Central Bank of the Republic of Türkiye note for the 2023 Emerging Markets Deputy Governors Meeting

January 2023

Inflation and labour markets in the wake of the pandemic.

What have been the main drivers of inflation since its flare-up? How far has this reflected pandemic-specific exogenous factors (eg uneven reopening of the economy and international supply disruptions) and policies (eg strong fiscal and monetary policy easing)? To what extent have fiscal measures (eg subsidies, taxes or price caps) sought to reduce price pressures linked to higher commodity prices?

Inflation started to increase sharply after November 2021. Whereas inflation was 21.3% in November 2021, it rose to 36.1% at the end of 2021. The highest inflation rate was 85.5%, in October 2022. In December 2022, inflation declined sharply to 64.3% due to the base effect.

At the beginning of this process, the movements and volatilities in exchange rates, deterioration of pricing behaviour, indexation of prices to exchange rates, deterioration of inflationary expectations, supply side factors and developments in managed/driven prices caused inflation to increase. In the following period, the prices of energy, metal, food and agricultural products increased due to geopolitical developments, high import prices and transportation costs. These factors further deepened problems relating to inflation.

Therefore, inflation was not driven by demand factors, but by negative supply shocks. The current inflation is not a national phenomenon relating to monetary policymaking in Türkiye alone. Rather, it is a global issue faced by almost all central banks around the world and particularly arises from issues relating to energy and food price shocks.

Due to strong action taken by the Central Bank of the Republic of Türkiye (CBRT), inflation expectations are anchored well below the current actual inflation figures. In addition, core indicators and inflation expectations have started to improve, and inflation has settled on a marked downward trend recently. We have already started to see improvement in these indicators which will be more pronounced in the coming months. Moreover, in order to mitigate cost pressures that result from rising energy prices, both consumer and producer electricity and natural gas tariffs are subsidised. With these measures, as well as the improvement in inflation expectations, our estimate for the year-end inflation in 2023 is 22.3%.

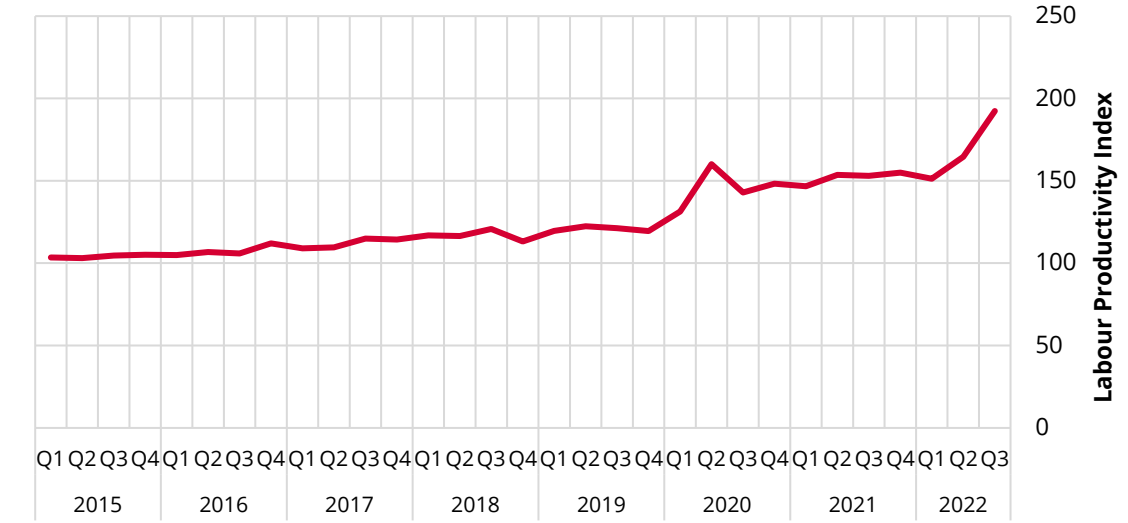
Have wage increases matched the rise in inflation? Do you see any evidence of second-round effects through the labour market and of wage-price spirals? If not, do you expect to see them in the near future?

Wages play a major role in inflation through cost-push and demand-pull factors. During the pandemic, wage growth was slower compared with the pre-pandemic period in Türkiye. However, a substantial minimum wage hike for 2021 (by 21.6%) arising from the strong course of economic activity made us closely monitor the unit labour costs and its pass-through to inflation. Wage growth in Türkiye stayed below inflation between the last quarter of 2021 and the second quarter of 2022. On the other hand, in tandem with a 30% additional increase in the minimum wage in the second half of 2022, average real wages showed a significant jump in the third quarter of 2022. Increases in wages were accompanied by increases in working hours and labour productivity during the first nine months of 2022. According to the seasonally adjusted series, the labour productivity index increased by 24% in the third quarter of 2022, compared with the last quarter of 2021 (Graph 1).

The high rate of minimum wage increases and indexation of wages to past inflation is expected to lead wage rises in 2022 to higher levels than in the previous year. As a result of taking into account the impact of the increase in total wages (especially the minimum wage hike), labour market conditions and past inflation – no significant pressure on inflation is expected on the real unit labour costs front in 2023.

Labour productivity index

seasonally adjusted, 2003 = 100 Graph 1



Sources: Ministry of Labour and Social Security; CBRT.

How much slack is there in the labour market at the aggregate and sectoral levels, including differences between the formal and informal sectors? How even have wage increases been across industries or labour market segments?

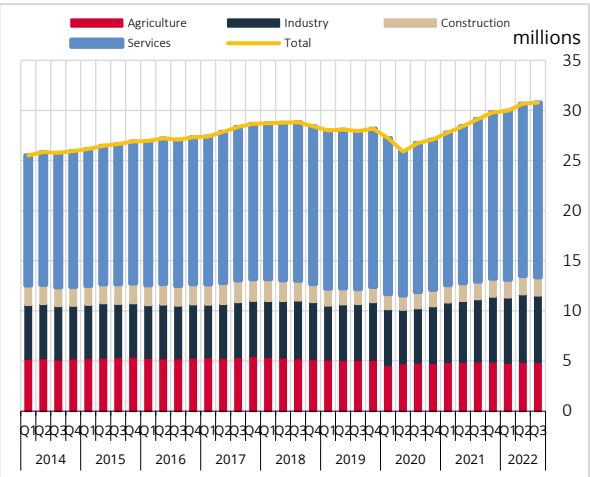
The outbreak of the pandemic adversely affected Türkiye's labour market. However, job retention policies helped to mitigate those effects. Türkiye has managed to increase its participation rate and employment ratio to levels seen before the pandemic. The services sector, constituting 56% of total employment, generated employment after the pandemic year and is currently at its highest level of employment historically. The reduced employment rate due to the Covid-19 pandemic recovered in the subsequent year. Türkiye created more than 3.6 million jobs between the first quarter of 2020 and the third quarter of 2022. Services and industry sectors constituted 1.9 million and 1.1 million jobs, respectively (Graph 2.A). Two million of the jobs created are held by males, however female employment has increased by 17.7% in this period, more than the 11% rise in male employment in this period (Graph 2.B).

Data show that hourly labour cost indices returned to their long-term trends. Despite increasing labour force participation, the unemployment rate is declining and a change in the potential rate of unemployment is not expected (Graph 3.A). Pre-pandemic slack measures are expected to be relevant to the Turkish economy.

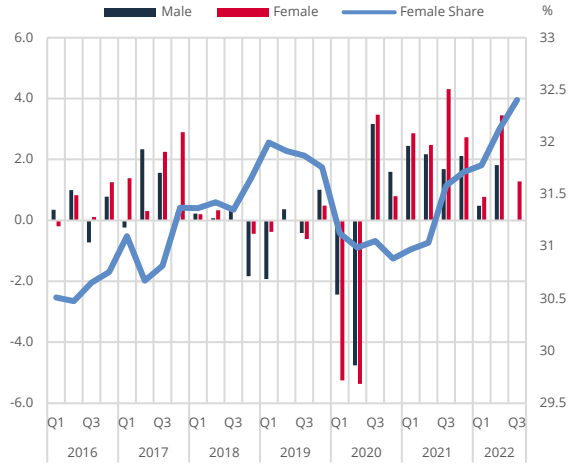
Employment

Graph 2

A: Employment by sector
seasonally adjusted



B: Change in employment by gender
seasonally adjusted[1]



Last observation: Q3 2022.

[1] Quarterly change with respect to previous quarter.

Source: HLFS.

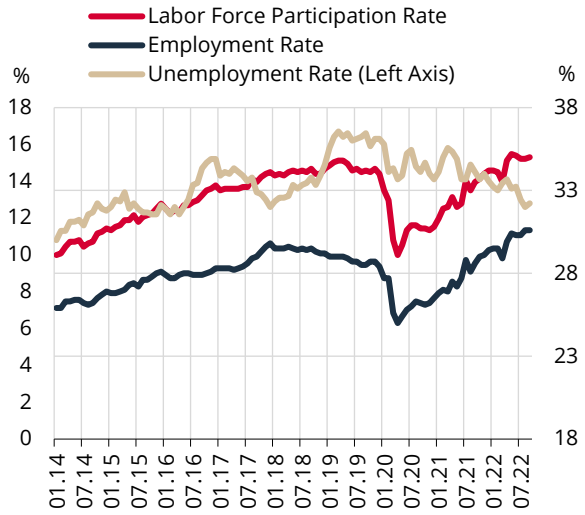
Despite a quick rebound in the labour market since the start of the recovery and a marked decline in unemployment rates, wage growth remains subdued, suggesting that there is still a considerable degree of labour market slack. The decline in real unit wages, which started in the last quarter of 2021, 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 with the previous quarter, while real wage payments decreased by 5.7%. On the other hand, in tandem with an additional increase of 30% in the minimum wage in the second half of 2022, average wages show a significant jump in the third quarter of 2022 (Graph 3.B).

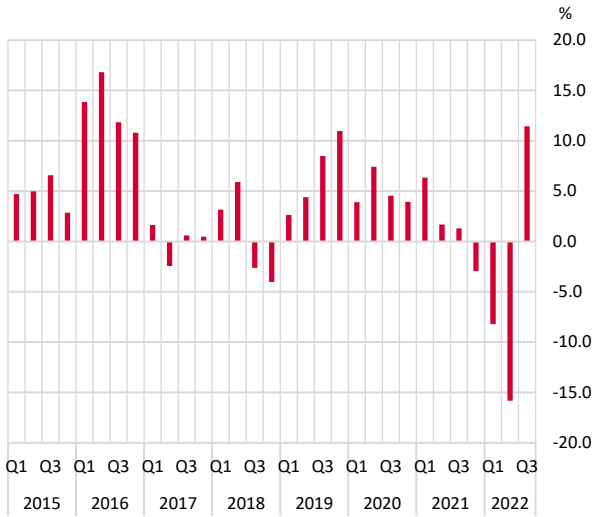
Labour force indicators and real wages

Graph 3

A: Labour market indicators
seasonally adjusted



B: Change in real wages
yoy, %[1]



Last observation: Q3 2022.

[1] Based on daily insurable earnings.

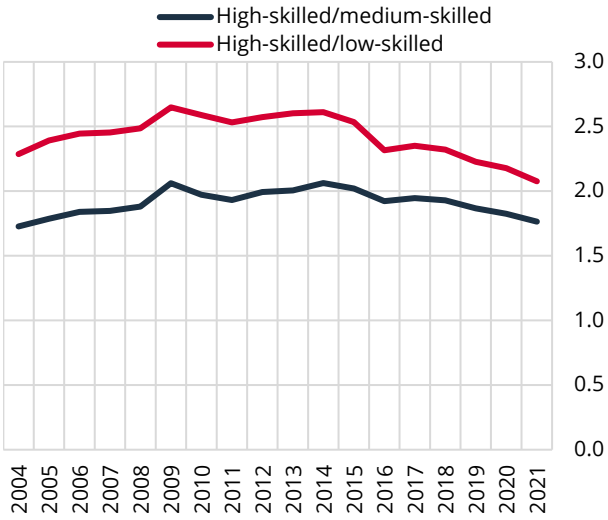
Source: HLFS.

There are significant wage gaps between male and female, highly-skilled and low-skilled, and formal and informal workers, as well as across workers in different sectors in Türkiye. However, in tandem with decreasing inequality in wages, wage gaps are closing over time. According to HLFS, Gini coefficient for net wages of salaried workers declined from 0.33 to 0.28 between 2004 and 2021. In particular, despite the increasing share of highly-skilled workers, wage gaps among high- and low-skilled salaried workers are decreasing over time (Graph 4.A). Similarly, sectoral average wages have become more equal in the same period (Graph 4.B).

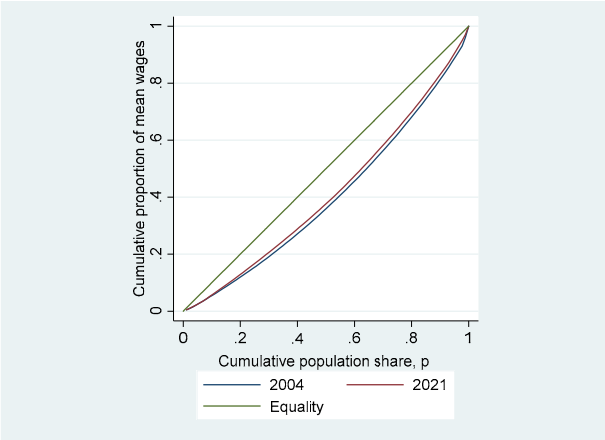
Wages

Graph 4

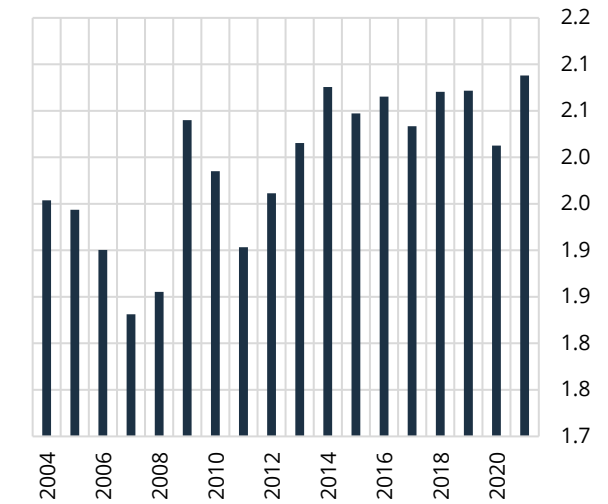
A: Ratio of average wages according to skill level[1]



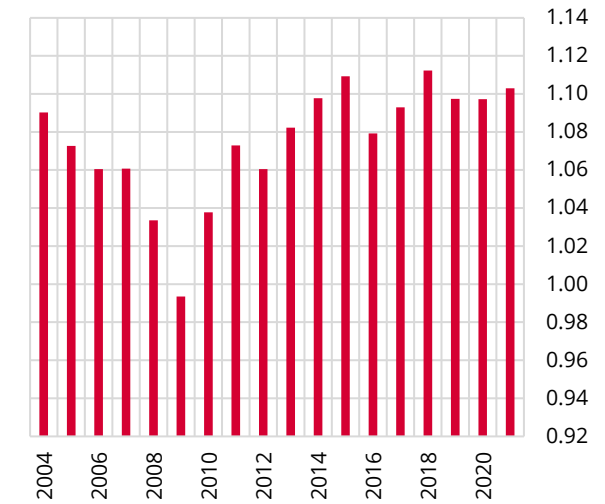
B: Lorenz curve for average wages by sector[2]



C: Ratio of average wages of formal to informal workers[3]



D: Ratio of average wages of male and female workers[4]



Last observation: 2021.

[1, 2, 3, 4] Includes only salaried workers.

Sources: HLFS; CBRT calculations.

On the other hand, no improvements have been observed in closing wage gaps between formal and informal, and male and female workers over time (Graph 4.C and Graph 4.D). This mostly relates to increasing both the formality and participation of females in employment. According to HLFS, the informal employment rate among salaried workers declined from 32.1% in 2004 to 13.7% in 2021. In the same period, the female employment rate increased by 7.2 percentage points to 28%.

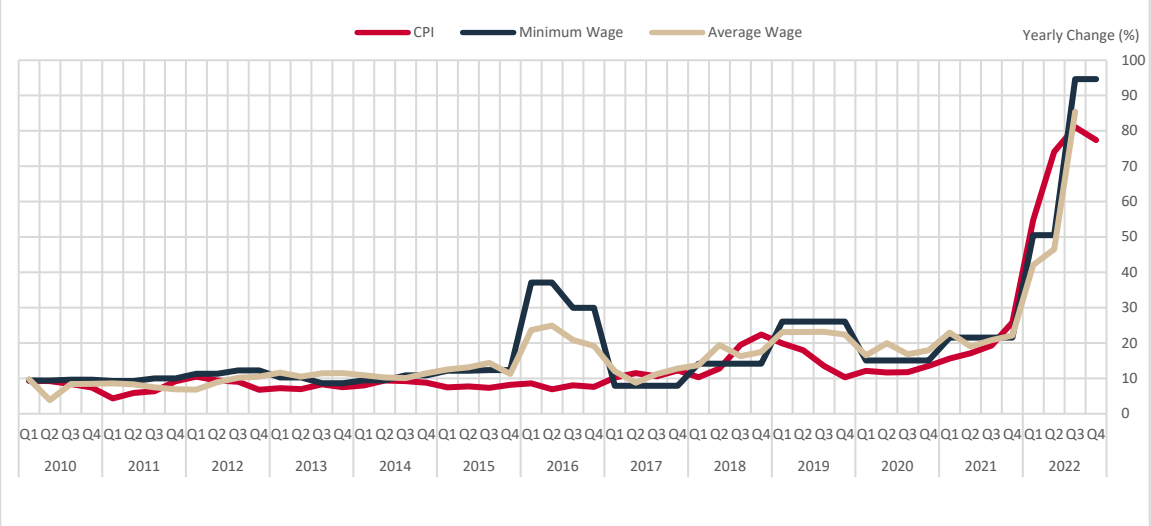
Inflation and labour markets: structural aspects.

What are the key structural features of the labour market that influence wage formation and the inflation process? How have they evolved over time and why (eg policy reforms, globalisation)? Importantly, how far has the behaviour and history of inflation itself influenced those features?

While the wages or salaries in the public sector in Türkiye are determined by the collective bargaining which takes place once every two years, wages in the private sector are agreed in individual labour contracts between employees and employers. However, the minimum wage, which is very common among workers in Türkiye, has a role as a benchmark for all workers in the private sector, including informal workers. According to HLFS, 38% of full-time wage earners earned in the neighborhood of plus/minus 10% of the minimum wage in 2021.

Rates of increase of the salary of state officials and wages of public workers for two-year periods are specified in separate collective bargaining agreements. If the specified rates stay below inflation in one six-month period, the difference between inflation and the specified rate will be paid to the state officials and public workers in the following six-month period. This determination mechanism could cause the consumer price index to move together with changes in the wages of public workers.

Consumer price index, Minimum wage and Average wage — Graph 5



Last observation: Q4 2022.

Sources: TURKSTAT; MoLLS; SSI.

The minimum wage is determined by the Minimum Wage Determination Commission at meetings held in December every year. The representatives of workers, employers and the government participate in these meetings. In this way, the minimum wage is determined so that it will allow workers to live humanely. This situation has led the minimum wage to move together with the consumer price index. In addition, because the minimum wage is a benchmark wage indicator for non-minimum wage workers too, the wages of the other workers show a similar trend to

that of the minimum wage (Graph 5). This is why minimum wage increases, average wage increases determined by the individual labour contracts of private sector employees and collective bargaining agreements all follow similar trends to that of inflation.

What is the role of the informal sector in the labour market and what is its relationship to the formal sector (eg wage spillovers across the two sectors)?

Despite significant levels, informal employment is declining over time in Türkiye. During the period 2004–21, total employment increased by 9.2 million from 19.6 million to 28.8 million. In the same period, strong employment growth was accompanied by significant reductions in informal employment. The informal employment rate – the ratio of employed who are not registered for social security to total employed – declined by 21 percentage points from 50.1% in 2004 to 29% in 2021.

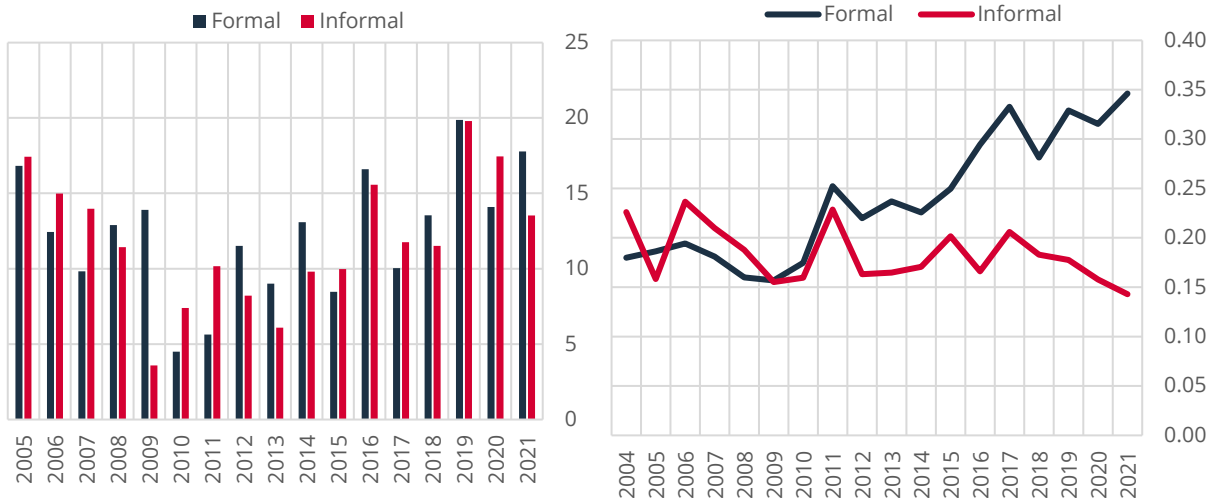
There are several factors contributing to the declining trends of the informal employment rate. The sectoral composition of employed people is one of them. Among agricultural workers, 80% –constituting one fifth of all employed people – are not formally employed. Within non-agricultural sectors, construction has the highest rates of informal employment. Agricultural dissolution shifting agricultural employment to services contributed significantly to the decline in informal employment during the period 2004–21.

Wages by formality

Graph 6

A: Change in average wages by formality[1]

B: Share of minimum wage earners by formality[2]



Last observation: 2021.

[1,2] Includes only salaried workers.

Sources: HLFS, CBRT calculations.

Informality is widespread in micro firms (those with between one and nine employees) and constitutes a significant share of total employment. In 2021, 54% of workers in micro firms were informal. A reduction in the share of micro firms, as well

as a decline in the informality of these firms, has significantly contributed to a decline in the total proportion of those informally employed. In particular, while 64.1% of workers were working in micro firms in 2004, this had dropped to 49.7% in 2021.

Informal employment is more common among women, youth and those with low levels of education. While a lack of experience leads individuals aged under 30 to work informally, those aged 50 and over prefer to work informally due to opportunities for early retirement. In addition, the increase in female labour force participation over time has caused the share of women in employment to increase. The fact that women, who have a greater tendency than men to work informally, are, over time, employed in greater numbers, has the effect of increasing the rate of unregistered employment. Informal employment is also common among those working in low-qualified occupations and among the self-employed. According to the ISCO08 skill level classification, 44.9% of those working in low-skilled jobs and 62% of self-employed people worked informally in 2021. This implies that an increase in the quality of the labour force and salaried working will play a role in reducing the unregistered employment rate.

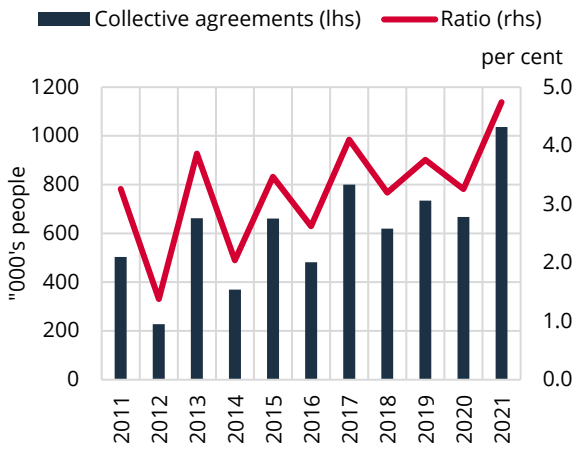
Informal sector workers are earning less than formal sector workers. However, average wages are evolving similarly over time (Graph 6.A). In particular, the average annual growth rate of real wages of formal sector salaried workers is 2% between 2004–21, while this rate is 1.6% for informal sector salaried workers in the same period. On the other hand, rapid increases in minimum wages in recent years has increased the share of minimum wage earners in the formal sector (Graph 6.B). This might create disproportionate increases in informal sector wages in the wage distribution, compared with those in the formal sector.

How centralised is the bargaining process? How has the nature of wage bargaining changed over time? Has centralisation helped or hindered inflation control?

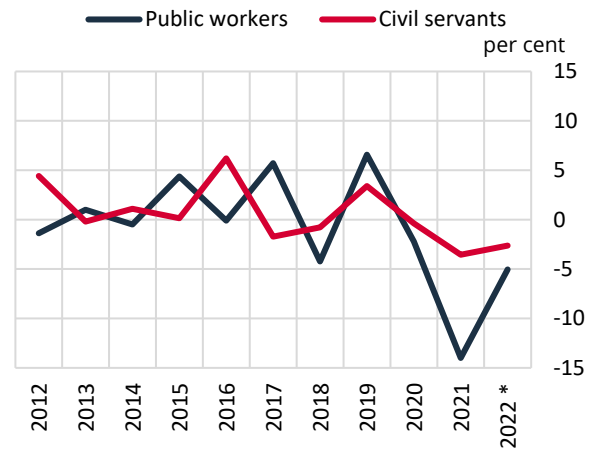
The principles and procedures on collective labour agreements are based on Act No 6356 on Trade Unions and Collective Labour Agreements since 2012. A collective labour agreement shall contain provisions on the conclusion, contents and expiration of a contract of employment. Collective labour agreements may also contain other stipulations as to the mutual rights and obligations of the parties, application and supervision of the agreement and the means by which disputes may be settled.

Collective bargaining, public employees and real wages Graph 7

A: Number of ratio of workers signed collective agreements[1] B: Change in real wage index[2]



Last observation: 2021.



Last observation: 2022.

[1] Ratio of workers signed collective agreements to registered workers. [2] CPI based.

Sources: Ministry of Labour and Social Security; SSI.

* Forecast

Sources: Presidency of Strategy and Budget.

Graph 7.A presents the number and ratio of workers signed collective agreements, based on the Law No 6356, between 2012 and 2021. According to the figures, the number of workers signed up to collective agreements is increasing over time. In particular, the number of workers signed up to collective agreements in 2021 was 1,036,006, which is almost five times the number of workers signed up to collective agreements in 2012. Similarly, the ratio of workers signed up to collective agreements among formal sector workers is increasing, but remains low at around 5% in 2021.

Wages of civil servants and civil servants' pensions are determined according to collective agreements in Türkiye. Changes in the net wages received by civil servants and public workers are presented in Graph 7.B. According to Graph 7.B, net wages received by civil servants and public workers change in line with CPI over time, except in 2021. According to the provisions of the collective agreement with public servants, the wages and pensions of civil servants will increase 8% in January 2023, and by an additional 6% in July 2023.

How important are implicit and explicit wage indexation mechanisms? Have these changed over time? Has policy deliberately tried to reduce them?

In Türkiye, wage formation mostly takes account of inflationary movements. During collective bargaining, representatives of labour unions, the employer's union and government try to refer to the consumer price index yearly change when determining wages and salaries. In addition, the minimum wage, as the benchmark for other wages, also historically moves with inflation. Therefore, these situations may lead wages to move together with the consumer price index.

Yavuz and Coşar (2019) found that the great share of salaried employees earn approximately the minimum wage and consumer price index increases were anchors for private sector workers' wage increases. They also indicated that this situation limited the sensitivity of wages to business cycles and fed the rigidity of wage inflation. Another source of wage indexation is collective bargaining. According to the same blog, while undertaking collective bargaining, it was seen that indexation to past inflation was apparent in wage increases. The institutional set up for wage determination and the high level of inflation contributed to the fact that wage movements were linked to inflation.

What is the role of minimum wages or other salaries determined by the government? More generally, what role does the public sector play in the economy-wide wage bargaining process?

The minimum wage set by the Minimum Wage Determination Commission is an important reference point for collective bargaining both in the public and private sectors in Türkiye. Its level is intensely debated and is used by the government as a reference point for various social transfers.

The tripartite Minimum Wage Determination Commission has set the 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 this has taken place annually since 2016 (apart from in 2022).

The regulations on the minimum wage assert that the Commission should take the social and economic conditions of the country, living condition indices for salaried workers, actual wages and average living standards into account when determining the minimum wage. Article 5 of the regulation forbids discrimination based on mother tongue, race, colour, 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 needs of workers, cost of living indices and food inflation. Moreover, the Commission tracks other developments in the country and global economic trends.

How important is domestic and cross-border inward and outward migration in explaining labour market and wage dynamics?

Migration has several impacts on the economy in terms of labour market outcomes, prices, firm performance, consumption, production etc. The labour market situation of both native and migrant populations could change as a result of migration. However, the impact of migration could differentiate according to the average educational and skill level of the migrant population. Not only do migrant people complement some parts of the native society's skills, but they also substitute other parts of the society's skills. That is why the impact of migration on native people could be heterogeneous. Türkiye has experienced internal and external migration during its history. Some studies have investigated the impact of migration on labour market outcomes in Türkiye.

Berker (2011) investigated the causal impact of internal migration on the labour market outcomes of native urban male workers between 1990 and 2000. According to this study, labour market outcomes worsened for native males located in provinces with a significant rise of migrant inflows. The negative impact of migration was found

to be pronounced among the older population with the highest educational qualifications in his study. Therefore, we can infer that inward migration may be an important factor worsening labour market outcomes for native workers.

In addition to internal migration, Türkiye experienced a huge refugee influx from Syria due to the conflict that started in this country in 2011. This has caused several labour market indicators to be affected. Balkan Konuk and Tümen (2016) found that the impact of Syrian refugees on regional inflation was a 2.5% decrease for the period between 2010 and 2014. They detected that price declines occurred through the informal labour market. Syrian refugees enabled employers to substitute informal workers with a cheaper labour force and price reduction was seen due to substitution in the informal labour market. Ceritoğlu et al (2017) investigated the same refugee influx on labour market outcomes in Türkiye. They observed that employment losses realised in the informal labour market and formal employment slightly increased after the migration. The impact of this movement on wages became negligible. Whereas formality and unemployment rates increased, labour force participation, the informal employment rate and job finding rates fell among the native population. Disadvantaged groups such as women, the young and the less educated, were affected more negatively from such an inflow of refugees. Akgündüz and Torun (2020) examined the impact of the same issue on tasks and capital intensity. Their results indicated that refugee inflow increased the natives' task complexity, reduced the intensity of their manual tasks and increased the intensity of their abstract tasks. Akgündüz et al. (2023) examined the consequences of Syrian refugee inflow to Türkiye in the firm performance and market structure of Türkiye. According to this study, existing Turkish firms expanded and new firms were created as a result of Syrian refugee inflow. However, newly created firms were more likely to be small and market structure became less concentrated. Another finding indicated that exports rose as a result of increasing competition.

In accordance with the literature, we can say that inward migration could negatively affect labour market outcomes such as employment rate and labour force participation. Besides, it can decrease inflation due to decreased labour costs. Thirdly, while the informality rate could decrease as a result of the arrival of migrants, it could increase the formality and unemployment rates. In addition to that, migrants could alter the tasks and capital intensity of native workers. The native workers could improve their task complexity and reduce the intensity of manual tasks in their jobs as a result of migrant inflow, but this is also dependent on the skill and educational level of the migrant population. If the migrant people were more skilled and educated people, the results would have been different. Lastly, firm performance and market characteristics could change in response to migrants. The Syrian case made Turkish firms grow and the number of Turkish firms increase. However, new firms are more likely to be small.

Do you expect the pandemic to have long-lasting effects on the labour market and, through this, on the inflation process (eg labour supply, technology/automation etc)?

Due to the pandemic, job retention schemes were extended to save jobs and protect households against income loses. Termination of job contracts was prohibited until June 2021. Employers were allowed to give their workers unpaid leave. The employees on unpaid leave were also provided daily cash benefits. Eligibility requirements for

the short-time work allowance (STWA) were eased and the duration of STWA was extended by one year. 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.

How do you expect long-term trends (demographics, technical innovation, automation, globalisation/deglobalisation) to affect labour markets, wages and inflation?

Türkiye has a relatively young demographic structure in comparison with the OECD countries. The share of those aged 15–24 in the total population is 15.4% which is the fifth highest ratio among OECD member countries. However, Türkiye's population is also growing older, as in other countries. The share of those aged 15–24 in the total population was 17.1% in 2010. Despite this fall, Türkiye has one of the most dynamic population structures. Education and investment policies will enhance the potential growth of Türkiye. Additionally, a well educated young population will have a greater tendency to be interested in technical innovation, automation and digital skills. These are expected to increase the job opportunities in the world and create productivity gains. Nevertheless, because automation requires less labour, it may increase unemployment, especially for low skilled workers. Improving skills among the population is expected to mitigate this effect of automation.

Use of labour market indicators in the policy process.

What are the key labour market indicators that your central bank monitors? How is this information presented to the policy board?

In Türkiye, monetary policy decisions are taken by the Monetary Policy Committee (MPC) at pre-scheduled meetings. During the meetings, the MPC is informed about labour market conditions as well as the macroeconomic outlook and monetary policy developments. In particular, main labour market indicators such as employment and unemployment rates, average wages, informal employment and sectoral employment are monitored. In addition to regular monitoring of labour market indicators, changes in labour market policy are raised during the meetings. Potential impacts of these policies are discussed based on econometric analyses.

We also incorporate real sector developments into its decision-making at an increasing rate in order to diversify its information base for monetary policy. In this regard, executives of 1,781 firms, of which 838 were manufacturers, were visited in 2022 (between January and November). These meetings make it possible to obtain first-hand information on economic activities and the decision-making mechanisms of individual firms, and capture real sector sentiment towards the economy in real time. Information obtained from these meetings helps decision-makers to make better assessments about cyclical economic activity (production and sales, investment, employment, borrowing conditions, prices and costs). These visits aim to establish effective communication with representatives of the real sector, exchange views on monetary policy practices and thus contribute to our communication policy.

How do labour market indicators and other economic models presented at policy briefings enter forecasting? Has this changed in recent years? Does this depend on the level of inflation?

In our current models, an inverse relationship between the unemployment gap and the output gap is defined in line with Okun's Law. To associate the changes in wages with the unemployment gap, a Phillips curve is defined that captures the backward indexation behaviour of wages. Also, the domestic real marginal cost variable is defined to include the deviation of real wages from its trend.

In our macroeconometric model that is currently being developed, we enhance the supply side of the economy to include additional 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 macroeconometric model to capture the dynamics of potential labour, actual labour and employment.

How important are disaggregated data in analysing labour markets and what role do they play in the policy process?

In order to restrain the effectiveness of monetary policy, we valued research activities not only at the macro level but also at the micro level. Various data sources, from household labour force surveys to firm balance sheets, are used in analysing labour market developments by CBRT staff.

Do you refer to labour market indicators in communicating monetary policy? If so, to which ones?

Yes. We use several labour market indicators in the inflation report and for internal use only, and take them into account when implementing monetary policy. These indicators are:

- employment rate;
- unemployment rate;
- labour force participation rate;
- wage indicators such as average wage and minimum wage etc;
- total employment;
- sectoral employment;
- unregistered employment;
- job vacancy rates;
- average hours worked per worker;
- distribution of wage increases;
- rate of wage indexation;
- outcomes of collective agreements;

- unit labour costs; and
- employment components of PMI.

References

Akgündüz, Y. E., Bağır, Y. K., Cılasun, S. M., & Kırdar, M. G. (2023). Consequences of a massive refugee influx on firm performance and market structure. *Journal of Development Economics*, *162*, 103081.

Akgündüz, Y. E., & Torun, H. (2020). Two and a half million Syrian refugees, tasks and capital intensity. *Journal of Development Economics*, *145*, 102470.

Balkan, B., & Tumen, S. (2016). Immigration and prices: quasi-experimental evidence from Syrian refugees in Turkey. *Journal of Population Economics*, *29*, 657-686.

Berker, A. (2011). Labor-market consequences of internal migration in Turkey. *Economic Development and Cultural Change*, *60*(1), 197-239.chart

Ceritoglu, E., Yunculer, H., Torun, H., & Tumen, S. (2017). The impact of Syrian refugees on natives' labor market outcomes in Turkey: evidence from a quasi-experimental design. *IZA Journal of Labor Policy*, *6*(1), 1-28.

Coşar, E. E. ve Yavuz A. A. (2019). "Türkiye'de Ücret Dinamikleri". *Merkezin Güncesi*.