Box 2.6

Wage Distribution and Effects of Wages on Inflation in Turkey

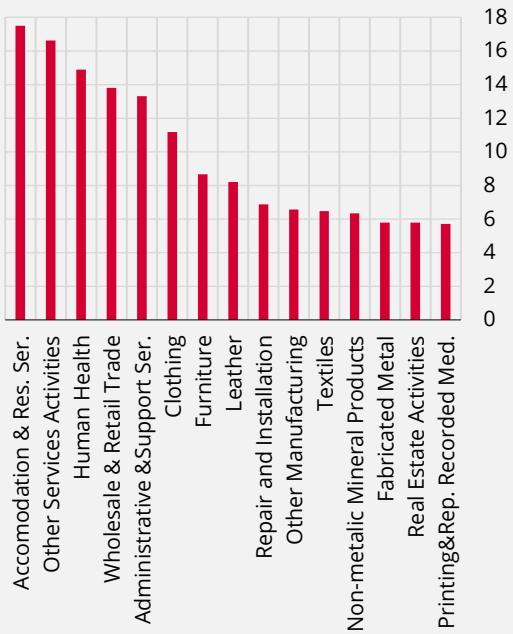
One of the most important indicators that are monitored in terms of wage developments in Turkey is the minimum wage. In addition to demand inflation, the minimum wage also affects cost-driven inflation. Additionally, it also acts as a reference for private sector wage increases. This box discusses the sectoral distribution of minimum wage earners and the effect of wages on inflation.

Household Labor Force Survey (HLFS) micro data are used to draw a general picture of the wage distribution in Turkey for wage and salary employees. For the HLFS, individuals are asked about their total net cash income they earned from their main job of the last month (in addition to benefits in cash, bonuses and premiums, etc.).

Table 1: Proportion of Employees on Minimum Wage or Below by Selected Sectors, and Labor Intensity (%, 2017-2019 Average)

	Proportion of Employees on Minimum Wage or Below *	Personnel Cost/ Production Value
Non-Farm Sectors	**42.8**	**13.0**
Industry	**50.0**	**8.9**
Manufacturing Ind.	51.7	9.4
Textiles	58.9	11.0
Clothing	72.2	15.5
Leather	67.1	12.2
Furniture	54.4	15.9
Food Products	64.7	7.8
Petro. Products**	19.4	-
Motor Vehicles	24.0	7.1
Other Transport	18.7	13.4
Construction	**53.9**	**9.1**
Services	**39.1**	**20.4**
Wholesale&Ret.Trade	63.8	21.6
Transpo.&Storage	45.3	12.2
Accomo.&Rest. Ser.	71.6	24.4
Public Admi.**	5.1	-
Education	9.3	53.1
Finance&Insur.**	11.8	-

Chart 1: Sensitivity to Minimum Wage (Personnel Cost/Production Value x The Proportion of Employees on Minimum Wage or Below %, 2017-2019 Average)



Sources: CBRT, TURKSTAT HLFS Micro Data 2017-2019, Annual Industry and Service Statistics 2017-2019.

* The data are filtered at an occupational and sectoral level. Those who work in the neighborhood of 10% below and above the minimum wage are accepted as minimum wage earners, while those working with a wage more than 10% below the minimum wage are considered to earn below the minimum wage.

** Personnel cost/production value could not be calculated due to the lack of data.

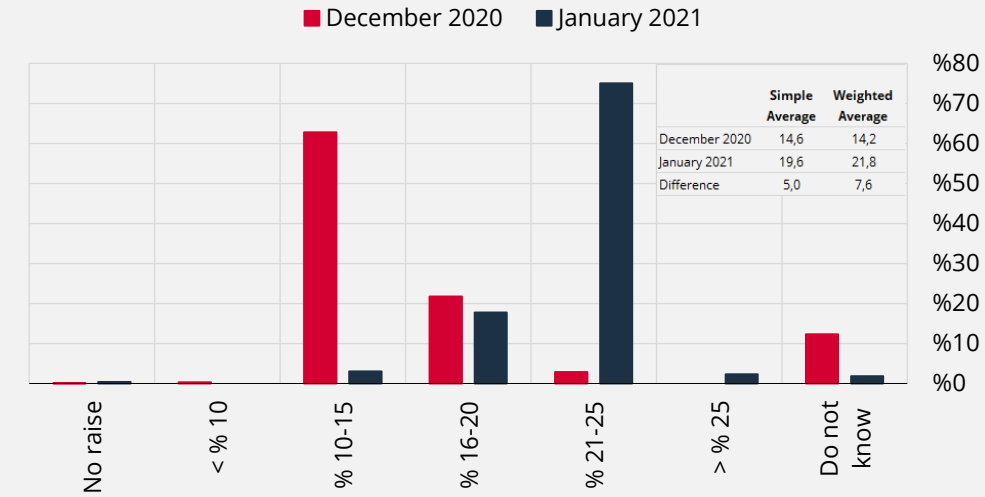
The 2017 to 2019 data for this question reveal that approximately 42.8% of the wage earners working in non-farm sectors are on the minimum wage or below (Table 1). This rate is calculated as 50.0% in the industrial sector, 53.9% in construction and 39.1% in the services sector. While the ratio of those earning the minimum wage or less is relatively low in the services sector compared to other

main sectors, the sub-sectors differ significantly. For example, while this ratio reaches 72% in accommodation and restaurant services, and 64% in the wholesale and retail trade sector, sectors such as public services, education, finance-insurance services and information-communication services limit the total share of the services sector employees earning minimum wage or below the minimum wage. In the manufacturing industry, this ratio is higher for the clothing, textiles, food and leather sectors.

Another point that should be taken into consideration regarding the sensitivity to the minimum wage when evaluating possible cost-side inflation pressures is the labor intensity of the sectors. As an indicator of labor intensity, personnel cost/production value ratio is calculated from the TURKSTAT Annual Industry and Service Statistics data (Table 1). Later, in order to show sensitivity to the minimum wage, an index is created by multiplying the minimum wage share by the personnel cost/production rate. According to this index, the most sensitive sectors to the minimum wage in Turkey are accommodation and restaurant services, other service activities, human health services, wholesale and retail trade, administrative and support service activities, clothing, furniture and leather sectors (Chart 1).

The minimum wage is an important reference for economy-wide wage increases.[1] In addition to the minimum wage, past inflation and the cyclical state of the economy have a significant effect on non-farm sector wage increases (Coşar & Yavuz, 2018). According to CBRT survey interviews with businesses, firms' planned wage raises for 2021 were updated upwards after the minimum wage was set (Chart 2). When the companies interviewed are weighted by the number of employees, it indicates a growth to 21.8% in the average planned wage rise in January from its level at 14.2% in December.

Chart 2: Planned Wage Growth Weighted by Number of Employees (%)



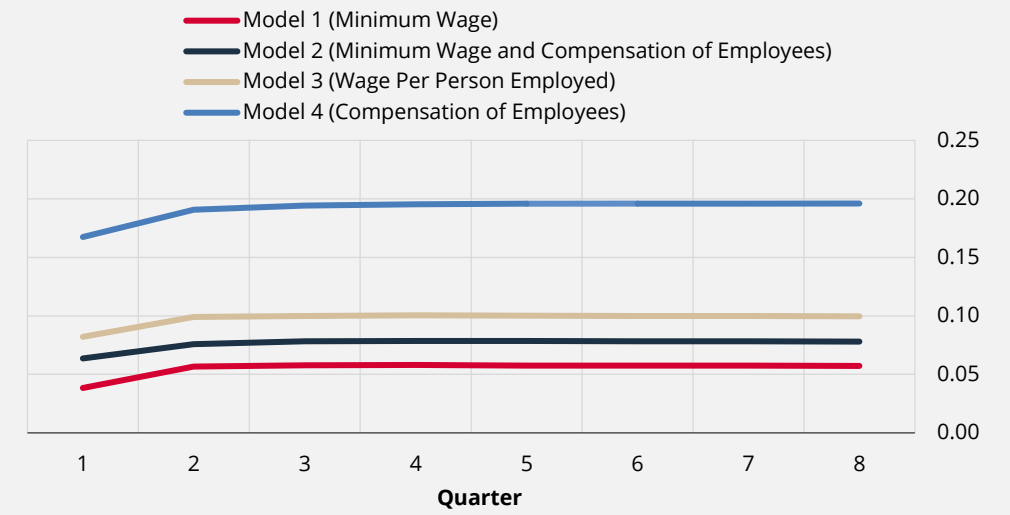
Source: CBRT.

To evaluate the possible impacts of wage growth on inflation, impulse-response analyses using Bayesian VAR models are made under several wage definitions. The models, which are estimated on a quarterly basis for the post-2005 period, contain the variables Brent oil price in US dollars, import prices in US dollars, exchange rate basket (0.5*US dollar+0.5*Euro), GDP growth, producer prices, consumer inflation expectations for the next 12 months, wages and the consumer price index excluding unprocessed food and alcohol-tobacco (D index). Under this structure, four different models are estimated by using different wage definitions. Chart 3 shows the cumulative impact of a

[1] Başkaya and Özmen (2013) found that the increase in the employer cost of the minimum wage increases producer prices more in sectors with a larger number of unskilled workers. Similarly, according to the study of Gürcihan Yüncüler and Yüncüler (2016), the minimum wage increase may affect the wages of informal workers and wages up to twice the minimum wage in wage distribution.

1% positive wage shock on inflation. In terms of wage definition, Model 1 uses the net minimum wage, Model 2 uses net minimum wage along with the compensation of employees from national income calculated with income approach, Model 3 uses wage per person obtained from Labor Input Indices, and finally Model 4 employs compensation of employees. Each model also contains a global risk measure (EMBI-Global) and a variable constructed to account for the effect of tax changes on inflation as exogenous variables.

Chart 3: Cumulative Effect of 1% Wage Shock on Consumer Inflation
(Median Effect, % Points)



Source: CBRT.

The main findings based on median responses can be summarized as follows: A positive shock of 1% to the nominal minimum wage raises consumer inflation by around 0.06 to 0.08 points at the end of the year, and the effect is mostly completed within two quarters. Based on the definition of wage per person employed, the response of inflation to the 1% wage shock is estimated to be around 0.10 points. And an analysis by compensation of employees including both wage and employment effects suggests that a positive shock of 1 percentage point increases consumer inflation by 0.2 points at the end of a year.

The relatively high uncertainty on the estimates regarding the wage-inflation relationship requires a cautious stance in policy making. Sectoral divergences, the significant differentiation between employment and hours worked, dismissal prohibitions and the implementation of short time work allowance, all specific to the pandemic period, make it difficult to measure the wage-induced effects on inflation. Inflation remains relatively low in accommodation services and clothing sectors which are not only affected most adversely by the pandemic but are also sensitive to the minimum wage. Although the pandemic-specific demand conditions in such sectors limit the pass-through of costs to the prices, unit cost-based pressures may be effective especially in the services sector following the opening of the economy, as was the case in May and June last year. On the other hand, depending on the tourism outlook, the likelihood of a future cost-price pass-through in the clothing sector is one of the significant risk factors for the inflation outlook. In conclusion, considering that the minimum wage increase is an important reference for wage increases across the economy, recent developments are judged as a factor that may negatively affect the disinflation process envisaged for 2021.

References

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