining Coverage"): OECD <a href="https://stats.oecd.org/Index.aspx?DataSetCode=TUD">https://stats.oecd.org/Index.aspx?DataSetCode=TUD</a> (14.80= the year 2009; 20.40= the year 2018; year 2022= NA). Fourth column: From questions b1 and b2 ENCLA 2019, Ministry of labor, Chile. Considers the percentage of workers that received an adjustment of their salary, but it was not due to collective negotiation. So the most likely option is that is due to indexation clauses.

## Question 4

Table 4

	What fraction of workers is informal?			What fraction of wages are covered by collective wage agreements?			What fraction of wages have explicit indexation clauses?			Use the space below if you want to add any qualification or comment on the above responses:		
	% of total workers			% of total employment			% of total sales			% of total workers		
	2000	2019	2022	2000	2019	2022	2000	2019	2022	2000	2019	2022
Colombia		46.80	44.72							24.10	24.90	<p>The period between 2010 and 2019 was characterized by a continuous decline in the informality rate. Some studies have attributed this behavior to the decrease in non-wage labor costs, in particular to the labor reform in 2013 (see response 5). During the pandemic period, informality rebounded, but, with the economic recovery, it decreased again and is currently at historical lows.</p> <p>A note about the informality measure: The informality measurement is only available for urban areas, and the definition used in the table stands for a firm-size approach (salaried employees in firms with less than 5 employees and self-employed with no college). Given that a new sample frame for the household survey was introduced as of 2021, the numbers reported in the table come from two different versions of the household survey.</p> <p>Regarding salary indexation clauses, in Colombia, the mechanism with the greatest coverage is the MW. This variable is adjusted in January of each year and salaried employees cannot legally earn less than the MW. Therefore, wages must be increased for those workers with a wage at the old MW or below the new MW. The National Agreement &amp; Salary Policy Committee determines the extent of the adjustment, mainly on the basis of the observed inflation and productivity growth. The table reports the number of salaried workers earning 1 MW as a share of total employment. Thus, the number reported would be a lower bound of the fraction of wages that have explicit indexation clauses. Other mechanisms of salary indexation include collective labor agreements between unions and firms; however, there is no data available about the number of employees covered by these types of arrangements.</p>
Czech Republic												<p>Those kinds of data are unfortunately unavailable for the Czech National Bank. We know, out of small sample that comes from external statistical survey, that only about 2 % of collective agreements had in 2020 terms for real wage growth and that this share has been fairly stable over the past 6 years.</p> <p>Percentage of employees covered by a collective agreement is 35% (latest available data for 2019, OECD/AIAS ICTWSS database).</p> <p>There is no hard evidence about informal economy in the Czech Republic and other shares requested above especially when it comes to time series. There are only several estimations of the ratio to official GDP (ranging between 6 to 12 percent), but there is no data about employment in informal sector. The estimations (eg Eurobarometr 2019) give similar numbers for employment as in the case of GDP.</p>



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	% of total workers			% of total employment			% of total sales			% of total workers			
	2000	2019	2022	2000	2019	2022	2000	2019	2022	2000	2019	2022	
Hong Kong													Notes: As mentioned in our reply for "A: Data" (see excel file), Hong Kong does not have data on the "informal sector". Additionally, data on collective wage agreements and explicit wage indexation are not available in Hong Kong. Consequently, the above section is left blank. In general, Hong Kong's labour market is widely regarded as flexible, and the said practices are not prevalent.
Hungary													We have no data for informal employment.
India		68.40	71.80										Periodic Labour Force Survey Report (PLFS) provides information on informal sector for industry groups/divisions 014, 016, 017, 02 and 03 and the industry divisions 05-99 (referred to as the non-agriculture sector and no data for the all workers). During 2018-19, 68.4 per cent of workers in the above category fell under informal sector, which increased to 71.8 during 2021-22.
Indonesia	60.47	55.89	59.97										Based on Sakernas February 2022, August 2020, and August 2019.
Israel				60.00	50.00	48.00	70.00	55.00	52.00	70.00	0.00	0.00	There are no reasonable estimates of informality and its magnitude. Figures on collective bargaining and indexation are speculative and depend on definitions. Collective bargaining includes here factory/industry bargaining - not necessarily national negotiations.
Korea													<ol style="list-style-type: none"><li>1. There are no official statistics on the informal economy in South Korea.</li><li>2. The bargaining system of South Korea is highly decentralized. Most bargaining takes place at enterprise or company level. In most companies of South Korea, employers set employees' wages based on their performance and sales conditions.</li><li>3. In South Korea, wage indexation is not active and there are no official statistics on it.</li></ol>
Malaysia		8.30			0.40								Informal workers: Malaysia's statistical authorities (Department of Statistics Malaysia, DOSM) surveys informal workers every 2 years, with the first available data point referring to 2013 (9.8% of employment). Pre-pandemic (and latest available data) was for 2019 reference period.
Peru	75.30	72.70	76.80	3.90	3.40	3.70							One factor to consider is the source of information with which the data on formal employment in Peru are constructed. Household surveys are not representative of formal employment. Administrative data on formal employment register growth closely linked to increased economic activity. This underestimation of formal employment produces an excessively higher rate of informality.

## Question 4

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	% of total workers			% of total employment			% of total sales			% of total workers		
	2000	2019	2022	2000	2019	2022	2000	2019	2022	2000	2019	2022
Philippines										Official data on the above-cited indicators namely fraction of informal workers to total employment, fraction of wages covered by collective wage agreements, and fraction of wages that have explicit indexation clauses, are not available. Nonetheless, the informal sector provides a bigger share of workers to total employment compared to the formal sector. Based on estimates of the International Labor Organization from 2008 to 2017, workers in the informal economy in the Philippines comprise an average of about 56 percent of total employment. The share of informal sector workers to total employment has been broadly steady throughout 2008 to 2017 ranging from 54 percent to 57 percent. Of the total informal workers, 51 percent are self-employed without paid employee, 31 percent are wage and salary workers in precarious employment, and the rest are unpaid family workers.		
Poland		2.30	1.10							The share of unwritten contracts in total employment (Polish LFS) has been used as a proxy of informal work. The percentage of informal work has decreased as a consequence of the pandemic outbreak. Informal workers appeared to be most vulnerable to labour market adjustments in the face of the shock. Both collective wage agreements and wage indexation mechanisms (esp. automatic ones) have rarely been used among enterprises and played a minor role. Collective wage agreements have occurred only in selected industries such as mining or electricity. According to Eurostat data (Survey of Earnings Structure) only 2.1% workers were participants of a collective agreement on national or inteconfederal level in 2018, and more than 2/3 did not participate in any collective pay agreement. According to NBP Enterprise Survey (Oct 2022) the vast majority of companies (92.3%) do not have a system of wage indexation by inflation, ie regular adjustment of basic salaries by the CPI.		
South Africa		18.20	19.00		25.50	26.40				QLFS data which has information on informal employment and workers covered by collective wage agreements only begins in 2008. Percentage of informal workers excludes agriculture Data on indexation is not available Data given for 2022 is an average of the first 2 quarters		

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	% of total workers			% of total employment			% of total sales			% of total workers			
	2000	2019	2022	2000	2019	2022	2000	2019	2022	2000	2019	2022	
Thailand	56.10	54.28	57.50		2.40	1.10							According to Lathapipat and Chucherd (2013), Informal workers composed of self-employed workers and small firm's employees. By this definition, more than half of employment are informal workers, which has risen after the pandemic as formal workers either forced or voluntarily switched to self-employed jobs in informal sectors eg online trading and farming. According to ILO stat, few of Thai workers are covered by collective agreements which can imply low bargaining power with their employers.
Türkiye	50.60	34.50	26.90		3.80	3.30				30.10	31.80		Fractions of wages are covered by collective wage agreements refers to the ratio of employees to the number of insured workers (except agriculture). Fraction of wages have explicit indexation clauses refers to the ratio of minimum wage earners in total employee (Based on Household Labor Force Surveys).
Vietnam	36.60	67.50	54.10		27.40	27.70							We do not have enough information to answer all of above indies.

Source: EMDGM 2023 Questionnaire

## Question 5

Table 5

	Which are the key contributing factors for informality in labour markets?							Use the space below for qualification or comments on the above responses:
	Taxation	Bureaucratic burden	Too high legal labour standards	Insufficient enforcement of rule of law	Overall economic performance	Minimum wage	Inflation	
Argentina	important	somewhat important	important	important	somewhat important	not at all important	not at all important	From the workers perspective, it is worth taking into account that the Argentinean economy has a very wide social protection network, with cash transfers from the government.
Brazil								We do not have an assessment of this issue.
Chile	somewhat important	somewhat important	somewhat important	average importance	important	somewhat important	not at all important	
China	important	average importance	important	average importance	very important	very important	average importance	

Colombia	very important	average importance	very important	important	important	very important	<p>Colombia is characterized by high rates of informality and a combination of high non-wage labour costs and a high and binding MW. The specialized literature usually finds a negative relation between informality rates and non-wage labour costs. In Colombia, the impact assessment of reforms that have seek to reduce payroll taxes shows evidence in that direction. A case that has been extensively documented is the reduction of 13.5 pp in the payroll taxes in 2013. Several studies have found that this reform increased formal employment, reducing the informality rate. The magnitude of the reduction in the informality rate varies between 2,3% and 3,6% depending on the study.</p> <p>On the other hand, there is evidence of a negative effect of larger increases of the MW relative to productivity growth on informality. When the rise in MW is higher than the increase in productivity, hiring slows down, and job seekers are finally pushed to informality. This is especially true in Colombia, where there is heterogeneity in terms of productivity growth across different labour markets but a single MW country wide. Estimates by the technical staff of the central bank suggest that an increase of 1 pp in the MW relative to the wage in the 70th percentile of the wage distribution, increases the probability of obtaining an informal job by 0.21 pp. This effect is particularly pronounced for young, female, and less skilled workers.</p> <p>Finally, there also recent estimates on the impact of the MW on formal employment. The results suggest that a 1% increase in the real MW reduces formal employment by 1%. The drop in formal employment is accounted for by an increase of 44 basis points (bp) in formal job destruction, and a decrease of 56 bp in formal job creation. It is worth saying that the destruction of formal employment does not necessarily imply a direct impact on informality, since workers could move not only towards informality but to unemployment or inactivity as well.</p> <p>References</p> <p>Arango, Luis E.; Flórez, Luz A. &amp; Guerrero, Laura D. (2020). ""Minimum wage effects on informality across demographic groups in Colombia,"" Borradores de Economía 1104, Banco de la Republica de Colombia.</p> <p>Arango, L. E. (coordinador) et al (2022). Efectos macroeconómicos del salario mínimo en Colombia. Ensayos sobre Política Económica (ESPE), núm. 103. Banco de la República de Colombia.</p> <p>Flórez, L.A.; Hermida, D. and L. Morales (2022). ""The Heterogeneous Effect of Minimum Wage on Labour Market</p>
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	Which are the key contributing factors for informality in labour markets?							Use the space below for qualification or comments on the above responses:
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								Flows in Colombia,"" Borradores de Economia 1213, Banco de la Republica de Colombia."
Czech Republic								Unfortunately, there are no official information about the informality in the labour market. The Czech statistical office does some rough estimation of shadow economy when estimating the GDP, but for the labour market there is no such thing.
Hong Kong								Please see notes to question 4.
Hungary	very important	average importance	somewhat important	somewhat important	important	average importance	somewhat important	In the past years, the economic policy, in addition to raising wages, aimed to reduce company costs (mainly by reducing the social contribution tax), which contributed to the whitening of the economy.
India	somewhat important	somewhat important	somewhat important	somewhat important	important	somewhat important		The high share of agriculture in total employment is often assessed as one reason for high informality in the economy. The other two employment generating sectors, construction and trade also informal in nature. The poor skill levels of workers is also important. The labour laws often make the cost of regulatory compliance high, especially for micro and small firms. The four labour codes passed by parliament tries to address this.
Indonesia	important	average importance	important	important	important	important	important	Based on data from the Central Bureau of Statistics (BPS) in February 2022, the majority of the population in Indonesia works in informal activities, which is 59.97% of total workers. In Indonesia, almost all of those factors are important for informal workers.
Israel	not at all important	somewhat important	somewhat important	not at all important	not at all important	not at all important	not at all important	
Korea	very important	not at all important	not at all important	not at all important	not at all important	not at all important	not at all important	Although official statistics are not available, it has been known that the size of South Korea's informal economy has been gradually decreasing as the use of cash decreases and the use of credit cards becomes more active. The reduction in cash use made tax evasion more difficult, and it is partly contributed to the decrease of informal economy.
Malaysia								There has not been a comprehensive study on the contributing factors of informality in the Malaysian economy in particular. It is likely that all factors listed above contribute to extent of informality in general.

## Question 5

Table 5

	Which are the key contributing factors for informality in labour markets?							Use the space below for qualification or comments on the above responses:
	Taxation	Bureaucratic burden	Too high legal labour standards	Insufficient enforcement of rule of law	Overall economic performance	Minimum wage	Inflation	
Peru	very important	very important	important	very important	important	important	not at all important	Different works on informality in Peru highlight three reasons that would explain the high and excessive level of informality in the Peruvian labor market: (i) high labor costs and non-labor, (ii) the complexity of the tax system, and (iii) excessive and ineffective labor regulation.
Philippines	important	very important	very important	important	very important	very important	important	High informality in the Philippines is attributed to labour market rigidities and high labour costs. A report by the World Bank cited that restrictive labour market regulations in the country (relative to regional peers) impede the efficient movement of labour across firms or sectors. The Philippines ranked 77th out of 137 countries on the Global Competitiveness Index in terms of ease of hiring or firing workers, which reflects the long administrative processes required from firms to employ or retrench workers. The high costs of labour have led to non-regular work contracts of employees and higher incidence of temporary employment. Moreover, the Philippines ranked 86th in terms of flexibility in wage determination, mirroring the high minimum wages in the country both relative to Filipino labour productivity and relative to regional peers.
Poland	very important			important	somewhat important			
South Africa	average importance	average importance	important	important	important	important	somewhat important	
Thailand	somewhat important	somewhat important	somewhat important	important	important	somewhat important	somewhat important	Insufficient enforcement of law, especially social security law and labour protection law which includes minimum wage, and the overall economic performance are the key factors contributing to informality in labour market.

## Question 5

Table 5

	Which are the key contributing factors for informality in labour markets?							Use the space below for qualification or comments on the above responses:
	Taxation	Bureaucratic burden	Too high legal labour standards	Insufficient enforcement of rule of law	Overall economic performance	Minimum wage	Inflation	
Türkiye	important	average importance	average importance	average importance	somewhat important	important	average importance	In 2019, the total tax wedge for a one-earner couple was 37.5% of the labour cost, which is the third highest among the OECD countries. However, several employment subsidies on social security contributions are provided by the government to foster formality and increase tax collection rates. Still, many firms intend to either hire informally or report gross wages at lower levels than the actual amount to avoid the tax burden. The rigidity of employment laws exacerbates informal employment by increasing the labour related costs associated with formal employment. Redundancy costs, mandatory employment of vulnerable groups, rules for mass layoffs and uncommon use of atypical work contracts weaken the flexibility in hiring and firing workers resulting in informal employment. According to the latest data, Türkiye has the most protective employment regulations on temporary forms of employment among OECD countries.
Vietnam	not at all important	somewhat important	very important	average importance	important	somewhat important	not at all important	

Source: EMDGM 2023 Questionnaire



## Question 6

Table 6

What is the estimated impact of a 10% increase in wages on CPI inflation within one year? (in %)				Use the space below for qualification or comments on the above responses:
	all wages increasing by 10%	only formal sector wages increasing by 10%	only informal sector wages increasing by 10%	
Argentina				We estimate a VEC multivariate model and the estimated impact of a 10% increase in only formal sector wages on Headline CPI is 7% within a year. The estimated pass-through of wages on Headline CPI is 0.44 within a year.
Brazil	5.40			Using the most recent version of BCB's DSGE model, estimated using Bayesian methods, an exogenous wage markup shock that increases nominal wage (Q-o-Q) by 10% increases CPI inflation (Y-o-Y) by 11.4%, using the median of the parameters of the model. Computing wages on a year-over-year basis, the ratio between CPI inflation response and wages is estimated at 0.54. Thus, an increase of 10p.p. in wages within one-year results in a CPI inflation increase of 5.4p.p. The wage markup shock is associated with exogenous deviations of the Wage Phillips Curve of the model. The model has been recently extended to incorporate a more complete labor market structure, based on Gali, Smets and Wouters (2012).
Chile	4.50			For this exercise, we use the Central Bank of Chile's primary DSGE model, used for forecasting and policy analysis*. We simulate a labour supply shock with a magnitude calibrated to generate a 10% increase (at its peak) in nominal wages. The model does not differentiate between formal and informal wages. Benjamín García & Sebastián Guarda & Markus Kirchner & Rodrigo Tranamil, 2019. XMAS: An extended model for analysis and simulations, Working Papers Central Bank of Chile 833, Central Bank of Chile.
China				Historical data shows that China's CPI growth is positively correlated with the average wage growth rate of urban employees, with a simple correlation coefficient of about 0.6. However, there are many factors that affect CPI inflation, such as changes in households' propensity to consume and constraints on consumption scenarios. Therefore, it is difficult to give the exact figure for CPI increase caused by wage inflation through simple liner extrapolation.
Colombia	1.40			Estimates are only available for increases of the MW, this means that the reported impact is the effect of the changes in total labour income induced by changes in MW (nevertheless, given the high incidence of MW on labour income distribution, the point estimate is informative about the effect of increases in wages on inflation). Studies done by the technical staff of the central bank suggest that an increase of 10 pp in the MW causes an increase of up to 1,4 pp in CPI inflation. It should be noted, however, that these estimates only cover a period characterized by low inflation (2010 - 2019). Reference: Arango, L. E. (coordinador) et al (2022). Efectos macroeconómicos del salario mínimo en Colombia. Ensayos sobre Política Económica (ESPE), núm. 103. Banco de la República de Colombia.
Czech Republic	5.00	0.00	0.00	Our rough estimate is that a 10 % increment in year-on-year wage dynamics would cause between 4% to 6% increase in prices. The result depends on the nature and trajectory of the shock to wages (whether it is on-off shock - level shift - or gradual over-the-year increase). This estimate also omits any reaction of the monetary policy. We would argue that the monetary policy could react swiftly and accordingly and mitigate the inflation pressures. The reaction of the central bank would have to be a 5-percentage point increment. This simulation was carried out by the core forecasting model g3+ (DSGE) of the Czech national bank and it only covers the wage and price dynamics with no special treatment of other variables. There is no distinction available for the Czech National Bank between formal and informal sector, hence we make our judgement only based on available data.

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Hong Kong			<p>We do not have an explicit estimate of the elasticity of inflation with respect to wage inflation. In the case of Hong Kong, wages and prices are widely regarded as flexible, and responsive to external shocks. Research results suggest that in Hong Kong, as in other places, consumer prices tend to respond to external shocks first, while productivity-adjusted nominal wages follow later. Consequently, consumer prices have been a leading indicator of nominal wages (but not vice versa), with little evidence of a wage-price spiral.</p> <p>For more details, please see ""Disentangling wages and consumer price inflation in Hong Kong"" by the staff in the Office of the Government Economist, and ""A structural investigation into the price and wage dynamics in Hong Kong"" by the staff at the Hong Kong Monetary Authority."</p>
Hungary	1.25		The is the result of a wage shock on inflation based on our model.
India			<p>The data for formal and informal sector wages is not available in India. Rural wages data is available.</p> <p>The Monetary Policy Report September 2022 Box II.2 presents ""An Examination of the Rural Prices and Wages Dynamics in India"". The analysis suggests the long-run coefficients of the relationship between rural prices and rural wages for the pre-COVID period are below unity in both the prices and wage equations (0.41 and 0.57, respectively), indicating less than proportional increase in prices in response to wage shocks and vice versa.</p>
Indonesia			
Israel	1.70		Based on the Bol DSGE model, a wage increase of 10% (due to a labour supply shock and in addition to the steady state wage increase of 3% annually) in a given quarter, is expected to increase inflation (during the following year) by 1.7%.
Korea			According to the results of VAR model using the macroeconomic-level data, the effects of nominal wage growth on CPI inflation depend on inflation level. In high inflation regime(1990s), the impact of wages on prices is statistically significant. Meanwhile, in low inflation regime (2000~), the pass-through from wages to prices is relatively weak and not significant.
Malaysia	0.40		Note 1: 0.4 refers to % of core CPI level. Depending on model specifications, the estimations range from around 0.2 to 0.8; 0.4 refers to the average of the models. Note 2: The models used include single equation NKPC models and structural DSGE model. Note 3: "Wages" is defined as real wages per worker.
Peru			In general, no estimates have been made of the increase in wages based on inflation. Only the impact of increases in the minimum living wage on inflation has been estimated. The impact of a 10 percent increase in the minimum wage would generate, 12 months later, an increase of up to 0.73 percentage points in inflation.
Philippines			Data and assessments on formal and informal labour sectors are not available. Estimated impact is for internal use only.
Poland	2.76	2.76	We do not acquire nor estimate data on wages in informal sector that is why the estimate for formal sector and all wages is the same. This result is based on simulation run on the structural macro econometric model of the Polish economy (NECMOD). It assumes 10% increase in wages as a permanent level shift and reflects average CPI uplift in one year, in percentage points (2.76%).

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South Africa	1.00			<p>A 10% increase in nominal wages has an average annual impact of 1 percentage point on CPI inflation in the current year and 3 percentage points one year after the shock. The peak impact is 3.1 percentage points six quarters after the shock.</p> <p>We only model total wages. Therefore, we do not have a separate impact for formal vs. informal.</p>
Thailand	0.40			<p>A 10 percent increase in unit labour cost (ULC) results in a 0.4 percent average increase in headline inflation over the next 4 quarters. The low estimated impact for Thailand is due to:</p> <p>(i) low share of wage earners at 44% as most of the labour force in Thailand are self-employed</p> <p>(ii) low wage contribution to overall production costs (15 percent on average)</p> <p>(iii) low wage growth due to factors such as no labour unions</p>
Türkiye				<p>CPI inflation has been rising since the end of 2020 and this rise accelerated at the end of 2021. Although both minimum wage and average wage year-over-year percentage changes outpaced the yearly CPI inflation for the latest month or quarter, wage indicators had been below CPI inflation for the last quarter of 2021, the first quarter of 2022 and the second quarter of 2022. Therefore, it is considered that an increase in nominal wages at a rate close to inflation shall not create an additional pressure on the inflation rate.</p>
Vietnam	0.20	0.10	0.10	
Source: EMDGM 2023 Questionnaire				

## Question 7

Table 7

	What is the importance of minimum wages and other salaries determined by the government in your country (eg public sector wages, etc)? Has this changed over the past 10 years?
Argentina	Government determined salaries are useful as a threshold to guide private sector bargaining negotiations in terms of nominal expectations. Some social-related expenses of the government, are tied to the evolution of the minimum wage.
Brazil	Minimum wage is 1212 BRL and the average wage in Jan/22 was around 2600 BRL. Therefore, a large share of the employed population in the formal sector earns the minimum wage. When this variable is adjusted, other wages in the economy increase. However, a formal indexation of wages to the minimum wage is prohibited by Brazilian law.
Chile	Public employment represents 17% of total employment (average for 2022). Public employees' wages are subject to specific governmental laws for readjustment, which are negotiated yearly. The last readjustment was 6,1% for the period of 2021-2022. The proportion of workers who earn the minimum wage is close to 10% (the year 2022). Since 2016, the minimum wage is typically adjusted twice a year by specific laws (before that year, adjustments took place once a year). Between 2010 and 2022, it raised from CLP 172.00 to 400.000 CLP, which represents an average real annual growth of somewhat over 4%. The government does not directly influence other salaries of the economy.
China	China's Minimum Wage Regulations, which came into force on 1 March 2004, laid down the institutional arrangements for the state to intervene in the distribution of wages and guarantee the basic livelihood of low-income workers, and for the government to regulate economic activities and promote social equity. Since 2012, households' wage income has increased steadily, and the minimum wage has been raised from 996 yuan per month in 2012 to 1,755 yuan per month in 2021.
Colombia	<p>In Colombia, the MW relative to median wage (Kaitz index, IK) is around 90%, while the average of this ratio is roughly 50% for the OCDE countries. The higher value of the IK in Colombia indicates that the level of the MW disproportionately exceeds the market wages, which means that the MW is quite high compared with labour productivity. Besides as a mechanism of fixation of the minimum legal wage, the adjustment in the MW is also used as a reference for increases in social security contributions, the minimum retirement pension, among others. This gives the MW a major role in the labour market and the adjustments of prices in general.</p> <p>Some studies have found that in Colombia the MW is a source of substantial rigidities and labour market distortions. For instance, there is evidence of its contribution to informality, job losses, and structural unemployment, as well as its negative impact on income inequality, monetary poverty, and inflation (see Arango et al 2022).</p> <p>Finally, wages in the public sector are adjusted according to annual nationwide labour agreements. Usually, the increases are linked to the past inflation. As 2022 Q2, the share of total employment represented by employees of the public sector is 4,2%. Reference: Arango, L. E. (ed.) et al (2022). Efectos macroeconómicos del salario mínimo en Colombia. Ensayos sobre Política Económica (ESPE), núm. 103. Banco de la República de Colombia.</p>
Czech Republic	According to Average Earnings Information System (results from 1H2022) there are about 128 thousand workers who work for a minimum wage (when considering the total employment to be around 5 450 thousands this implies approximately 2% of all workers). About 18% of all workers work in sectors where state set the wages directly. Both minimum wage and state-employed workers share has been relatively stable over time.
Hong Kong	In Hong Kong, the statutory minimum wage (SMW) has come into force since 1 May 2011. Over the years, the SMW rate has increased from HK\$28 per hour initially to HK\$37.5 per hour now (for detailed changes, please see the excel file). The SMW rate has effectively protected those in low-income jobs against unduly low pay while allowing Hong Kong to remain competitive internationally. The implementation of SMW has helped alleviate the problem that workers with extremely low wages struggling to make ends meet and improve their living conditions. On public sector wages, adjustments to civil service pay will take into account all relevant factors, particularly private sector pay through different surveys.
Hungary	According to our calculations, today the proportion of those earning the minimum wage is 8.3 percent and the proportion of those earning the expected minimum wage is 12.7 percent, so every fifth employee is directly affected by the measures of these wage raises. The proportion of those earning the minimum wage has decreased over the years. However, due to wage congestion, a total of 2.5 million people (54 percent of the employed) are estimated to see their wages rise as a result of these measures.
India	The minimum wages along with secured employment of 100 days for unskilled manual labour prescribed under the MGNREGA is a powerful instrument for inclusive growth in rural India. In the formal sector, the last pay revision for central government employees (ie 7th Central Pay Commission award) came into effect from 1st July 2017.

## Question 7

Table 7

	What is the importance of minimum wages and other salaries determined by the government in your country (eg public sector wages, etc)? Has this changed over the past 10 years?
Indonesia	The Government of Indonesia regulates the determination of the Minimum Wage. The government focuses on the interests of workers and entrepreneurs and business continuity. The minimum wage is held in Government Regulation Number 36 of 2021. The determination of the Minimum Wage aims to achieve the welfare of workers/ by considering the company's capabilities and national conditions. In addition, the Minimum Wage policy is intended to alleviate poverty and encourage Indonesia's economic progress.
Israel	In the medium-term public sector wages move closely in line with business sector wages. The public sector employs directly about 20% of all employees, and about 10% more are employed in businesses directly connected to the public sector. This structure has been broadly stable during the last decade. Minimum wages are set at 47.5% of the average wage, but occasional modifications to the formula are made in trilateral negotiations and expanded to the entire economy by government decree.
Korea	1) The minimum wage in South Korea has risen sharply over the past decade (4,320 Won in 2011, 9,160 Won in 2022), which seems to have had some impact on the overall wage growth. 2) Among all workers in 2011-21, less than 5% are employed in the government sector, so public sector wages do not have a large effect.
Malaysia	Public sector wages are likely to have become less important in influencing wage-setting dynamics for the private sector since the introduction of minimum wages in 2013, as the minimum wage level may be higher than salaries and wages earned by some civil servant workers. Minimum wages are reviewed every 2 years. In the past, minimum wages adjustments have not typically led to significant upward pressures to inflation, in part reflecting modest adjustments in 2015, 2017, and 2019. While the minimum wage revisions in 2022 were relatively more substantial, we do not expect the increase in wages to be pervasive as they affect a relatively small section of the workforce.
Peru	20 percent of the population with formal jobs in the private sector have incomes around the minimum wage. On the other hand, 30 percent of formal jobs in Peru belong to the public sector, and this percentage has not changed in the last decade.
Philippines	Developments on minimum wages are monitored closely by the BSP as it forms part of the information incorporated in our inflation forecast. The minimum wage determination in the Philippines is the primary responsibility of the National Wages and Productivity Commission (NWPC) and the Regional Tripartite Wages and Productivity Boards (RTWPBs). Minimum wage per region is reviewed periodically given the petition for wage increase and presence of supervening condition, such as an extraordinary increase in prices of petroleum products and basic goods and services. This has not changed in the past 10 years after the two-tiered wage system was implemented in 2012.
Poland	<p>According to LFS, employment share of the public sector in Poland in the last 10 years is relatively stable amounting to ca. 25% of total employment. Around half of the public sector constitutes the so called 'budgetary sphere' (financed by central or local government) where wages are dependent, to a higher degree, on governmental regulations than in the remaining part of this sector. On the other hand, average monthly wages in public sector are significantly higher than in the private one, although the relation 'public vs. private' has decreased over time from ca. 117% in 2012 to 113% in 2021 and to 109% in the first half of 2022.</p> <p>The minimum wage in Poland in the past 10 years rose at a higher pace than the average wage. As a result, the relation between minimum wage and the average increased from 42% in 2012 to 49% in 2021 and is expected to further increase up to 52% in 2023. However, the share of workers earning minimum wage in Poland has been relatively stable within a range of 14-16% in the last decade, still it can slightly rise in 2023.</p>
South Africa	The minimum wage is a recent development in the South African labour market, with its enactment into law having come into effect in 2019. Noting that 2020 was an unusual year in all respects owing to COVID-19, there hasn't been enough time to assess its impact versus its objective of protecting low-earning (vulnerable) workers in South Africa and providing a platform for reducing income inequality. The minimum wage initially excluded three low skilled types of employment including farm workers, domestic workers and expanded public works programmes employees as well as workers participating in learnerships, but in 2022 wages for domestic workers and farm workers were aligned with the national minimum wage whereas in previous years wages for these groups of employees were determined by sector specific minimum wages. Public sector wages on the other hand have trended above inflation and above average private sector wages, with the gap between public and private wages widening most notably in the last 6 years. This has given rise to a ballooning public sector wage bill which has been difficult to contain due to the above inflation wage agreements common in public sector wage settlements. Recently, government has embarked on a programme to consolidate its finances, with moderation in the wage bill a key component of the planned consolidation.

## Question 7

Table 7

	What is the importance of minimum wages and other salaries determined by the government in your country (eg public sector wages, etc)? Has this changed over the past 10 years?
Thailand	After 2013 when minimum wage rate increased around 40% nationwide from THB 176 to THB 300, the importance of minimum wage had declined as the rate has slightly changed over the past 9 years, with the current rates average at THB 337. Nowadays, only 14% of workers are paid below the minimum wage. However, public sector wage could set the benchmark for private sector due to some competition to hire skilled workers. This is confirmed by the high correlation around 0.9 of wage rate between both sectors.
Türkiye	<p>Minimum wage set by the Minimum Wage Determination Commission is an important reference point for collective bargaining both in the public and private sector in Türkiye. Its level is intensely debated and is used by the government as a reference point for various social transfers.</p> <p>The tripartite Minimum Wage Determination Commission sets minimum wage at least every two years since 1951 in Türkiye. Due to high inflation rates, from 1997 to 2015 the Commission determined the minimum wage twice a year, but annually since 2016 (with an exception in 2022).</p> <p>The regulations on minimum wage ensure that the Commission take social and economic conditions of the country, living condition indices for salaried workers, actual wages and the average living standards into account while determining the minimum wage. Article 5 of the Minimum Wage regulation forbids discrimination based on mother tongue, race, color, sex, disability, political opinion, philosophical belief, religion and similar reasons. Accordingly, the Commission sets the minimum wage level based on three main pillars: daily calorie need of workers, cost of living indices and food inflation. Moreover, the Commission tracks other developments and global economic trends.</p>
Vietnam	The regulation of the minimum wage is very important for determining the actual salary of the employee in order to protect the minimum rights for citizens in the employment relationship. Since 2012, minimum wage in Vietnam had been increased 12 times.

Source: EMDGM 2023 Questionnaire

How have labour productivity and unit labour costs in your country evolved in recent decades?	
Argentina	Labour productivity has been falling for the past ten years, and in a similar way, but since 2018, have the unit labour costs decreased too.
Brazil	<p>Brazil does not have an adequate a ULC measure. Productivity data can be obtained, for example, here: <a href="https://ibre.fgv.br/observatorio-produtividade">https://ibre.fgv.br/observatorio-produtividade</a> and here <a href="https://ibre.fgv.br/observatorio-produtividade/temas">https://ibre.fgv.br/observatorio-produtividade/temas</a></p> <p>Annual data in: <a href="https://ibre.fgv.br/observatorio-produtividade/temas/categorias/pt-anual">https://ibre.fgv.br/observatorio-produtividade/temas/categorias/pt-anual</a></p> <p>Despite cyclical movements, labour productivity (per worker) increased from 1992 to 2013, declined until 2016 and started a recovery in 2017. 2021 levels are 1.6% below the peak in 2013. From 2001 to 2010, the average productivity growth was 1.2% in average; it declined to 0.4% in 2011-2020</p>
Chile	<p>Regarding productivity the Central Bank of Chile has updated its projection of trend growth in June 2021. The changes are mainly due to a reassessment of the future evolution of TFP growth. Those estimates, as well as information from external sources, suggest that TFP has been showing a downward trend. Therefore, the trend growth projection scenarios consider a range of TFP growth between 0% (approximately the average of the last decade), and 0.7% (the average between 1997 and 2019). This scheme contrasts with the practice of previous estimates, in which future TFP growth was assumed to be equal to the historical average growth ("Estimation of Structural Parameters of the Chilean Economy," Background Paper, Monetary Policy Report, June 2021, p. 21). Structural parameters will be reevaluated in the current Monetary Policy Report (December 2022) where trend and TFP growth will probably be revised downwards.</p> <p>Regarding unit labour costs, between 2013 and the beginning of the COVID pandemic they had been growing at an average annual real rate somewhat over 1%. During the first half of 2020 they showed a significant decline, mainly explained by the sectors most affected by the pandemic (retail and transport services). Since mid-2020 onwards unit labour costs recovered but are still 5% below its pre-pandemic levels.</p>
China	In 2021, China's labour productivity per person posted 146,380 yuan, an increase of 80.3% from 2012 and an average annual growth of 6.8%, higher than the average annual GDP growth rate by 0.2 percentage point. In 2021, the average wage of urban employees was 106,837 yuan per person, an increase of 128.4% over 2012 and an average annual growth rate of 9.6%. Both labour costs and labour productivity have grown rapidly, but costs have risen faster than productivity, leading to an increase in unit labour costs in recent years.
Colombia	During the last decade labour productivity grew at an annual rate of 0.8% on average. Recently, during the covid-19 pandemic, labour productivity had an outstanding increase (close to 4.4%), due to the fact that the hours worked fell much more than the GDP. On the other hand, the real median wage grew at an annual rate of 1.1% on average in the last 10 years; so there have been increases in the unit labour cost, of around 0.4% on average.
Czech Republic	Both productivity and labour costs have been slowly but steadily rising. The growth in productivity had lagged behind the wage growth by a great margin in the second half of 2010s. Modest productivity in combination with solid wage growth have created inflation pressures that caused inflation rise even before today's inflation period. This was reinforced in the time of the covid closures, when implied wage growth (and with it also unit labor costs) stagnated, while labor productivity fell significantly. In 2020, nominal unit costs rose by 5.9%, while labor productivity fell by 3.8%.
Hong Kong	<p>Over the past 20 years, the Hong Kong's labour productivity largely maintained positive growth, although the growth momentum moderated somewhat in recent years. A shift-share analysis using sectoral data suggests that sectoral upgrading (ie. the skill upgrades of individual sectors due in part to rising proportion of higher-skilled employment) has been the key determinant contributing to productivity growth.</p> <p>Meanwhile, the nominal unit labour cost (ULC) in Hong Kong, which is estimated by nominal index of payroll per person engaged multiplied by total employment and then divided by real gross domestic product (for data, please see the excel file), displayed a downward trend during 2000-2009 first as a result of the deflationary environment post-Asian financial crisis and later due to faster growth in output. The nominal ULC gradually climbed up during 2010-2019 alongside payroll rises and positive inflation, before edging down during the pandemic.</p>
Hungary	While real productivity has doubled between 1981 and 2021, real labour costs have quadrupled during these decades in our country, which suggests that unit labour cost has increased in recent decades. However, the number of employed people increased by more than 800,000 between 2010 and 2021 contributed to a smaller increase in productivity (GDP/employee). In addition, the economy whitened significantly, which also means that the increase in wages did not necessarily differ so notably from productivity.

How have labour productivity and unit labour costs in your country evolved in recent decades?	
India	<p>1. In the long-term, India's labour productivity, however, has slowed down in line with the global trend. India's labour productivity grew on average by 2.7 per cent for the period 2017-19, compared with 6.5 per cent for 2014-16. For emerging markets, this rate declined from 2.2 per cent to 1.2 per cent for this period.</p> <p>2. The unit cost of labour in India may have fallen by 2.6 per cent (after adjusting for inflation) on average for the period 2020-2022.</p> <p>3. The unit cost of labour was showing signs of deceleration in India even before COVID. The average annual growth in the unit cost of labour for the period 2017-19 was 3.8 per cent, compared to 7.3 per cent for the period 2014-16. Estimates are based on Total Economy Database (The Conference Board) and India KLEMS.</p>
Indonesia	In Indonesia, developments regarding labour productivity have experienced significant results in recent years. A series of structural reforms continue to be strengthened by the authority to increase efficiency and productivity in order to achieve higher, sustainable economic growth. Structural policy reforms aim to create new sources of growth, increase local value added; greater integration between sectors and regions; and promote inclusive growth.
Israel	Labour productivity in Israel has increased in recent decades at a very similar rate to the average of the OECD.
Korea	<p>Labour productivity (*) and unit labour cost (**) both increased in 2021 compared to 2011, and the increase in unit labour cost is larger than the increase in labour productivity.</p> <p>* labour productivity index (except for agricultural sector, 2015=100): '11 104.5 '21 110.0</p> <p>** unit labour cost index (2015=100): '11 93.08 '21 106.76 "</p>
Malaysia	Unit labour costs (as measured by total wage bill in proportion to sales) have been steadily declining since 4Q 2021 (in the manufacturing sector) and 2Q 2022 (in the services sector), in line with improving labour productivity trends in 2022. However, this may to some extent reflect cyclical effects from the recovery from the pandemic. At the same time, the share of compensation of employee to GDP have declined in 2021, as the economy partially recovered from the pandemic (2021: 34.8%; 2020: 37.1%; 2019: 35.9%).
Peru	On average, labour productivity grew 3.3 percent between 2004 and 2019. Meanwhile, the unit labour cost for the period 2010 - 2019 grew by 2.9 percent (In 2020 decreased 4.6 percent due to the drop in labour income).
Philippines	Labour productivity growth was stable in the early 2000s and then accelerated from 2010 to 2019. However, the gains in labour productivity growth over the past two decades was reversed during the pandemic. Labour productivity in the Philippines from 2001 to 2008 grew at an average annual rate of 2.2 percent. In the aftermath of the Global Financial Crisis in 2009, labour productivity contracted by 1.4 percent but subsequently bounced back to a growth of 4.4 percent in 2010. The decade prior to the pandemic (ie 2010 to 2019) posted an acceleration in labour productivity which expanded at an average annual rate of 4.5 percent. Labour productivity dropped by 3.0 percent in 2020, and further contracted by 6.0 percent in 2021. [Note: Labour productivity is computed as Gross Domestic Product per employed person. Official data on unit labour cost is not available.]
Poland	<p>Labour productivity has been growing systematically. In the 2000s and 2010s the average annual growth amounted to about 3%. During the pandemic labour productivity dynamics fell below -2% annually, yet since Q2 21 it rebounded to positive numbers of ca. 5-6% y/y.</p> <p>The growth rate of unit labour costs (ULC) has been relatively stable. In the 2000s the average annual growth was equal to 1.5%, but the first half of that decade demonstrated a negative ULC dynamics, while the second half faced a sharp increase in 2008. In the 2010s the average annual growth went slightly up to ca. 2.0%. In 2020, as a result of a drop in GDP due to the Covid-19 outbreak and an introduction of the lockdown in the NE, the ULC growth rate accelerated, indeed (above 7% in 2020). However, in mid-2021 ULC dynamics have already declined, stabilizing at an average level (below 5% in 2021).</p> <p>Until mid-2022 labour productivity has been growing quite dynamically, so no significant acceleration of ULC growth rate has been noticed (3.0% y/y in Q1 22, 7.2% y/y in Q2 22).</p>



## How have labour productivity and unit labour costs in your country evolved in recent decades?

South Africa	Average change in labour productivity in each decade:	
	1971-1980:	-0.6
	1981-1990:	1.2
	1991-2000:	1.9
	2001-2008:	2.4
	2010-2019:	1.1
	2021-2022:	4.3
	Average change in unit labour costs in each decade:	
	1971-1980:	13.2
	1981-1990:	17.4
	1991-2000:	11.0
	2001-2008:	6.7
	2010-2019:	6.0
	2021-2022:	2.0
<p>Labour productivity growth has increased noticeably in the period since the adoption of inflation targeting but prior to the global financial crises, registering an average of 2.4% in the period 2001-2008, up from 1.9% in the 1991-2000 period and -1.2% in the 1981-1990 period. This trend is consistent with the performance of GDP growth that benefited from the lifting of sanctions in the early 90s to the commodity boom pre-GFC. However, post-GFC the South African economy has struggled, experiencing trend growth slowdown until just before the outbreak of the Covid-19 pandemic. Consequently, productivity has also slowed to just 1.1% over the period 2010-2019. Post-Covid-19, the country has experienced a faster than anticipated recovery in growth that was not accompanied by similar growth in employment growth. As a result, productivity has picked up to an average of 4.3% between 2021 and 2022.</p> <p>Similarly, the unit labour cost trend has benefited from the above trend in productivity but moreover, it has benefited from better inflation outcomes. Since the adoption of inflation targeting, trend inflation has decelerated from above the upper target limit of 6% to below the 4.5% target midpoint just before Covid. Consequently, the unit labour cost trend has decelerated from an average of 11% in the period 1991-2000 to an average of just 2% post-Covid.</p>		
Thailand	Labour productivity grew from 2.3 %CAGR in the 2000s (except 2000) to 3.3 %CAGR in the 2010s, in line with unit labour costs, which also grew from 1.3 %CAGR to 1.8 %CAGR during the same period.	
Türkiye	Since 2014, while labour productivity has tendency to increase, unit labour cost has a declining trend.	
Vietnam	In recent years, labour productivity has improved significantly, but Vietnam's labour productivity growth rate is not fast enough to close the gap with other countries in the region. Due to the effects of aging and rising labour costs, Vietnam will soon lose its current comparative advantage in cheap labour.	

Source: EMDGM 2023 Questionnaire

	How do you expect long-term trends (demographics, technical innovation, automation, globalisation/deglobalisation) to affect labour market and wages?
Argentina	Long term trends should consider that the demographic dividends projections will start to negatively impact the labour market.
Brazil	The main long-term trend we highlight is population aging in Brazil. Working age population growth will decline in the next years and this will influence the labour force participation rate, for example.
Chile	In terms of technical innovation and automation, we expect it to have a negative impact on employment in the short term, as the high-skill positions generated by the automation process are significantly fewer than the low-skill ones that are destroyed. In a general equilibrium setting for Chile, Rivera (2019) finds that a 1% decrease in the international price of robots would have a short-run negative impact between 0.05% and 0.25% in labour and wages. In the long term, the effect is unclear as it will depend on the economy's ability to relocate the lost positions. Frey and Osborne (2017) estimate that with new developments, 57% per cent of jobs across the OECD are susceptible to automation. How this would affect average wages, in the long run, is not evident since it will depend on whether lost employments are reallocated and on which wage. Regarding demographics, Chile is in the process of ageing of the population. The working-age population older than 45 has continuously increased from 45% in 1992 to 51% in 2017 (*). However, the aging process is being delayed with the recent wave of migration. According to governmental sources, migrants represent 3,4% of the total population (2017). Additionally, the 2017 Census shows that 80% of migrants are part of the labour force, representing 8,8% of the total labour force. This aside, demographic changes push the unemployment rate downwards because workers younger than 25 (with a higher unemployment rate than the average) tend to represent a smaller share of the labour force. Estimations indicate that with the labour force composition of 1992, the unemployment rate of 2018 would have been 1.5 higher (*).
China	In the long run, the slowdown of population growth and the ageing problem would reduce labour supply and labour participation and pushing up labour costs. Technical innovation and automation would not only lead to changes in overall labour demand and wages, but also lead to structural changes in the labour market by improving production efficiency. In particular, it would further increase the demand for labour for non-automated jobs and jobs that complement robot skills, while replacing some automatable jobs. Both the demand and supply of high-skilled workers will increase, and the demand and supply of low-skilled workers will decrease, further exacerbating the polarization of the wage income between high-skilled and low-skilled workers.

How do you expect long-term trends (demographics, technical innovation, automation, globalisation/deglobalisation) to affect labour market and wages?	
Colombia	<p>One of the main facts that has shaped the labour market trends in Colombia is the massive immigration from Venezuela. In 2013, migrants from Venezuela as a share of the working-age population in Colombia were roughly 0.2%; this share rose up to 7% by 2022. Given the demographic profile of immigrants, characterized mainly by people of working age, the massive inflow of migrants helped to slow down the process of population aging in Colombia. Further, the migratory wave, particularly since 2018, modified the decreasing trend in population growth due to the secular drop in the birth rate. The immigrant population has tended to stabilize during the last year, and a better outlook for the Venezuelan economy would imply that this population would not continue increasing at the rate observed in previous years.</p> <p>Studies on the impact of migration from Venezuela on the Colombian labour market show relatively minor displacement effects in terms of employment for native workers; and negative hourly wage effects concentrated on less educated natives (see Tribin et al 2020 and Lebow, 2022 for comprehensive discussions). Further, it is also documented that Venezuelan immigrants face more frictions in the labour market, producing a larger extent of misallocation of this workforce, that prevent immigrants from working in their desired occupations (Pulido, 2020). By removing the additional frictions immigrants face, Colombian aggregate labour productivity could increase permanently up to 0.4%.</p> <p>Besides immigration, other factor shaping labour market dynamics is the automation process, which, as noted in response 3, it has been accelerated by the pandemic. As stated earlier, a faster automation could have long-run consequences on structural unemployment and informality, to the extent that the mismatch between the current skills of workers and those required by a labour market that is now more prone to automation is enhanced.</p> <p>Finally, regarding the whole globalization process, the evidence is scarcer. There are impact assessments of particular episodes of trade liberalization, such as the induced by the unilateral tariff reduction in 2010 and the free trade agreement signed between Colombia and the United States in 2012 (Bonilla et al 2022). The results show that import competition generate reallocation of workers across sectors. In the manufacturing sector, there are decreases in employment in a similar magnitude than foreign inputs increase it; with the adverse employment effects driven by firm exit. At the same time, foreign inputs increase non-college educated employment in services, by inducing firm entry.</p> <p>References:</p> <ul style="list-style-type: none"> <li>- Bonilla, L.; Flórez, Luz A.; Hermida, D.; Lasso-Valderrama, F.; Morales, L.; Ospina, J and J. Pulido (2022). ""Is the Covid-19 Pandemic Fast-Tracking Automation in Developing Countries? Evidence from Colombia,"" Borradores de Economía 1209, Banco de la Republica de Colombia.</li> <li>- Bonilla, L. and J. Muñoz (2022) ""Import Competition, Foreign Inputs, and Labour Adjustment in a Developing Country: Evidence from Colombian Liberalization"" Unpublished, University of Illinois.</li> <li>- Lebow, J. (2022). The labour market effects of Venezuelan migration to Colombia: Reconciling conflicting results. IZA Journal of Development and Migration, 13(1).</li> <li>- Pulido, J and A. Varon (2020). ""Misallocation of the Immigrant Workforce: Aggregate Productivity Effects for the Host Country,"" Borradores de Economía 1135, Banco de la Republica de Colombia.</li> <li>- Tribin, A., et al (2020). Migración desde Venezuela en Colombia: caracterización del fenómeno y análisis de los efectos macroeconómicos. Revista ESPE - Ensayos sobre Política Económica, (97):1–74.</li> </ul>
Czech Republic	<p>There is no signal of sudden changes in the wage dynamics in years ahead. There are no signs of big foreign investment that would affect the wages economy-wide. The government also isn't introducing any major policy that would have any potential to change the long-term wage dynamics development (such as immigration laws, return to job market after maternity leaves, laws about retirement or for example taxation). Since the Czech Republic is highly industrial-oriented country, there is a risk of changes in the labour market connected with an automation of manufacturing, but all these changes are only in a form of speculation or risk with no quantifiable impact for now.</p>
Hong Kong	<p>In the long term, population aging is going to exert downward pressure on labour force / labour force participation rate, while technological progress and innovation, as well as continued investment in human capital, will help support labour productivity growth and wages. In addition, changes in consumption behaviors or business models post-COVID-19 may expedite adoption of innovation and technology in daily lives and business operations, such as online shopping, remote work and distance business, which may lead to changes in demand for talents for different jobs.</p>
Hungary	<p>Demographic burden is one of the issues the Hungarian labour market has to face as the number of people participating in the labour force is expected to decrease in the upcoming years. Technical innovation and automation may help the labour shortage in Hungary by substituting defined tasks and jobs.</p>

How do you expect long-term trends (demographics, technical innovation, automation, globalisation/deglobalisation) to affect labour market and wages?	
Indonesia	In the medium to long term, Indonesia has the potential for the economy to benefit from the demographic bonus. Indonesia's demographic bonus provides an advantage on the supply side through the relatively large size of the productive age population, which increases the potential number of workers. To maximize the potential of the demographic bonus, the absorption of workers plays a vital role. An increase in the amount of incoming investment, accompanied by an able workforce that can meet the needs of industry, including technical innovation and automation, is crucial for the absorption of workers and, ultimately, a brisker pace of economic growth. Given the current trend of key producers relocating their production facilities to emerging market economies in the mid of globalization, it is vital that Indonesia create a more conducive business climate while boosting domestic investment, thereby increasing the chances of Indonesia becoming a new production base and will have an impact on the labour market and wages.
Korea	1) Population aging is expected to have a significant impact on the Korean labour market. As older population increases, the labour force participation rate and employment rate will fall, and the working-age population is expected to gradually decrease. 2) The effect of technical innovation or automation on labour market is unclear up to now. Although a lot of academic and policy papers show the possibility of replacing between automation and labour, their results are unilateral, and no consensus has been reached.
Malaysia	On demographics: Although Malaysia is set to become an aging society in the next decade, the Malaysian labour force remains relatively young (Proportion of labour force <55 years old: 91.7%; Advanced economies*: 74.9%), while women's labour force participation is still recovering from pandemic-induced shocks (3Q 2022: 55.8%, 4Q 2019: 56.9%). These two factors keep the supply of workers forthcoming, alongside the gradual return of migrant workers. This would serve to contain wage pressures, particularly when combined with structurally low collective wage bargaining and coverage of wage indexation agreements. On the other hand, an increasingly educated labour force, combined with greater automation and digitalisation, would eventually raise productivity and ultimately wage levels in the long term. While technical innovation is advancing at a more rapid pace and more businesses are automating and digitalising than ever before (from anecdotal insights and industrial engagements), we do not currently expect these trends to induce disorderly dislocations of workers in the labour market, as they are expected to occur at a gradual pace. Additionally, there are various re-skilling and up-skilling programmes available to facilitate an orderly transition and reallocation of affected workers. The impact of reconfiguration in GVC on Malaysia is still unclear. While there are risks of deglobalisation weighing on trade, Malaysia could also benefit from diversion of trade and investment, which would be positive on the labour market. * Includes USA, Canada, Sweden, Australia, South Korea, and Japan.
Peru	It is to be expected that the lower growth of the population in Peru will lead to a lower increase in the economically active population and employment. On the other hand, technological innovations could generate greater inequalities in the labor market. Due to the low human capital of a large proportion of the population that participates in the labor market, they could not option jobs with higher benefits, which would lead them to take jobs in sectors with low productivity and generally in the informal sector
Philippines	Digitization has radically altered how firms and economic agents operate during the pandemic; hence it is expected to likewise reshape the labour market landscape going forward. Demand for workers possessing digital skills is seen to expand in the coming years as this would be crucial in complementing firms' adoption of digital technologies to their business functions. Information Technology (IT)-related jobs are among the most in-demand jobs in the Philippines based on separate surveys conducted by the Department of Labour and Employment (DOLE) and LinkedIn from 2020 to 2022. However, a report by the Worldbank suggests that the country's labour force have limited digital skills and low level of digital literacy, which poses substantial skills shortage for IT-related jobs. This is also confirmed in the World Digital Competitiveness Ranking 2022 wherein the Philippines ranked 42nd in digital/technological skills indicator and 56th in the overall index for digital competitiveness among the 63 countries that were studied. Efforts to bridge the digital skills gap and upgrade existing technical skills of the Philippine labour force is imperative to address the current skills mismatch and to respond to the growing demand for digitally skilled workers.
Poland	The long-term trends in demographics will lead to a gradual decrease in the total population and negative changes in the population age structure, in particular from the labour market perspective. In the future these tendencies will result in population ageing and significant reduction in the domestic labour supply. In a long run an improvement in job quality, both regarding domestic and foreign workers, appears to be one of the crucial factors required for further labour productivity growth. Job quality improvement could be attained by i.a. by promoting lifelong learning and making the education system more responsive to labour market needs. With regard to productivity improvement, supporting the job automation and digitalization processes should be recommended, especially among smaller firms. ICT implementation – together with active migration policy measures – might also mitigate future labour force shortages, by decreasing demand for labour. At present, however, the level of automation and robotization among Polish enterprises remains relatively low.

## Question 9

Table 9

How do you expect long-term trends (demographics, technical innovation, automation, globalisation/deglobalisation) to affect labour market and wages?	
South Africa	<p>Domestically, working age population growth has been rising faster than employment growth for a number of years resulting in sharply higher unemployment. Significant structural reforms are required to create sufficient dynamism in the economy to absorb those currently unemployed as well as new entrants to the labour market.</p> <p>Another characteristic of the South African labour market is the high unemployment among the youth (aged 15-34). In 2022Q2 youth unemployment averaged 51.3% compared to the national unemployment rate of 33.9% in the same period. High youth unemployment often results in the youth withdrawing completely from the labour market, ie becoming "inactive." This partly explains the wide gap between the narrow (official) unemployment rate and the broader unemployment rate. This has a further impact on lost potential earnings, greater social security cost, lower skills and productivity and slower economic growth in the future.</p> <p>While automation poses a potential risk to employment outcomes particularly given the low skill base for the majority of the workforce, to date there is no notable disruptions to the labour market and wages. However, this risk should be monitored closely going forward.</p> <p>The domestic labour market is relatively insulated and the impacts of globalization/ deglobalization are likely to remain minimal in the near term.</p>
Thailand	<p>Long term trends such as demographic change and technological advancement are expected to affect labour market. According to UN population projection, we expect that aging society will reduce labour force 1 % per year after 2070. Digital disruption will result in some jobs being replaced by technology and create demand for new set of skills.</p>
Türkiye	<p>Türkiye has a relatively young demographic structure in comparison with the OECD countries. The share of 15-24 age population in total population is 15.4% which is the fifth highest ratio among the OECD member countries. However, Türkiye's population is growing older as well like other countries in the world. The share of 15-24 population in total population was 17.1% in 2010. Despite this fall, Türkiye has one of the most dynamic population structure. True education and investment policies will enhance the potential growth of Türkiye. Additionally, well-educated young population will have more tendency to be interested in technical innovation, automation and digital skills. These are expected to increase the job opportunities in the world and create the productivity gains. Nevertheless, because the automation requires less labour, it may increase the unemployment especially for low skilled workers. Improving skills of the people is expected to mitigate this effect of the automation.</p>
Vietnam	<p>Vietnam has been implementing national science and technology tasks, supporting businesses in research, innovation, technology transfer and application to improve productivity. We are building and implementing science and technology tasks, plans to improve our labour productivity and total factor productivity (TFP) based on science, technology and innovation. At the same time, we are promoting institutional reform; continue to promote the development of high-quality human resources associated with innovation.</p>

Source: EMDGM 2023 Questionnaire

How important are the following labour market indicators for monitoring and forecasting at your institution?															
	unem- ployment rate	labour force participa- tion	average wage rate	minimum wage	total employ- ment	under- employ- ment rate	youth unem- ployment	migration flows	sectoral employ- ment	employ- ment in informal sector	age profile of labour force	job vacancy rates	average hours worked / employee	employ- ment compo- nents of PMIs	distribu- tion of wage increases
Argentina	important	somewhat important	very important	somewhat important	average importance	average importance	average importance	not at all important	average importance	average importance	average importance	average importance	average importance	statistic not available	average importance
Brazil	very important	very important	very important	important	very important	average importance	not at all important	not at all important	average importance	average importance	not at all important	statistic not available	somewhat important	not at all important	not at all important
Chile	very important	very important	very important	not at all important	very important	average importance	somewhat important	important	very important	important	somewhat important	very important	average importance	average importance	very important
China	very important	important	important	important	very important	average importance	very important	important	important	important	average importance	average importance	important	average importance	average importance
Colombia	very important	important	important	very important	very important	somewhat important	average importance	important	important	important	somewhat important	very important	important	statistic not available	important
Czech Republic	important	somewhat important	very important	somewhat important	average importance	somewhat important	somewhat important	somewhat important	average importance	statistic not available	somewhat important	average importance	somewhat important	statistic not available	somewhat important
Hong Kong	very important	very important	very important	important	very important	important	important	important	important	statistic not available	important	important	important	important	important
Hungary	very important	important	very important	important	very important	somewhat important	average importance	statistic not available	important	statistic not available	somewhat important	important	somewhat important	statistic not available	somewhat important
India	important	important	important		important		important				important			important	
Indonesia	important	somewhat important	important	important	important	important	not at all important	somewhat important	important	important	somewhat important	important	important	statistic not available	somewhat important
Israel	very important	somewhat important	important	somewhat important	important	somewhat important	not at all important	somewhat important	somewhat important	not at all important	not at all important	very important	somewhat important	somewhat important	somewhat important
Korea	very important	important	very important	important	very important	somewhat important	average importance	somewhat important	important	statistic not available	important	very important	somewhat important	not at all important	somewhat important
Malaysia	very important	very important	very important	very important	very important	important	important	somewhat important	important	somewhat important	average importance	very important	somewhat important	somewhat important	very important
Peru	not at all important	somewhat important	very important	important	somewhat important	somewhat important	somewhat important	somewhat important	average importance	important	somewhat important	statistic not available	somewhat important	important	somewhat important
Philippines	very important	important	important	very important	important	important	important	statistic not available	important	statistic not available	important	statistic not available	important	important	statistic not available
Poland	very important	very important	very important	important	very important	important	somewhat important	very important	important	somewhat important	very important	important	important	very important	average importance
South Africa	important	important	very important	important	very important	statistic not available	not at all important	not at all important	important	not at all important	not at all important	somewhat important	statistic not available	important	statistic not available
Thailand	very important	average importance	very important	average importance	important	average importance	average importance	important	important	average importance	somewhat important	statistic not available	important	average importance	average importance

	How important are the following labour market indicators for monitoring and forecasting at your institution?														
	unem- ployment rate	labour force participa- tion	average wage rate	minimum wage	total employ- ment	under- employ- ment rate	youth unem- ployment	migration flows	sectoral employ- ment	employ- ment in informal sector	age profile of labour force	job vacancy rates	average hours worked / employee	employ- ment compo- nents of PMIs	distribu- tion of wage increases
Türkiye	important	important	very important	important	important	average importance	somewhat important	somewhat important	important	important	somewhat important	important	important	important	important

Source: EMDGM 2023 Questionnaire

## Question 10 (part 2)

Table 10.2

	How important are the following labour market indicators for monitoring and forecasting at your institution?							Use the space below if you want to add any qualification or comment on the above responses:
	rate of wage indexation	outcome of collective agreements	unit labour costs	any other (First option)	Answers for "any other (first option)"	any other (Second option)	Answers for "any other (second option)"	
Argentina	very important	very important	important	informal income	important			The monitoring of the labour market indicators is a key input for the CPI forecasting models at the CB. A lot of focus is placed in the wage bargaining process
Brazil	statistic not available	important	statistic not available					
Chile	statistic not available	not at all important	very important					
China	average importance	average importance	important					
Colombia	statistic not available	statistic not available	important	labour flows	very important	hiring expectations	very important	
Czech Republic	statistic not available	somewhat important	important	Social insurance data	statistic not available	Leading indicators	average importance	
Hong Kong	statistic not available	statistic not available	important	Online job advertisement	important			For more details on online job postings, please see "Box 3: A big data analysis of Hong Kong's labour demand using online job advertisements" in HKMA Half-yearly Monetary and Financial Stability Report September 2020.
Hungary	important	statistic not available	important	inflation expectations	important	tightness of the labour market	very important	
India								Employment and unemployment data are monitored for assessing labour market conditions, but they are not being used for forecasting purposes due to non-availability of timely and high frequency official data covering the entire economy.
Indonesia	important	important	important					
Israel	not at all important	important	average importance					
Korea	somewhat important	somewhat important	somewhat important	employment by status of worker (regular, temporary, self-employed)	very important	flow rates (eg, employment to unemployment)	very important	
Malaysia	statistic not available	statistic not available	somewhat important					
Peru	statistic not available	somewhat important	somewhat important					
Philippines	statistic not available	statistic not available	statistic not available					Unemployment rate and minimum wage increases enter into the BSP's main forecasting and scenario-building models. Other available labour indicators are monitored to assess demand conditions and the quality of economic recovery following the pandemic.



## Question 10 (part 2)

Table 10.2

	How important are the following labour market indicators for monitoring and forecasting at your institution?						Use the space below if you want to add any qualification or comment on the above responses:	
	rate of wage indexation	outcome of collective agreements	unit labour costs	any other (First option)	Answers for "any other (first option)"	any other (Second option)	Answers for "any other (second option)"	
Poland	somewhat important	somewhat important	very important					
South Africa	statistic not available	important	very important					Variables rated as very important are those that feature in our main forecasting model. The other variables typically feature in conjuncture analyses.
Thailand	statistic not available	somewhat important	somewhat important	labour mobility	average importance			Unemployment rate and wage rate are ranked the most important indicators because wage rate is relevant to inflation. In addition, unemployment rate is the most powerful slack indicator to explain wage rate according to econometric results.
Türkiye	important	important	very important					
Vietnam								We do not have enough information to answer above questions.
Source: EMDGM 2023 Questionnaire								

	Could you provide a brief description of how labour market indicators enter into your main models and forecasting? If possible, please highlight any recent change you have made in this respect.
Argentina	The wage growth enters in univariate OLS, VAR and VEC models of Headline and Core inflation. In the estimation of the Phillips Curve enters the output gap estimated by Krysa and Lanteri (2018) which includes a block related to the labour market dynamics.
Brazil	Short-term forecasts for unemployment rate and payroll (net job creating) are provided by specialists who monitor the labour market data using reduced-form models and other sources of information. These two variables together with capacity utilization rate in the manufacturing sector and GDP are used to compute the output gap measure (an unobserved variable) along with the other equations of the small scale semi-structural model, estimated with Bayesian techniques, in order to forecast inflation.
Chile	We use cointegrated VAR models for short-run forecasting, including employment, wages, and other relevant macro variables. We use these models to forecast two quarters ahead. For medium-run forecasts we use structural models. Labour market variables are introduced in the structural model, XMAS, which has search and matching frictions following the seminal work by Mortensen and Pissarides (1994). In this type of labour market specification, firms publish vacancies to hire workers, and the unemployed seek employment, which allows inputting an unemployment rate and other relevant labour market variables into the model. In addition, pairings are allowed to be broken both endogenously, as they respond to economic shocks, and exogenously. Financially constrained and unconstrained workers have the same productivity. For simplicity, it is assumed that an agent negotiates on behalf of workers' single contract based on the average productivity. In this context, all the workers receive the same salary and work the same number of hours. The evolution of employment, on the other hand, depends on the number of employees who lose their jobs and on new pairings. The latter is a function of the number of unemployed and the vacancies that companies decide to open. The greater the number of workers looking for work and the greater the number of vacancies available, the greater the creation of new jobs.
China	When forecasting the impact of labour market on economic growth, the quantity and quality of labour supply are usually considered. The former is mainly measured by the total employment, while the latter is mainly measured by the education level of the employed. On the one hand, workers with a certain level of education can directly improve economic output, and workers with a higher level of education have a higher marginal output level. On the other hand, human capital promotes the total factor productivity through innovative activities, and human capital has the function of "technology carrier". In the Cobb-Douglas production function, the former plays its role through L (labour force), and the latter through A (technology), which can be realized by constructing the functional relationship between indicators such as geographical distribution of human capital or structural density and technology.
Colombia	Some labour market indicators, such as unemployment, employment, and labour participation rates, are used to generate short-term forecasts of the unemployment rate. In turn, these short-term forecasts, along with GDP forecasts, feed a battery of models mainly based on Okun's law relations that are used to produce medium-term forecasts of the unemployment rate. The results of these models, along with forecasts of core inflation and other macroeconomic variables, as are used to estimate and forecast the non-accelerating inflation rate of unemployment (NAIRU). The unemployment gap obtained from the NAIRU and unemployment forecasts, in turn, feeds models that nowcast the output gap, which is an essential input for the main models for monetary policy implementation.
Czech Republic	We process all the data, that is available, and prediction based on several simple or medium-complicated models. The key indicator is then used again in the structural DSGE model. The endogenous prediction is then return back to econometric models and used for calculation of all-time series.
Hong Kong	In our in-house forecasting model for the Hong Kong economy, we have a Phillips curve equation which links inflation (excluding housing rental and food) to unemployment gap. In general, we are flexible and adopt a holistic approach by looking at a host of different indicators (for example, see question 10 above) when formulating models or doing forecasts. In recent years, we have also used data science (eg web-scraping) to explore big data of online job advertisements to detect labour demand changes in a more timely manner during the COVID-19 pandemic.
Hungary	We have a model for forecasting wages, which is based on the tightness of the labour market, inflation expectations, minimal wages and labour productivity. We also monitor sectoral labour market indicators, such as job vacancy rate, number of workers, etc.
India	Labour market indicators such as unemployment rate, labour force participation and rural wage rate are used to assess the labour market situation. The impact of wage shock (proxied by rural wage) as a driver of inflation (ie in terms of deviation of CPI inflation from its deterministic trend) is assessed in the Monetary Policy Report (MPR) published by the RBI.

Could you provide a brief description of how labour market indicators enter into your main models and forecasting? If possible, please highlight any recent change you have made in this respect.	
Indonesia	Bank Indonesia involves labour market indicators and monitors employment dynamics in economic assessments. Labour market indicators are one of the main economic variables that determine the level of prosperity, the standard of living, and the poverty level of an economy. At the same time, increasing prosperity and living standards and minimizing poverty is one of the main goals and is included in the economic policy framework. As the monetary authority, Bank Indonesia needs to analyze the labour market thoroughly and granularly and consider the impact of labour market development on economic growth and inflation to determine the necessary policies to maintain stability and recovery momentum. Bank Indonesia needs to consider and monitor various indicators for labour market conditions. Monitoring multiple indicators of the labour market is important to assess more on the economic phenomenon change, such as how the shift in unemployment rate represents the labour market slack caused by the Covid-19 pandemic, the scarring effect in labour on sectoral and industries, and the difference of labour conditions that will impact on the capacity of the work as a factor of production to support economic recovery.
Israel	<p>The main labour-market indicators affecting our recent staff-forecasts are:</p> <ol style="list-style-type: none"> <li>1. Tight labour market with low unemployment and high employment rates (in main working age population and also compared with pre-Covid trends).</li> <li>2. High vacancy rate which is expected to support employment also against the background of monetary-policy tightening. Thus, the staff-forecast assumes only a minor increase of unemployment (to 3.5%, compared with 3.1% today).</li> <li>3. Relatively low real wages (due to inflation surprises) which are expected to contribute to a moderation of private consumption.</li> </ol>
Korea	We use the theory of equilibrium unemployment and flow-based forecasting model to predict unemployment rate and the number of workers employed. The main variables for forecasting are flow rates such as employed to unemployed, unemployed to inactivity and so on.
Malaysia	Labour market indicators and projections are incorporated in models and framework used to forecast growth and inflation, as well as output gap. On growth, labour market indicators including income, employment, and unemployment rate are used in the forecast of private consumption. In more recent times, shocks to the economy are prompting a revisiting of consumption dynamics (including marginal propensity to consume by household income brackets). On inflation, the forecast incorporates indicators such as labour market slack and wage growth. Recently, the high-cost environment amid strong demand conditions prompted a revisiting of Philips curve to take into account potential non-linearity. On output gap, NAIRU estimation models are being revisited to take into consideration pandemic-induced shocks and indicators for demand and structural changes like increased frictions in the labour market. In terms of broad analyses, key indicators such as employment, unemployment rate, wages and labour productivity were also assessed to identify the extent of slack and tightness in labour market. Recently, more granular indicators, including labour force participation, employment, and unemployment rates by different demographics are also tested to account for pandemic-induced frictions.
Peru	Labour market indicators are part of the calculation of potential GDP. Labor and labor intensity use help us to characterize the dynamics of the economics supply, and, in this regard, it is instrumental to identifying demand pressures. The most recent change corresponds to the introduction of labor informality, which has implications in aggregated productivity as labor productivity is heterogenous across formal and informal sectors.
Philippines	<p>Unemployment rate is used in the Policy Analysis Model for the Philippines (PAMPh). Specifically, in the PAMPh, the unemployment gap is determined mainly by the output gap. A positive output gap reduces the unemployment rate, while a negative output gap contributes to a higher unemployment. As the endogenous policy rule in the model helps close the output gap, it does help bring the unemployment rate to its long-term trend.</p> <p>Meanwhile, in assessing price pressures in the domestic economy, the BSP closely monitors wage dynamics, which are duly considered in the BSP inflation models. The BSP's baseline inflation forecast incorporates adjustments in minimum wages that are consistent with the country's labour productivity growth and historical wage adjustments. Adjustments in non-agricultural minimum wage are based on the wage orders issued by the Regional Tripartite Wages and Productivity Boards in various jurisdictions.</p> <p>Other available labour indicators are monitored/assessed as necessary. During the COVID-19 pandemic, the BSP has increasingly looked at the quality of employment generation to gauge the extent of the economic recovery as well as the possible long-term scarring given the pandemic's impact on actual labour supply and the economy's productive capacity.</p>

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The NECMOD model, the main tool for macroeconomic projections and analyses in Narodowy Bank Polski, features a fully-fledged labour market block with participation rates and non-accelerating wage rate of unemployment (NAWRU), endogenously determined.

The labour market indicators which enter NECMOD are listed below.

The NECMOD variables determined by the labour market indicators are presented below each indicator (sign (+) or (–) stands for the positive or negative impact of the labour market indicator).

- unemployment rate:

- wage growth (-)

- unemployment benefit (+)

- labour force participation (decomposed into four age groups in order to account for shifts in the labour supply tied to demographic factors):

- unemployment rate (-)

- potential GDP (+)

- average wage rate:

- selected general government revenue and expenditure items (i.a. tax and social security contributions, pensions, general government wage fund) (+)

- current account net remittances (-)

- production capital of enterprises in equilibrium (-)

- labour force participation (+)

- households' disposable income (+)

- unit labour costs (+)

- minimum wage:

- average wage rate (+)

- labour force participation (+)

- the share of employed, receiving minimal wage (+)

- NAWRU (+)

- total employment:

- labour force participation (+)

- unit labour costs (+)

- households' disposable income (+)

- sectoral employment - the model distinguishes between the number of persons employed in agriculture and in the non-agricultural sectors.

- the share of persons employed in agriculture in the total employment:

- operating surplus of household (+)

- labour force participation (+)

- the share of persons employed in the non-agricultural sectors in the total employment:

- wage fund (+)

- migration flows - immigration inflow of non-EU residents:

- potential GDP (+)

- average wage rate (-)

- current account net remittances (-)

- unit labour costs

- CPI inflation (core inflation, food prices and energy prices) (+)

- gross fixed capital formation deflator (+)

- NAWRU

Poland

## Question 11

Table 11

Could you provide a brief description of how labour market indicators enter into your main models and forecasting? If possible, please highlight any recent change you have made in this respect.	
	<p>- potential GDP (-)</p> <p>- wage growth (+)</p>
South Africa	<p>The SARB uses the Quarterly projection model (QPM) as its main forecasting model. In this model the labour market price pressures are captured via the real unit labour cost gap, which measures compensation relative to productivity.</p> <p>As a measure of slack, the QPM uses the output gap instead of the unemployment rate in part because unemployment in South Africa is largely structural in nature.</p> <p>The SARB also makes use of the ""core"" econometric model which is a stylized structural error-correction model estimated on South Africa's historical economic relationships. In the core model employment in the private sector is determined in the long run by both real wages (data obtained from the Quarterly Employment Survey) as well as overall economic activity as proxied by the gross domestic product (GDP).</p>
Thailand	<p>In the Bank of Thailand macro econometric model, labour market indicators such as average earnings and minimum wage are used with others economic variables to estimate total working hours and total earnings respectively. Total earnings will be used to indicate private consumption via income channel to eventually estimate the GDP.</p>
Türkiye	<p>In our current models, an inverse relationship between unemployment gap and output gap is defined in line with Okun's Law. To associate the changes in wages with the unemployment gap, a wage Philips curve is defined that captures the backward indexation behavior in wages. Also, domestic real marginal cost variable is defined to include the deviation of real wages from its trend.</p> <p>In our macro econometric model that is being developed currently, we enhance the supply side of the economy to include more of labour market dynamics. For this purpose, a labour demand function is defined to include the real minimum wage and economic activity. Then, the labour demand obtained from this function enters into a Cobb-Douglas type production function as a factor of production, along with capital. Finally, the supply side and demand side forecasts for economic activity affect the dynamics of inflation. We continue to work on enhancing the labour market block in the macro econometric model to capture the dynamics of potential labour, actual labour and employment.</p>
Vietnam	<p>Our labour market data is not sufficient to enter into our main models and forecasting</p>

Source: EMDGM 2023 Questionnaire

Please list any key studies on the role of labour markets in inflation for your country below.

Argentina	Garegnani, L. y L. D'amato (2009) "La dinámica de corto plazo de la inflación: estimando una curva de Phillips híbrida neokeynesiana para Argentina (1993-2007)", Ensayos Económicos, BCRA, 55, Julio-Septiembre 2009, pp 33-56. <a href="https://www.bcra.gob.ar/PublicacionesEstadisticas/Resumen_ensayos.asp?id=306">https://www.bcra.gob.ar/PublicacionesEstadisticas/Resumen_ensayos.asp?id=306</a>
	García-Cicco, J., L. Garegnani, M. Gómez Aguirre, A. Krysa y L. Libonatti (2022) "Regularidades Empíricas de la Inflación en Latinoamérica" Documento de Trabajo N°101, BCRA, Mayo 2022. <a href="https://www.bcra.gob.ar/Institucional/DescargaPDF/DownloadPDF.aspx?Id=1034">https://www.bcra.gob.ar/Institucional/DescargaPDF/DownloadPDF.aspx?Id=1034</a>
	Krysa, A. and L. Lanteri (2018) "Estimación del producto potencial y de la brecha del producto, para Argentina: aproximaciones a partir de un filtro multivariado y del método de la función de producción". Central Bank of Argentina (BCRA) Economic Research Working Paper N° 80. DOI: <a href="https://bcra.gob.ar/Institucional/DescargaPDF/DownloadPDF.aspx?Id=815">https://bcra.gob.ar/Institucional/DescargaPDF/DownloadPDF.aspx?Id=815</a>
Brazil	Banco Central do Brasil (2022). Labour market on the radar. Inflation Report, September 2022, 83-85. ( <a href="https://www.bcb.gov.br/content/ri/inflationreport/202209/ri202209b9i.pdf">https://www.bcb.gov.br/content/ri/inflationreport/202209/ri202209b9i.pdf</a> )
	Banco Central do Brasil (2022). Labour market situation according to alternative indicators. Inflation Report, March 2022, 43-47. ( <a href="https://www.bcb.gov.br/content/ri/inflationreport/202203/ri202203b4i.pdf">https://www.bcb.gov.br/content/ri/inflationreport/202203/ri202203b4i.pdf</a> )
Chile	2019
	1. Albagli, E., M. Canales, C. De La Huerta, M. Tapia, and J.M. Wlasiuk (2019), ""Firm Productivity Dynamics and Distribution: Evidence for Chile using Micro Data from Administrative Tax Records,"" Working Paper 831, Central Bank of Chile.
	2. García, B., S. Guarda, M. Kirchner, and R. Tranamil (2019), ""XMAS: An Extended Model for Analysis and Simulations,"" Working Paper 833, Central Bank of Chile.
	3. Albagli, E., M. Canales, A. Martner, M. Tapia, and J.M. Wlasiuk (2019), ""Misallocation or Misspecification? The Effect of ""Average"" Distortions on TFP Gains Estimations,"" Working Paper 835, Central Bank of Chile.
	2020
Colombia	4. García, B. and J. Guerra-Salas (2020), ""On the Response of Inflation and Monetary Policy to an Immigration Shock,"" Working Paper 872, Central Bank of Chile.
	2022
	5. Calani, M., B. García, T. Gómez, M. González, S. Guarda, and M. Paillacar (2022), ""A Macro Financial Model for the Chilean Economy,"" Working Paper 953, Central Bank of Chile.
Colombia	- Arango, L. E. (coordinador) et al (2022). Efectos macroeconómicos del salario mínimo en Colombia. Ensayos sobre Política Económica (ESPE), núm. 103. Banco de la República de Colombia.
	- Arango, Luis E., Andrés F. García y Carlos E. Posada. (2013). "Inflación y desempleo en Colombia: Nairu y tasa de desempleo compatible con la meta de inflación. 1984-2010". In El mercado de trabajo en Colombia: Hechos, tendencias e instituciones, edited by Luis Eduardo Arango and Franz Hamann. Bogotá: Banco de la República, 333-356.
	- Arango, Luis E., Luz K. Ardila, y Miguel Gómez. (2011). "Efecto del cambio del salario mínimo en el precio de las comidas fuera del hogar en Colombia". In El mercado de trabajo en Colombia: hechos, tendencias e instituciones, edited by Enrique López-Enciso and Franz Hamann. Chapter. 21, 872, Bogotá: Banco de la República. [on line], available in: <a href="http://babel.banrepcultural.org/digital/collection/p17054coll18/id/314/rec/2">http://babel.banrepcultural.org/digital/collection/p17054coll18/id/314/rec/2</a>

Please list any key studies on the role of labour markets in inflation for your country below.

Czech Republic	<p>Empirical Analysis of Labour Markets over Business Cycles: An International Comparison (2015, Jan Bruha, Jirí Polanský)</p> <p>The Effects of Minimum Wage Increases in the Czech Republic (2021, Jakub Grossmann)</p> <p>Labour Market Flows over the Business Cycle: The Role of the Participation Margin (2018, Kamil Galuščák, Jan Šolc, Pawel Strzelecki)</p>
Hong Kong	<p>Cheng, Michael and Ho, Wai-Yip Alex. "A Structural Investigation into the Price and Wage Dynamics in Hong Kong". No 0920, Working Papers (2009), Hong Kong Monetary Authority.</p> <p>Genberg, Hans, and Laurent Pauwels. "Inflation in Hong Kong, SAR-In search of a transmission mechanism." Working Paper no.1 (2003), Hong Kong Institute of Monetary Research.</p> <p>Genberg, Hans, and Laurent L. Pauwels. "Wage-price dynamics and deflation in Hong Kong." Pacific Economic Review 10.2 (2005): 191-216.</p> <p>Genberg, Hans, and Laurent L. Pauwels. "An Open-Economy New Keynesian Phillips Curve: Evidence from Hong Kong." Pacific Economic Review 10.2 (2005): 261-277.</p> <p>P Vere, James. "Disentangling Wages and Consumer Price Inflation in Hong Kong." Economic Letters (2022).</p>
India	<p>1. Sujata Kundu, "Rural Wage Dynamics in India: What Role does Inflation Play?," Reserve Bank of India Occasional Papers Vol. 40, No. 1, 2019</p> <p>2. Reserve Bank of India, "An Examination of the Rural Prices and Wages Dynamics in India" MPR October 2022 Box II.2</p> <p>3. G V Nadhanael, "Recent Trends in Rural Wages: An Analysis of Inflationary Implications" Reserve Bank of India Occasional Papers Vol. 33, No. 1 &amp; 2: 2012</p>
Indonesia	
Israel	<p>Binyamini, A. (2021). A Structural Investigation of Israeli Labour Market Dynamics. Bank of Israel discussion Paper 2021.19.</p> <p>Brand, G., The mutual links between price inflation and the labour cost in Israel, (work in progress).</p> <p>Elkayam, D., &amp; Ilek, A. (2013). Estimating the NAIRU using both the Phillips and the Beveridge curves (No. 2013.10). Bank of Israel.</p> <p>Argov, E., A. Barnea, A. Binyamini, E. Borenstein, D. Elkayam, and I. Rozenshtrom (2012). MOISE: A DSGE Model for the Israeli Economy. Bank of Israel discussion Paper 2012.06.</p> <p>Lavi, Y., &amp; Sussman, N. (2007), "The Phillips Curve in Israel", Israel Economic Review, 5(1), 93–109.</p> <p>Ribon, S. (2004), "A New Keynesian Phillips Curve for Israel", Discussion Paper No. 2004.11. Bank of Israel.</p> <p>Elkayam, D., (2002). "A Model for Monetary Policy Under Inflation Targeting, The Case of Israel" Vol. 49, No. 1, pp 30-45.</p> <p>Caspi I. and S. Ribon, (2022), "The link between activity and inflation in Israel in recent decades", in Yaron and Strawczynski, ed., Monetary Policy in a Period of Price Stability, Bank of Israel (Hebrew).</p>
Korea	<p>Most of the academic papers on the relationship between inflation and the labour market are written in Korean.</p> <p>- Chang, Lee and Choi (2022), "Changes in the Macroeconomics Relationships among Output, Employment and Prices", the Korean Journal of Economic Studies, the Korean Economic Association (in Korean)</p> <p>- Hansen, Mongardini, and Zhang (2019), "Labour Market Slack and the Output Gap", IMF Working Paper WP/19/167 (in English)</p>
Malaysia	<p>1. Role of global slack: Assess the role of global slack in determining inflation among Asia Pacific economies; <a href="https://www.bnm.gov.my/documents/20124/767013/p3ba2.pdf">https://www.bnm.gov.my/documents/20124/767013/p3ba2.pdf</a></p> <p>2. Living wage: Introducing the concept of living wage as a way to improve living standards; <a href="https://www.bnm.gov.my/documents/20124/829200/cp04_001_box.pdf">https://www.bnm.gov.my/documents/20124/829200/cp04_001_box.pdf</a></p>
Philippines	<p>• Alarcon, S.J, Alhambra, P.R., Amodia, R. &amp; Bautista, D.M. (2020). Policy Analysis Model for the Philippines. BSP Working Paper Series, 2020-12.</p> <p>• Abenoja, Z.R.R., Dacio, J.E. &amp; Romaraog, M.R.S. (forthcoming) Monetary policy formulation and labour market during the COVID-19 pandemic period. Labour Book Report, Chapter 12.</p> <p>• Abenoja, Z. R. R., Dacio, J. E., Castañares, S. J. A., Ocampo, J. C. G., &amp; Romaraog, M. R. S. (2022). The BSP's Forecasting and Policy Analysis System. Philippine Review of Economics, 59(1), 77-107.</p>

Please list any key studies on the role of labour markets in inflation for your country below.

Poland	<p>Szafranek K. (2017). Flattening of the New Keynesian Phillips curve: Evidence for an emerging, small open economy, <i>Economic Modelling</i>, Elsevier, vol. 63(C), pp 334-348.</p> <p>Hulej, M., &amp; Grabek, G. (2015). Output gap measure based on survey data. National Bank of Poland Working Paper, (200).</p> <p>Nikulin D.: Relationship between wages, labour productivity and unemployment rate in new EU member countries, <i>Journal of International Studies</i>. -Vol. 8., iss. 1 (2015), pp 31-40</p> <p>Pošta, V. (2015). Time-Varying NAIRU and Some of Its Determinants—A Semi-Structural Approach: Evidence from Eastern European Economies. <i>Eastern European Economics</i>, 53(2), pp 149-165.</p>
South Africa	<p>Estimating a New Keynesian Wage Phillips Curve', South African Reserve Bank Working Paper Series No. WP/20/13, December 2020. <a href="https://www.resbank.co.za/content/dam/sarb/publications/working-papers/2020/WP%202013.pdf">https://www.resbank.co.za/content/dam/sarb/publications/working-papers/2020/WP%202013.pdf</a></p> <p>Merrino, S. 2021 'Wage inequality under inflation-targeting in South Africa' South African Reserve Bank Working Paper. Available <a href="https://www.resbank.co.za/en/home/publications/publication-detail-pages/working-papers/2021/WageinequalityunderinflationtargetinginSouthAfrica">https://www.resbank.co.za/en/home/publications/publication-detail-pages/working-papers/2021/WageinequalityunderinflationtargetinginSouthAfrica</a></p> <p>Vermeleun, C. 2017. 'Inflation and unemployment in South Africa: Is the Phillips curve still dead?' <i>Southern African Business Review</i> 21: 20–54.</p>
Türkiye	<p>- Gökçü, M. (2021). ""Estimating Time-Varying Potential Output and NAIRU Using a Multivariate Filter for Türkiye"", CBT Working Paper No: 21/39</p> <p>- Andiç, S.B., Küçük, H., Ögünç, F. (2014) ""Inflation Dynamics in Türkiye: In Pursuit of a Domestic Cost Measure"", CBT Working Paper No: 14/20</p> <p>- Ögünç, F. (2019). ""A Bayesian VAR Approach to Short-Term Inflation Forecasting"", CBT Working Paper No: 19/25</p>
Vietnam	<p>The relationship between inflation and unemployment and research reality in Vietnam - MSc. Le Thi Xoan - Ho Chi Minh City University of Natural Resources and Environment;</p> <p>Labour and Social Trends in Vietnam 2012-2017 - Institute of Labour and Social Sciences and International Labour Organization.</p>

Source: EMDGM 2023 Questionnaire