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Minimum Wages in a High-Inflation Economy: The Case of Türkiye

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Abstract

Minimum wage policies are a central instrument for reducing poverty, improving income distribution, and enhancing social protection. Yet their broader macroeconomic impacts remain contested, particularly in developing economies with persistent high inflation. Drawing on a Post-Keynesian framework, this paper examines the impact of minimum wage increases on inflation, unemployment rate, demand, and the trade balance in Türkiye, a country characterized by persistent high inflation and where approximately

three-quarters of the workforce earns between 50% and 150% of the minimum wage. Using monthly data from 2005 to 2024 and Structural Vector Autoregression (SVAR) models, we analyze the relationships between minimum wage adjustments, consumer prices, unemployment, capacity utilization, and trade balance. We employ two distinct inflation measures: the Consumer Price Index from TurkStat and the Cost of Living Index from the İstanbul Chamber of Commerce.

Our findings indicate that a 10% increase in the minimum wage raises annual inflation by 1.0-2.0 percentage points. This inflationary effect is primarily driven by the *cost channel*, as opposed to the *demand channel*. Exchange rate movements emerge as a more powerful inflation driver than wage adjustments in Türkiye's context. The analysis finds no significant evidence that minimum wage increases influence demand-side factors such as capacity utilization, industrial growth, or retail sales. Contrary to traditional predictions, the impact on unemployment is minimal —0.10 to 0.15 percentage points. Moreover, a 10% rise in the minimum wage generates an extra trade deficit amounting to 0.11–0.27% of annual GDP. These results suggest that while minimum wage policy remains a viable tool for improving low-wage workers' welfare, given its moderate inflationary effect and minimal impact on employment, policymakers should consider complementary measures to enhance productivity and non-price competitiveness to mitigate mild negative external balance effects.

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1. Introduction

Minimum wage policies represent a critical economic and social intervention aimed at protecting the most vulnerable workers, promoting income equality and enhancing social welfare. While their importance is widely acknowledged across countries with diverse economic structures, their impacts, particularly in high-inflation environments, remain debated among policymakers and economists (Duman & Duman, 2022; Işık et al., 2020). Türkiye presents an interesting case study for examining this relationship, as it has experienced persistent high inflation combined with significant minimum wage adjustments in recent years.

The Turkish economy has been characterized by macroeconomic instability (Orhangazi & Yeldan, 2021; Yeldan et al., 2023), with inflation rates exceeding 80% according to official statistics in recent years. In this environment, minimum wage policy has evolved to become one of the government's primary tools for addressing income distribution and providing social protection. This importance is further magnified by the labor market structure in Türkiye, where approximately three-quarters of the workforce earns between 50% (especially those working in the informal sector) and 150% of the minimum wage (DİSK-AR, 2024), making this policy instrument particularly consequential for a significant portion of the population.

The causes of inflation have drawn interest across various theoretical traditions in economics. Monetarists emphasize excess demand and money supply as primary inflation drivers (Ambler & Kronick, 2022; Greenwood & Hanke, 2022), while New Keynesians focus on tight labor markets and wage pressures (Blanchard et al., 2022). Post-Keynesians, in contrast, highlight distributive conflict as the central mechanism of inflation (Lavoie, 2024; Hein, 2023), where firms with market power pass on cost increases to consumers while maintaining or increasing profit margins. In the

Turkish context, multiple empirical studies suggest that inflation is predominantly profit-driven rather than wage-driven, with rising profit markups serving as a major driver of price increases (Yeldan et al., 2023; Isik et al., 2025; Yılmaz & Bulut, 2025).

Our paper examines the impact of minimum wage increases on inflation in Türkiye using monthly data spanning from 2005 to 2024. We employ Structural Vector Autoregression (SVAR) models to analyze the relationships between minimum wage adjustments, consumer prices, unemployment rates, capacity utilization, and trade balance. To ensure robustness, we employ two distinct inflation measures: the Consumer Price Index (CPI) from TurkStat and the Cost of Living Index (CLI) from the İstanbul Chamber of Commerce.

The study contributes to the existing literature in several important ways. First, it provides empirical evidence on the wage-inflation relationship in a high-inflation emerging economy, where traditional theoretical predictions may not hold due to structural factors and market imperfections. Second, by incorporating variables such as unemployment, capacity utilization, and trade balance, we provide a more comprehensive assessment of the economic effects of minimum wage policies, extending beyond their direct impact on prices. This approach also enables us to examine the channels through which minimum wages may influence prices.

Our findings suggest that while minimum wage increases contribute to inflation in Türkiye, the magnitude of this effect is somewhat moderate compared to other factors consistent with the estimations of the Central Bank of the Republic of Türkiye (2021; 2023). Specifically, a 10% increase in the minimum wage raises annual inflation by approximately 1 to 2 percentage points within a year. The analysis also reveals minimal impacts on unemployment and capacity utilization, suggesting that the labor market adjusts to higher minimum wages without significant

disemployment effects (Card & Krueger, 1995; Dube, 2019b; Işık et al., 2020). We find some evidence of mild deterioration in the trade balance, which may signal challenges for external competitiveness.

The remainder of this paper is structured as follows: Section 2 provides a historical overview of minimum wage policy in Türkiye, highlighting its evolving significance in the country's economic landscape. Section 3 reviews the literature on theoretical approaches to inflation and empirical evidence on minimum wage effects. Section 4 outlines our theoretical framework based on Post-Keynesian conflict inflation models. Section 5 describes our data and methodology. Section 6 presents the empirical results and discusses the implications of our findings. Finally, section 7 concludes with policy recommendations and directions for future research.

2. Evolution of Minimum Wage Policy in Türkiye

The minimum wage in Türkiye has its origins in the early Republican period but was actually formalized as a systematic policy only after the Second World War. Türkiye's first minimum wage regulation was introduced in 1951 through Labor Law No. 5518, which amended the Labor Law of 1936. This initial implementation was limited in scope, applying only to certain industries and regions rather than constituting a national standard. The comprehensive legal foundation for Türkiye's minimum wage system was established in 1971 with the enactment of Labor Law No. 1475, which made the minimum wage mandatory nationwide. This legislation also created the Minimum Wage Determination Commission, a tripartite body comprising representatives from the government, employers' organizations, and labor unions. The Commission was tasked with determining the minimum wage levels at least every two years, although in practice, it made adjustments annually or semiannually since 1987. The institutional framework underwent

refinement with Labor Law No. 4857 of 2003, which modernized Türkiye's labor regulations in line with European Union accession requirements. This law preserved the tripartite commission structure while enhancing its methodological approach to minimum wage determination.

Under the current system, the Minimum Wage Determination Commission consists of fifteen members: five government representatives (from the Ministry of Labour and Social Security and other relevant institutions), five employer representatives (from organizations like the employers' association TİSK), and five worker representatives (typically from major labor unions like TÜRK-İŞ). A government appointee chairs the Commission, and the state has considerable influence in negotiations (Çelik, 2022).

By law, the Commission is required to consider several factors when determining the minimum wage: workers' living costs, economic conditions, wages across different industries, national economic development, and the preservation of business competitiveness. While all these factors are legally mandated for consideration, Duman and Duman (2022) highlight that two-thirds of the Commission members represent employers and government and argue that these members treat the minimum wage as a cost factor and a tool for controlling inflation. There is no regional differentiation in Türkiye's minimum wage, unlike countries such as the United States or China, which apply different rates across regions with varying costs of living.

Türkiye's minimum wage policy has evolved within the broader context of the country's shifting economic development models. During the import-substitution industrialization period between 1960 and 1980, minimum wage increases were modest but relatively consistent with inflation. During the late 1970s and 1980s, however, the minimum wage remained relatively low and often failed to keep up with inflation (Elgin and Kuzubas, 2012) and declined significantly relative to

GDP per capita (Appendix 1, Figure A1.1). In this period, the country was plagued by chronic economic instability, including balance of payments crises, high inflation, and political turmoil. The 1980 military coup was a pivotal moment in Turkish political and economic history and had lasting effects on labor relations. The military regime preserved the legal structure of the minimum wage; however, at the same time, it also severely restricted union rights, collective bargaining, and the right to strike. In this environment, wage increases were tightly controlled by the state and often used as a tool to fight inflation (at least fight against inflation is used in the policy rhetoric), rather than as a mechanism for social protection.

The 1982 Constitution reaffirmed the principle of a minimum wage and enshrined the right to a fair income for workers. However, in the neoliberal era that followed, beginning with structural adjustment policies in the 1980s and continuing through the 1990s, wage policies were subordinated to broader macroeconomic goals. Governments prioritized price stability, export competitiveness, and fiscal discipline, which often meant limiting wage increases, including the minimum wage. The state played a dominant role in wage-setting, and decisions of the Minimum Wage Commission were increasingly shaped by the executive branch, with limited influence from labor unions (Çelik, 2022).

The 1990s were marked by repeated economic crises and high inflation. During this period, the minimum wage was increased frequently in nominal terms, but often failed to keep pace with the cost of living (Appendix 1, Figures A1.2-A1.3). These nominal increases were typically politically motivated, particularly around election cycles, and were not accompanied by structural improvements in enforcement or labor rights. In many cases, workers saw their real purchasing power eroded by rapidly rising prices and currency devaluation.

A turning point came in 2001, when Türkiye experienced one of the most severe financial crises in its modern history. The crisis led to a dramatic reorganization of economic governance under the guidance of the International Monetary Fund. Fiscal discipline, inflation targeting, and structural reforms became the cornerstones of economic policy. In this environment, wage policy became more conservative. In 2001, minimum wage increases fell significantly behind inflation and GDP per capita growth (Appendix 1, Figures A1.1-A1.3).

In 2002, the Justice and Development Party (AKP) came to power and would go on to dominate Turkish politics for the next two decades. In its early years, the AKP maintained most of the orthodox economic policies adopted after the 2001 crisis. However, in January 2004, the AKP government raised the minimum wage by 38.2%, followed by an additional 5% increase in July (Ministry of Labour and Social Security (2025). Overall, these adjustments resulted in a 32.7% real increase in the minimum wage for 2004 (based on TurkStat CPI).

Between 2005 and 2015, minimum wage increases were relatively modest and lagged behind inflation in some years and lagging behind GDP per capita growth throughout the period (Appendix 1, Figure A1.1- A1.3). The government emphasized macroeconomic stability, foreign direct investment, and export-oriented growth. During this time, the role of the minimum wage as a policy tool was relatively light, and labor markets were increasingly shaped by rising flexible work arrangements (Oyvat, 2014), and weakened unionization (Cömert & Oyvat, 2024). However, the minimum wage still somewhat served as an anchor for the overall labor market.

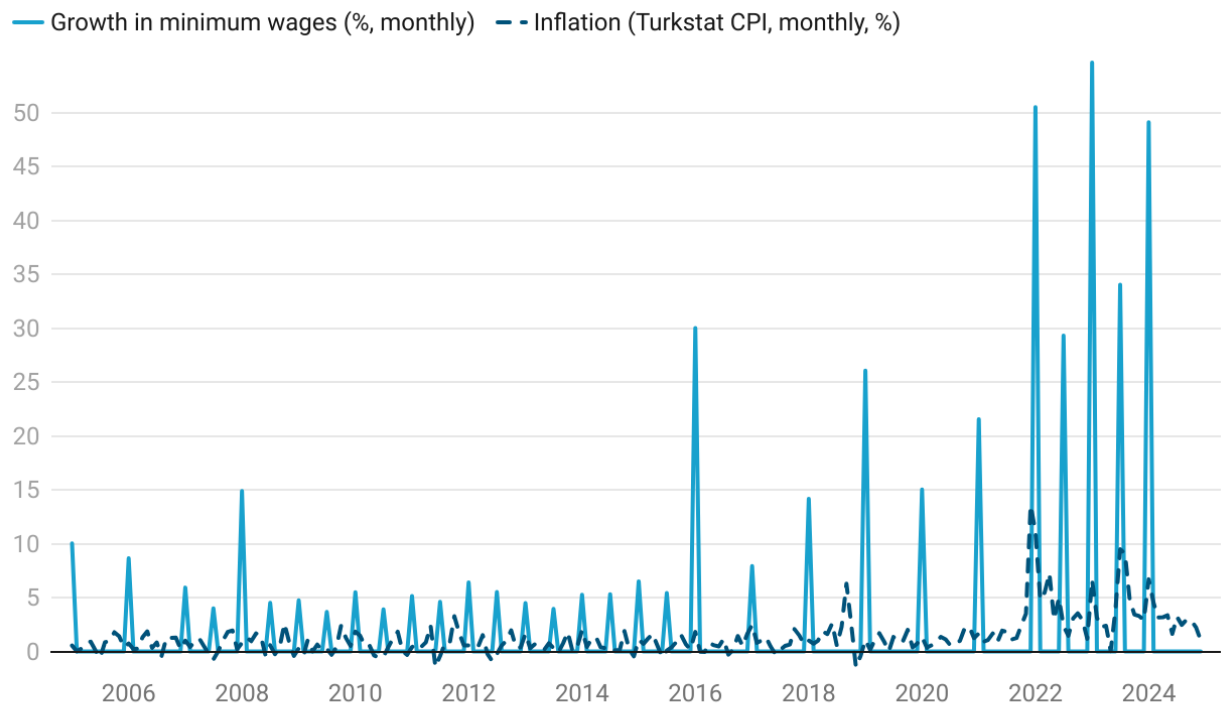

Figure 1. Monthly growth in minimum wage and TurkStat CPI monthly inflation (January 2005 – December 2024).

Source: Authors' calculations from data retrieved from TurkStat (2025), İstanbul Chamber of Commerce (2025) and Ministry of Labour and Social Security (2025).

In 2016, the AKP, due to electoral competition and promises of opposition parties at the time (Republican People's Party's, CHP; Nationalist Movement Party, MHP; People's Democratic Party, HDP) (Işık et al. 2020) increased the minimum wages around 30% in January 2016 in nominal terms (Figure 1).

Since then, the minimum wage has become one of the most prominent economic policy tools used by the government to manage social discontent in the face of worsening economic conditions. In 2018, Türkiye's economic model, reliant on capital inflows and driven by external debt,

experienced a currency crisis, as capital outflows following the arrest of American pastor Andrew Brunson exposed accumulated macroeconomic imbalances and growing vulnerabilities (Orhangazi & Yeldan, 2021). Especially after 2018, when the Turkish economy entered a new period of currency instability, high inflation, and rising unemployment, minimum wage increases have been used as a compensatory mechanism.

In late 2021, Türkiye encountered another currency crisis, driven by the Central Bank of the Republic of Türkiye (CBRT)'s policy rate cuts, which eroded investor confidence, spurred net capital outflows, and heightened domestic demand for foreign currency (Cömert & Oyvat, 2024). USD/TRY rate increased by 56.2% during the last four months of 2021 and by 118.8% between September 2021 and August 2022[i]. Following the currency crisis, annual consumer inflation reported by TurkStat (2025) rose from 14.6% in 2020 to 36.1% in 2021, 64.3% in 2022, and 64.8% in 2023. CLI inflation from the ICOC (2025) increased from 14.4% in 2020 to 34.2% in 2021, 93.0% in 2022, and then declined to 74.9% in 2023. In 2022 and 2023, the government implemented multiple minimum wage hikes within the same year, which is a move following the rapid erosion of purchasing power and widespread public pressure.

In 2022 and 2023, in response to unprecedented inflation and political pressure from the May 2023 general elections and the March 2024 local elections, the government introduced multiple minimum wage hikes within each year, marking a departure from the practice maintained since 2016. In 2022 as well as in 2023, the minimum wage was raised twice, with a cumulative annual increase exceeding annual consumer inflation rates reported by TurkStat (2025) and İstanbul Chamber of Commerce (2025).

The minimum wage has gained heightened political significance in contemporary Türkiye, as demonstrated by President Erdoğan's direct involvement in announcing increases, often presenting them as evidence of the government's commitment to worker welfare. However, these dramatic nominal increases might have failed to improve the living conditions of minimum wage workers as the food inflation has been larger than average consumer inflation. The annual average ratio of the net minimum wage to the Confederation of Turkish Trade Unions (Türk-İş)'s hunger line fell from 0.96 in 2021 to 0.79 in 2022. It then slightly recovered to 0.87 in 2023 and to 0.92 in 2024[ii].

Today, with approximately three-quarters of Türkiye's workforce earning between 50% (especially the workers employed in the informal sector) and 150% of the minimum wage (DİSK-AR, 2024), this policy instrument has become one of the government's primary tools for income distribution and social policy, albeit one constrained by macroeconomic instabilities and structural challenges in the labor market. According to data from 2023, only about 7.5% of workers earn more than twice the minimum wage, indicating the critical importance of minimum wage policy for the vast majority of Turkish workers.

The authoritarian character of the Erdoğan regime has significantly impacted labor movements, with the government consistently using its authority to postpone strikes on grounds of national security and public health. By 2022, while 87,000 workers participated in strikes, approximately 194,000 workers had their strikes postponed—2.5 times higher than those who were able to exercise their right to strike (Çelik, 2022). This context has elevated the importance of minimum wage policy as a central mechanism for wage determination, especially given the significant correlation between monthly growth in labor costs and growth in minimum wages (with a correlation coefficient of 0.99 for 2015-2024) (Figure 2).

Figure 2. Monthly growth in net minimum wage and labor cost index in construction (February 2015 – November 2024).

Source: Authors' calculations from data retrieved from TurkStat (2025) and Ministry of Labour and Social Security (2025). Data on the graph starts from February 2015 as labor cost index in construction series start in 2015.

3. Literature Review

The theoretical discourse on inflation encompasses three primary approaches. The Monetarists Greenwood and Hanke, 2022; Ambler and Kronick, 2022) attribute inflation to excessive government spending and expansion of money supply. This view aligns with the traditional Monetarist proposition that inflation results from "too much money chasing too few goods."

New Keynesian economists, such as Blanchard, Domash, and Summers (2022), contend that inflation stems from aggregate excess demand in an overheated economy characterized by tight labor markets and rapidly rising wages. New Keynesians such as Ratner and Sim (2022) and Lorenzoni and Werning (2023) have incorporated conflict inflation theories into their frameworks. While initially emphasizing demand factors, Bernanke and Blanchard (2023) later acknowledged the significance of supply shocks, such as food and commodity price increases and supply constraints, in driving inflation.

The Post-Keynesian approach (Rowthorn, 1977; Taylor, 1991; Dutt, 1992; Hein, 2023; Lavoie, 2024) places distributive conflict at the center of inflation dynamics. As Hein (2024) succinctly stated, "inflation is always and everywhere a conflict phenomenon." Post-Keynesians identify three primary inflation drivers. First, conflictual inflation arises from worker-firm tensions over income distribution as workers exhibit real-wage resistance (Hicks, 1975) when labor unions perceive the profit share as excessively high and unfair (Kaldor, 1959). In this context, inflation can also result from firms' attempts to increase their share of income (Lavoie, 2024). Second, wage-wage inflation stemming from workers' comparisons of their wages relative to others (Keynes, 1936; Robinson, 1962; Lavoie, 2024). Third, imported inflation resulting from rising prices of raw materials or currency depreciation (Lavoie, 2024). Vernengo and Perry (2018) find that Argentina's inflation (1882–2009, 1990–2007) was mainly driven by balance of payments crises (exchange rates) and, to a lesser extent, by wages. Yusifzada et al. (2024) for 51 countries during the 1961–2023 period find that nominal exchange rate depreciation strongly predicts high inflation, explaining nearly all high-inflation cases in upper-middle-income countries and most in high- and lower-middle-income countries. This channel is particularly crucial for Türkiye, as the economy has repeatedly experienced currency shocks.

Recent studies by Weber and Wasner (2023), Nikiforos et al. (2024), and Wildauer et al. (2023) highlight how rising pricing power enhanced by supply bottlenecks allows firms to pass cost increases onto consumers while maintaining or increasing markups, exacerbating inflation and changing distribution in favor of capital. This phenomenon, termed "profit-led inflation" or "seller's inflation," has gained empirical support from numerous studies showing that rising profit rates, rather than wage increases, have been the primary driver of the 2021–22 inflation surge in the US (Bivens, 2022; Stiglitz & Regmi, 2023; Storm, 2022a, 2022b). For Türkiye, Yeldan et al. (2023) emphasize that inflation in Türkiye is profit-driven, with significant increases in profit margins, particularly after 2015. According to their analysis, rising profit markups, not wage increases, are the primary driver of inflation.

3.1 Minimum Wages and Inflation

The relationship between minimum wage increases and inflation remains contested in economic literature. Certain monopsony models suggest that, if wage increases do not negatively impact employment, they should not significantly affect prices (Card & Krueger, 1995). In Aaronson and French's (2007) monopsony model, if higher minimum wage increase employment, it also raises output, which in turn reduces output prices. However, Bhaskar and To (1999) argue that this result is unwarranted, as the exit of firms can lead to an increase in product market power following a minimum wage hike.

Empirical findings range from minimal effects, as shown by Campos-Vazquez and Esquivel (2020) in Mexico, to modest price increases primarily in food-related sectors, as demonstrated by Leung (2021), who estimate that a 10% wage hike raises U.S. grocery prices by 0.6%-0.8%. In

Hungary, Harasztosi and Lindner (2019) find that firms passed 74%-77% of wage costs to consumers.

For Türkiye, CBRT Inflation Reports (CBRT, 2021; 2023) find that minimum wages have a moderate effect on inflation. Using Bayesian SVAR models, CBRT (2021) estimates that a 1% nominal increase in minimum wages cumulatively raises consumer inflation (excluding unprocessed food and alcohol-tobacco) by 0.06 to 0.08 percentage points by the end of a year, with most of the impact occurring within two quarters and the largest effect in the first quarter. CBRT (2023) similarly finds that a 1% increase in minimum wages raises consumer inflation (excluding unprocessed food and alcohol) by 0.06-0.08 percentage points in the first quarter and 0.08-0.12 points over a year.

Biçerli and Kocaman (2019) find that a 1% minimum wage increase raises the producer prices index (PPI) by 0.45%. However, their analysis suffers from omitted variable bias, as it doesn't control for the exchange rate, which is a crucial determinant of inflation in Türkiye as we will show in this paper.

3.2 Minimum Wages, Wages, and Markups

Empirical research generally confirms that minimum wage increases lead to overall wage growth, though effects vary across wage groups. For Hungary, Harasztosi and Lindner (2019) report that higher minimum wages also boost average wages. For Mexico, Pérez (2020) finds that higher minimum wages raise both formal and informal wages, though the effect is concentrated near the minimum wage and is stronger for formal wages. Hau, Huang, and Wang (2020) find that higher minimum wages raise average wages more in lower-wage firms in China. In the US, Pollin and

Wicks-Lim (2016) and Dube (2019a) find that minimum wage increases reduce wage inequality and poverty, particularly among lower-income brackets. Similar patterns appear across economies, including Germany (Bossler & Schank, 2023) and Greece (Roupakias, 2025).

The impact on firm profitability varies. In the UK, Draca et al. (2011) observe profit declines, especially in high-market-power industries. Mayneris et al. (2018) find no such effect among surviving firms after the 2004 minimum wage reform in China, attributing this to productivity gains. However, the survival probability of the firms most exposed to minimum wage hikes declined following the reform. Studies from Israel (Drucker et al., 2021) and Germany (Dütsch et al., 2025) indicate that lower-income firms experienced higher profit reductions.

For Türkiye, Gürcihan Yüncüler and Yüncüler (2016) and Işık et al. (2020) respectively find that the minimum wage hikes in 2004 and 2016 significantly increased wages for both lower and higher education levels, with a larger effect among the higher educated. Moreover, Gürcihan Yüncüler and Yüncüler (2016) estimate that the minimum wage hike in 2004 increased both formal and informal wages reflecting the presence of a "lighthouse effect". Sefil-Tansever and Yılmaz (2016) similarly show that 2004–2022 minimum wage increases lifted informal workers' wages beyond certain percentiles.

3.3 Minimum Wages and Demand

In the preface of the twentieth-anniversary edition of *Myth and Measurement*, Card and Krueger (2016) underline that minimum wages could boost aggregate demand by increasing incomes for low-wage households with high marginal propensity to consume and highlight that "the consumption and general equilibrium effects of the minimum wage are important topics for future

research". Empirical evidence supports this view, with studies from India (Mansoor & O'Neill, 2021), the US (Aaronson et al., 2012; Alonso, 2022), and other countries demonstrating increased consumption following minimum wage hikes.

Minimum wages also influence investment patterns. Harasztosi and Lindner (2019) show that higher wages in Hungary stimulated capital investment in labor-saving technologies. Similarly, Hau et al. (2020) observe accelerated labor-to-capital substitution in foreign and private firms in China, particularly among low-wage firms. However, minimum wage increases tend to negatively affect revenues and employment in export-oriented firms, consistent with the empirical estimations based on Post-Kaleckian models predicting that rising unit labor costs reduce export competitiveness (Onaran & Galanis, 2014; Alarco, 2016; Blecker et al., 2022).

The empirical estimations on the demand effects of minimum wages in Türkiye are very limited. Using firm level data, Akgündüz et al. (2019) estimate that 10% increase in labor costs due to minimum wages leads to 3% decline in exports. Several studies based on Post-Kaleckian models examine the impact of wage share on demand, which hints the possible effects of minimum wage hikes; however, the empirical evidence is not consistent. Multiple studies (Onaran & Stockhammer, 2005; Onaran & Galanis, 2014; Bölükoğlu, 2019; Mutlugün & İncekara, 2023) find Türkiye's demand regime as wage-led, suggesting that higher wage shares could stimulate aggregate demand and whereas other studies (Yılmaz, 2015; Yilmaz & Bahçe, 2025) suggest that Türkiye's demand regime is profit-led and higher wage shares reduce aggregate demand.

3.4 Minimum Wages and Employment

The employment effects of minimum wages remain one of the most debated topics in labor economics. Card and Krueger (1995) explain non-negative employment effects through monopsonistic labor markets, where higher wages can increase recruitment and employment up to certain thresholds. Manning (2021) add that minimum wage hikes increase labor supply, while reducing turnover rates and associated costs for firms.

Empirical evidence is mixed. Many studies find minimal or no employment effects (Dube, 2019b; Card & Krueger, 1994; Broecke et al., 2017; Cengiz et al., 2019). While Arnadillo et al. (2024) and Wolfson (2024) find no impact in Spain and Canada, respectively, Andriopoulou and Karakitsios (2022) report a negligible impact on unemployment entries and exits in Greece. Some research even suggests employment gains, particularly among younger workers (Giupponi et al., 2024) and in concentrated labor markets (Azar et al., 2024).

Conversely, other studies document employment declines, especially among vulnerable groups and specific industries. Based on a meta-analysis, Wolfson and Belman (2019) find a small but statistically significant negative effect of minimum wages on employment in the US, and Clemens and Wither (2019) find job losses among low-skilled workers in states with binding minimum wages. In Hungary, Harasztosi and Lindner (2019) observe employment reductions in firms with higher labor shares and exporting companies. Rather than layoffs, some firms respond by reducing working hours (Kunaschk, 2024; Dütsch et al., 2025).

In developing economies, minimum wage increases often affect informal employment. Mansoor and O'Neill (2021) find that higher minimum wages in India increased informal employment

without causing overall job losses. A meta-analysis by Broecke et al. (2017) covering multiple developing economies suggests that higher minimum wages lead to small increases in informal employment, though some estimates show negligible effects.

For Türkiye, Gürcihan Yüncüler and Yüncüler (2016) and Işık et al. (2020) determine that higher minimum wages lead to greater informality but do not result in overall employment declines. On the other hand, Akgündüz et al. (2019) find that higher minimum wages significantly reduce employment in exporter firms with at least two workers.

3.5 Minimum Wages and Productivity

Several studies report productivity gains following minimum wage increases (Ku, 2022; Hau et al., 2020). These improvements occur through various channels: Hau et al. (2020) find that higher minimum wages enhanced total factor productivity in Chinese firms, while Dustmann et al. (2022) and Rao and Risch (2024) show minimum wage hikes drive industry-level increase in productivity by pushing inefficient firms out. In Germany, Hälbig et al. (2024) attribute productivity gains to within-firm improvements rather than market reallocation.

Minimum wage hikes also influence management practices. Hirsch et al. (2015) find that employers respond by raising performance standards, while Kaufman (2010) note more investment in worker training and organizational improvements that enhance long-term productivity.

Bildirici and Aykaç Alp (2012) estimate that lower minimum wages decrease productivity and conclude that minimum wages function as an efficiency wage in Türkiye. Akgündüz et al. (2024) find that increase in minimum wage hike in 2016 led to robot adoption in medium and large firms, although the effects were not significant for all firms.

4. Theoretical Framework

This study employs a Post-Keynesian/Post-Kaleckian approach to analyze the relationship between minimum wages and inflation in Türkiye. Unlike neoclassical models that emphasize market clearing and perfect competition, Post-Keynesian theories acknowledge the inherent conflict over income distribution between workers and firms, particularly in imperfectly competitive markets.

The Post-Keynesian approach to inflation highlights distributional conflict as central to price dynamics. We use a Kaleckian price equation as in Hein and Vogel (2008) and Lavoie (2024a), which is an open economy extension of Kalecki (1954)'s price equation:

$$P = (1 + m)\left(ULC + EP_f\, v_f\right) = (1 + m)\left(\frac{W}{T} + EP_f\, v_f\right) \quad (1)$$

where P represents the price level, m is the markup rate, ULC denotes nominal unit labor costs, E is the exchange rate, P_f is the foreign price level, and v_f represents imported materials inputs per unit of production. Nominal unit labor cost is the ratio between average nominal wages (W) and average real labor productivity (T), expressed as:

$$ULC = W/T \quad (2)$$

This formulation illustrates that inflation can result from multiple sources: increases in markup rates (reflecting greater monopoly power), rising unit labor costs (through higher wages or lower productivity), or imported inflation (via exchange rate depreciation or higher foreign prices).

The markup itself is not constant but varies according to several factors. We can conceptualize the markup as a function of several key variables:

$$m = m(MW, l, u, q, T, k), \qquad m_1, m_2 < 0, m_3, m_4, m_5, m_6 > 0 \tag{3}$$

Minimum wage (*MW*) hikes are partially absorbed by decline in markup rates, as shown in Harasztosi and Lindner (2019) and Draga, Machin, and Van Reenen (2011). Similarly, any increase in bargaining power of workers due to higher employment could have a direct negative effect on markup rate, as in Goodwin (1967). Following Flaschel and Skott's (2006) price equation, we consider that markup rates are dependent on capacity utilization rates, and higher capacity utilization incentivizes firms to increase their markups. Moreover, a real depreciation can allow firms to increase their markup rates as it depresses real wages (Blecker, 2011; Rolim, 2024; Yilmaz & Uzar, 2025) and makes domestic goods more competitive (Blecker et al., 2022). Ceteris paribus, part of the gains in labor productivity will be captured by rising markups. Lastly, higher concentration of capital increases the markup rates.

An increase in minimum wages and higher employment rate (l) affect nominal wages positively.

$$W = W(MW, l), \qquad W_1, W_2 > 0 \tag{4}$$

Labor productivity is positively affected by minimum wages and capacity utilization:

$$T = T(MW, u), \qquad T_1, T_2 > 0 \tag{5}$$

The positive relationship between minimum wages and productivity ($T_1 > 0$) aligns with efficiency wage theories and empirical findings (Ku, 2022; Hau et al., 2020) discussed above. Consistent with the Verdoorn effect (Naastepad, 2006; Hein & Tarassow, 2010), higher output

would also lead to higher productivity as greater scale can lead to more efficient allocation of resources

The capacity utilization rate, representing the intensity with which the existing capital stock is used, depends on several factors:

$$u = u\left(\frac{W}{PT}, k, r, q\right), \quad u_3 < 0, u_4 > 0 \tag{6}$$

where *r* is the policy rate set by the central bank and $\frac{W}{PT}$ is the real unit labor cost. Our model allows labor cost and markup shocks to have separate effects as in Byrialsen et al. (2024). Here, $u_3 < 0$ indicates that higher interest rates reduce capacity utilization through decreased investment and consumption. Real depreciation increases capacity utilization through net exports ($u_4 > 0$). Following Blecker, Cauvel, and Kim (2022), we define a demand regime as *wage-led* if real unit labor costs have a positive impact on demand ($u_1 > 0$), and *profit-led* if the opposite is the case ($u_1 < 0$). The effect of capital concentration is also context dependent. For instance, IMF (2019) finds an inverted-U relationship between capital concentration and investment. Moreover, the markup rate can influence demand through its effects on both consumption and net exports.

Higher capacity utilization increases labor demand and thus employment ($l_1 > 0$), while higher productivity may reduce the number of workers needed to produce a given output ($l_3 < 0$). Consistent with the literature discussed in Section 3.4, the impact of minimum wages is ambiguous.

$$l = l(u, MW, T), \quad l_1 > 0,\ l_3 < 0 \tag{7}$$

Exchange rates respond primarily to monetary policy:

$$E = E(r), \;\; E' < 0 \tag{8}$$

with $E' < 0$, indicating that higher interest rates typically lead to currency appreciation (lower *E*).

Finally, foreign prices are affected by global conditions, particularly commodity prices:

$$P_f = P_f(o), \;\; P'_f > 0 \tag{9}$$

where *o* represents world prices of natural resources such as oil, with P_f'(o) > 0.

Based on equations (1)-(9), the short-run impact of minimum wages on prices is.

$$P = \left(1 + m\left(MW, l, u, \frac{EP_f}{P}, T(MW,u), k\right)\right)\left(\frac{W\left(MW, l\left(u, T(MW,u)\right)\right)}{T(MW,u)} + E(r)P_f(o)\, v_f\right) \tag{10}$$

which could be simplified as

$$P = P(MW, l, u, E, r, o, k) \tag{11}$$

Within this theoretical framework, the contemporaneous impact of a minimum wage increase on inflation involves several channels:

i) Cost channel: Minimum wages directly raise unit labor costs through higher wages, although this effect may be partially offset by productivity improvements and squeeze in markups.

ii) Demand channel: Minimum wages affect aggregate demand through changes in consumption, investment, and net exports, with implications for capacity utilization and employment that feed back into inflationary pressures.

Beyond inflation, minimum wage increases also affect the trade balance, a critical consideration for Türkiye's external economic stability. Net exports can be expressed as:

$$NX = NX\left(\frac{W}{T}, \frac{EP_f}{P}, l, u, o\right), \qquad NX_1,\ NX_3,\ NX_4 < 0,\ NX_2 > 0 \tag{12}$$

Higher nominal unit labor costs (*W/T*) reduce export competitiveness in the short run, while higher capacity utilization and employment increase import demand. A real exchange rate depreciation (higher $\frac{EP_f}{P}$) typically improves the trade balance in the short run, though the effect of oil prices (o) depends on whether the country is a net importer or exporter of natural resources ($NX_5 < 0$ for Türkiye as a net energy importer).

Our model focuses on the short run; however, an increasing trade deficit can heighten economic fragility, especially if it is financed through foreign portfolio inflows, rising external debt, or depletion of currency reserves. Accordingly, we can identify another potential channel through which minimum wages may have an impact:

iii) Trade balance channel: Higher minimum wages can widen the trade deficit, financed either through capital inflows or by drawing down currency reserves. This, in turn, increases the likelihood of currency shocks that could lead to higher inflation. These potential negative effects may be mitigated if higher minimum wages also boost labor productivity.

The theoretical framework outlined above informs our empirical methodology, specifically our Structural Vector Autoregression (SVAR) models. By incorporating variables for minimum wages, exchange rates, capacity utilization, unemployment, and inflation, our models capture the key relationships in the Post-Keynesian approach. The contemporaneous effects specified in our SVAR models reflect the theoretical channels through which minimum wage increases affect inflation, both directly through cost-push mechanisms and indirectly through their impact on economic activity, employment, and exchange rates. The lagged effects of all variables on all variables will also be captured by the SVAR model.

5. Data and Methodology

5.1 Data Sources and Description

This study utilizes monthly data spanning from January 2005 to November 2024, a period that encompasses several economic phases in Türkiye, including the global financial crisis, post-crisis recovery, political instability, currency crises, and the COVID-19 pandemic[iii]. This extensive timeframe allows us to analyze the effects of minimum wage across various macroeconomic conditions. Our dataset draws primarily from official statistical sources, including the Turkish Statistical Institute (TurkStat), the Central Bank of the Republic of Türkiye (CBRT), and the Ministry of Labour and Social Security (Table 1).

Table 1. Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max	Unit
Minimum wage	239	2442.8	3887.8	350.2	17002.0	TRY
ICOC (CLI)	239	25081.6	33840.7	5139.1	175104.1	Index (1995=100)
TurkStat (CPI)	239	452.1	530.3	114.5	2657.2	Index (2003=100)
Policy rate	239	15.2	9.9	4.5	52.8	%
Exchange rate	239	6.1	8.2	1.2	34.4	USD/TRY
Capacity utilization rate	215	76.1	3.8	60.8	84.1	%
Capacity utilization rate (SA)	215	76.1	3.6	61.9	83.3	%
Unemployment rate	239	10.5	1.8	7.3	15.1	%
Unemployment rate (SA)	238	10.5	1.6	8.0	14.1	%
Industrial production	239	72.5	21.7	37	122.2	Index (2021=100)
Industrial production (SA)	239	72.2	20.9	41.9	110.7	Index (2021=100)
Retail sales volume	178	87.8	28.1	44.3	169.0	Index (2015=100)
Trade balance (SA)	239	-5723.4	2291.6	-13059.0	-609.0	Million USD
Oil price	239	76.4	23.8	26.9	133.6	USD

Note: SA=Seasonally adjusted.

To measure inflation, we employ two distinct indices: the Consumer Price Index (CPI) from TurkStat and the Cost of Living Index (CLI) for wage earners from the İstanbul Chamber of Commerce. The inclusion of both indices enables us to assess potential variations in how different price measures respond to minimum wage adjustments. This approach is particularly valuable given recent debates about the accuracy of official inflation statistics in Türkiye and the divergence between official figures and public perceptions of price increases (Yılmaz, 24 January 2024; Çelik, 15 July 2024)[iv].

Minimum wage data is obtained from the Ministry of Labour and Social Security, capturing both the timing and magnitude of official minimum wage adjustments throughout the sample period. We consider net minimum wages (after tax and social security contributions) in our estimations. For labor market conditions, we use the unemployment rate from TurkStat, a key indicator of labor market slack. Capacity utilization rate in the manufacturing industry, sourced from the CBRT, serves as our primary measure of demand conditions and economic activity. In alternative specifications, we also employ industrial production indices and retail sales volume from TurkStat as robustness checks for economic activity measures.

Exchange rate data (USD/TRY) comes from the CBRT, capturing the significant currency depreciation episodes that Türkiye has experienced, particularly since 2018. The CBRT's policy rate provides information on monetary policy stance throughout the period[v]. For external balance, we include the seasonally adjusted trade balance in goods from TurkStat. We preferred the trade balance in goods as the current account balance data with seasonal adjustments is not available and monthly trade and current account figures fluctuate strongly due to seasonality.

Finally, we incorporate global oil prices as an exogenous variable to control for external inflationary pressures, given Türkiye's position as a net energy importer using Global Price of Brent Crude data from Federal Reserve Bank of St. Louis's (2025) Federal Reserve Economic Data (FRED). Monthly dummy variables are also included as exogenous variables to account for seasonal patterns in economic activity and prices.

5.2 Variable Transformations

To ensure stationarity and proper statistical inference, we employ first differences of variables where appropriate. Specifically, we use the following transformations:

- Δlog(minimum): First difference of the natural logarithm of minimum wage
- Δunemp: First difference of the unemployment rate
- Δcapacity: First difference of capacity utilization rate in manufacturing
- Δlog(USD/TRY): First difference of the natural logarithm of USD/TRY exchange rate
- Δ(policy rate): First difference of the CBRT policy rate
- Δlog(ICOC CLI): First difference of the natural logarithm of Istanbul Chamber of Commerce's Cost of Living Index
- Δlog(TURKSTAT CPI): First difference of the natural logarithm of Consumer Price Index from TurkStat
- Δlog(output industry): First difference of the natural logarithm of industrial production
- Δlog(retail sales volume): First difference of the natural logarithm of retail sales volume
- Δ(trade balance): First difference of seasonally adjusted trade balance

In our baseline models, we also include Δlog(oil price), the first difference of the natural logarithm of oil prices in USD, as an exogenous variable[vi].

5.3 Structural Vector Autoregression (SVAR) Model

To analyze the dynamic relationships between minimum wages, inflation, and other macroeconomic variables, we employ Structural Vector Autoregression (SVAR) models[vii]. The SVAR approach allows us to impose theoretically informed restrictions on contemporaneous relationships between variables while allowing the data to determine dynamic interactions through lagged effects. This methodology is particularly suited to our research question as it enables us to identify the impact of minimum wage shocks on inflation and other economic variables while controlling for endogeneity and reverse causality concerns.

The general form of our SVAR model can be expressed as:

$$A_0 Y_t = A_1 Y_{t-1} + A_2 Y_{t-2} + \cdots + A_p Y_{t-p} + B\varepsilon_t \tag{13}$$

where Y_t is a vector of endogenous variables, A_0 represents the contemporaneous relationships between variables, A_1 through A_p capture the lagged effects up to order p, ε_t is a vector of structural shocks, and B is a diagonal matrix that allows for different variances of the structural shocks.

In our baseline specification (Model 1), the vector Y_t includes:

$$Y_t = [\Delta\log(\text{minimum}), \Delta(\text{policy rate}), \Delta\log(\text{USD/TRY}), \Delta\text{capacity}, \Delta\text{unemp}, \Delta\log(\text{TURKSTAT CPI})]' \tag{14}$$

Or

$$Y_t = [\Delta\log(\text{minimum}), \Delta(\text{policy rate}), \Delta\log(\text{USD/TRY}), \Delta\text{capacity}, \Delta\text{unemp}, \Delta\log(\text{ICOC CLI})]' \tag{15}$$

where TurkStat CPI and ICOC CLI are used in separate estimations.

The identification of the SVAR model requires imposing restrictions on the contemporaneous relationships between variables (matrix A_0). These restrictions are based on our theoretical framework and institutional understanding of the Turkish economy discussed in Section 4. Figure 3 illustrates the contemporaneous effects in our baseline Model 1 specification.

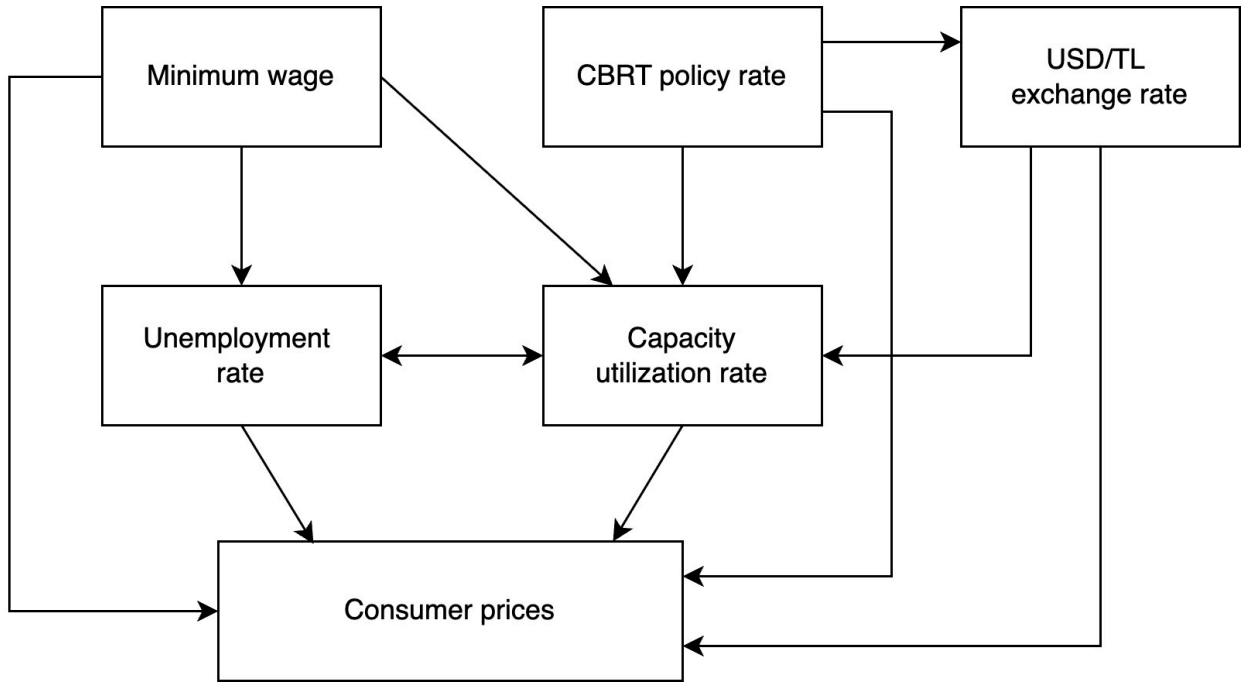

Figure 3. The contemporaneous effects in the Structural Vector Autoregression (SVAR) specification (Model 1).

In this specification, we impose the following identifying assumptions:

1. Minimum wage changes are exogenous within the month, reflecting the institutional reality that minimum wage decisions are made by the government-led commission and are not immediately responsive to other economic variables.

2. The policy rate affects the exchange rate contemporaneously, but not vice versa within the same month, capturing the quick response of financial markets to monetary policy decisions.
3. Both the policy rate and exchange rate affect capacity utilization contemporaneously, reflecting the rapid transmission of financial conditions to economic activity.
4. Minimum wage changes affect capacity utilization contemporaneously, capturing potential demand effects of wage increases.
5. We allow minimum wage changes to contemporaneously affect unemployment rate considering various empirical outcomes discussed in Section 3.4.
6. Capacity utilization affects unemployment contemporaneously, reflecting labor demand adjustments to changes in economic activity. Also declining unemployment could also stimulate capacity utilization through demand.
7. Inflation is affected contemporaneously by all other variables in the system, allowing for both cost-push and demand-pull inflation channels.

The optimal lag length for each specification (in our main and alternative models) is determined using the Akaike Information Criterion (AIC), which balances model fit against parsimony. For most models, the AIC suggests four lags, though some variations use fewer lags depending on the sample period and variables included.

5.4 Model Variations and Robustness Checks

To ensure the robustness of our findings, we estimate several variations of the baseline model:

- Model 1: Our main specification as described above, using both ICOC CLI and TURKSTAT CPI as inflation measures (4 lags) and without seasonally adjusted variables (June 2007 – November 2024).
- Model 2: Replaces Δcapacity with Δlog(output industry) as the measure of economic activity (4 lags, June 2005 – November 2024).
- Model 3: Uses monthly changes in seasonally adjusted capacity utilization and unemployment rate (4 lags for ICOC CLI, June 2007 – November 2024; 3 lags for TURKSTAT CPI, May 2007 – November 2024).
- Model 4: Uses seasonally adjusted data for Δlog(output industry) and Δ(unemp) (4 lags for ICOC CLI, June 2005 – October 2024; 3 lags for TURKSTAT CPI, May 2005 – October 2024).
- Model 5: Restricts the sample to the post-2018 period, when Türkiye entered a new phase of currency instability and high inflation (2 lags for ICOC CLI, January 2018 – November 2024; 1 lag for TURKSTAT CPI, January 2018 – November 2024).
- Model 6: Modifies Model 1 to allow capacity utilization and unemployment to affect exchange rates through import demand within the same month (4 lags, June 2007 – November 2024).
- Model 7: Uses Δlog(retail sales volume) as the measure of economic activity (4 lags, June 2010 – November 2024).
- Model 8: Expands the Model 1 to include the monthly change in seasonally adjusted trade balance, as illustrated in Figure 2, allowing us to assess the effect of minimum wage increases on external balance (4 lags, June 2007 – November 2024).

- Model 9: Modifies Model 8 with seasonally adjusted data for Δcapacity and Δ(unemp) (4 lags for ICOC CLI, June 2007 – October 2024; 3 lags for TURKSTAT CPI, May 2007 – October 2024).

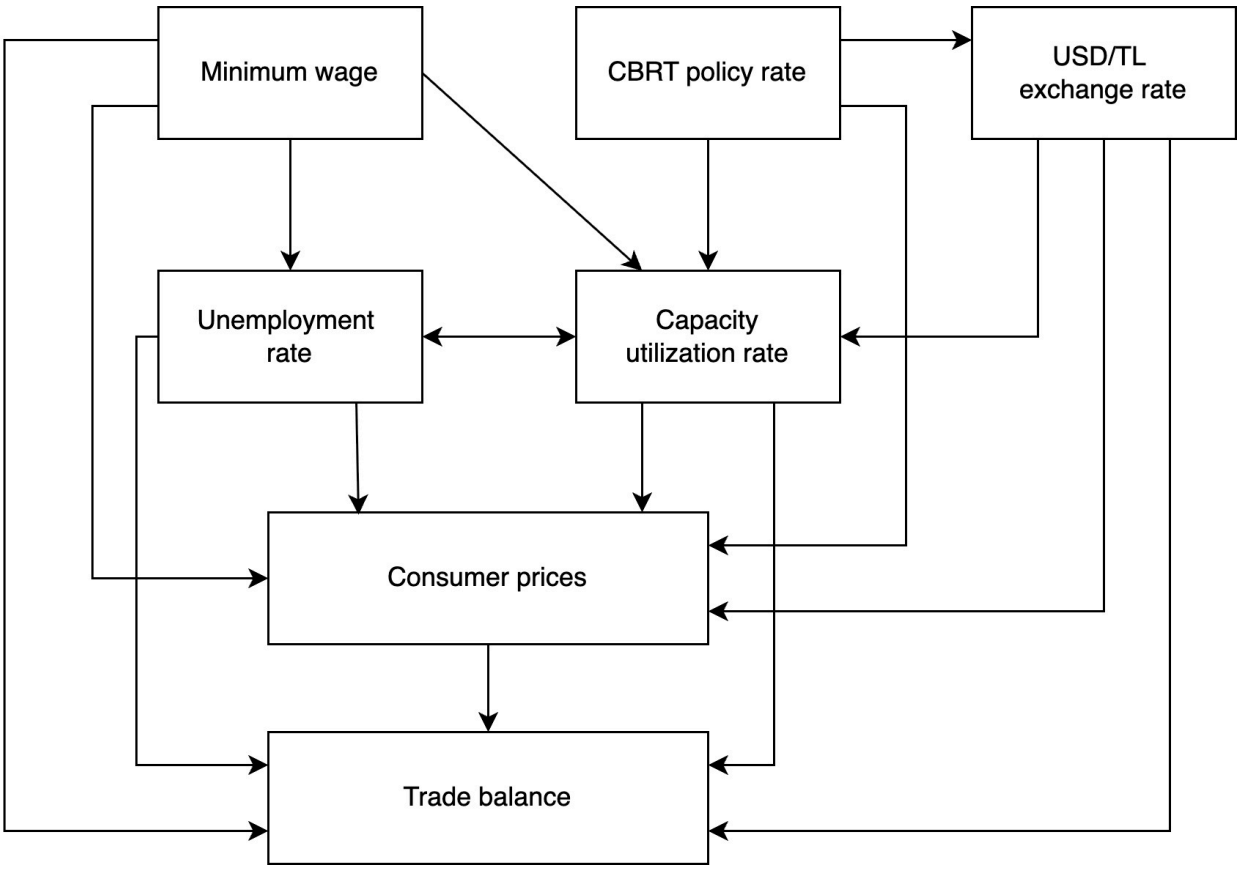

Figure 4. The contemporaneous effects in the Structural Vector Autoregression (SVAR) specification (Models 8 and 9).

Drawing on monthly data, our analysis covers the period from 2005 to 2024, with the specific time span for each model determined by data availability at the time of estimation. Monthly dummies and contemporaneous values up to *p*-year lags of Δlog(oil price) are included as exogenous variables in all models. The lag length *p* for Δlog(oil price) corresponds to the number of lags used in the models. This comprehensive approach allows us to test the sensitivity of our results to

different measures of economic activity, alternative specifications of contemporaneous relationships, sample periods, and the inclusion of additional variables. Consistency across these variations would strengthen confidence in our main findings regarding the impact of minimum wage increases on inflation and other macroeconomic variables in Türkiye.

In Models 8 and 9, we include the trade balance to examine the possible impact through the trade balance channel. Figure 4 presents the contemporaneous effects. We consider changing import demand driven by higher minimum wages, unemployment and capacity utilization rates. We also take into account rising costs from higher minimum wages, as well as the effects of the USD/TRY exchange rate and consumer prices through the real exchange rate, which may influence international competitiveness.

6. Results and Discussion

Our SVAR analysis reveals a significant positive effect of minimum wage increases on consumer inflation in Türkiye. In our baseline model (Model 1), a one standard deviation increase in minimum wages generates a statistically significant rise in both measures of consumer prices—the Istanbul Chamber of Commerce's Cost of Living Index (ICOC CLI) and TURKSTAT's Consumer Price Index (CPI). This effect is largest and statistically significant at the 5% level contemporaneously, and it gradually diminishes over the following months (Figures 5-6).

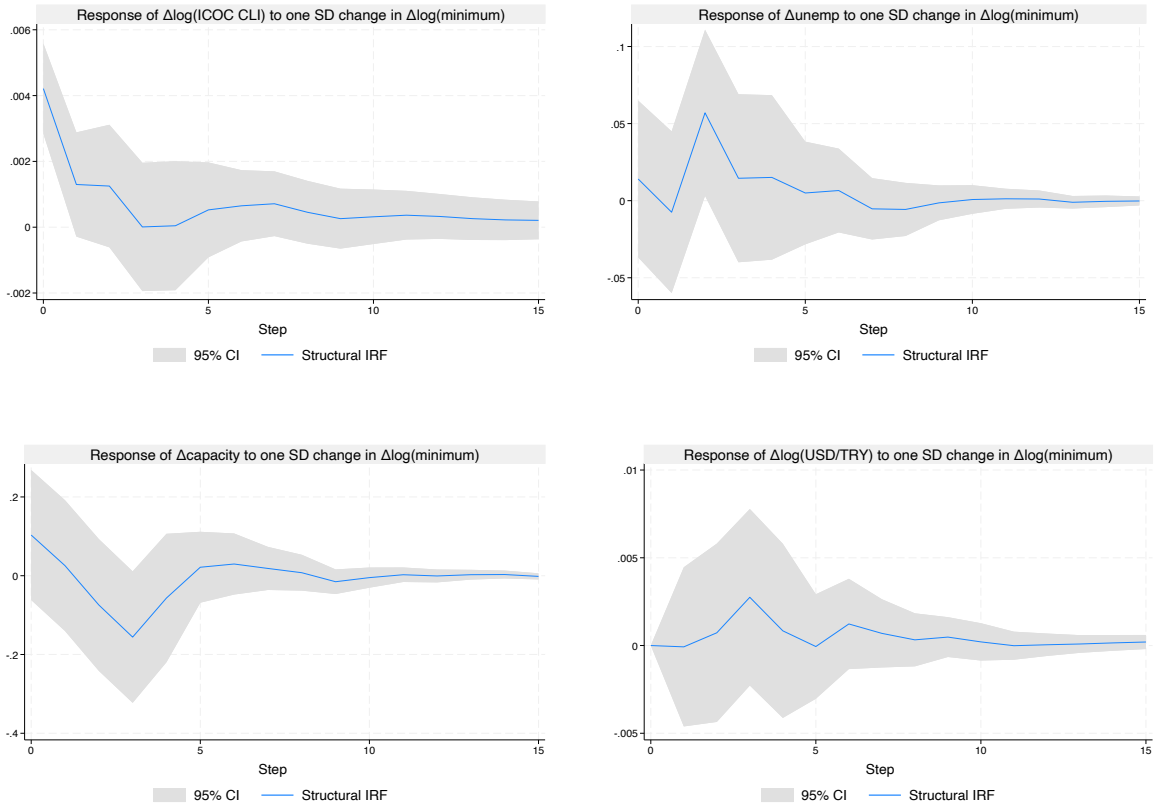

Figure 5. The impact of one standard change in minimum wages on consumer (ICOC Cost of Living Index for Wage Earners), unemployment rate, capacity utilisation rate and USD/TRY exchange rate (June 2007 – November 2024, Model 1).

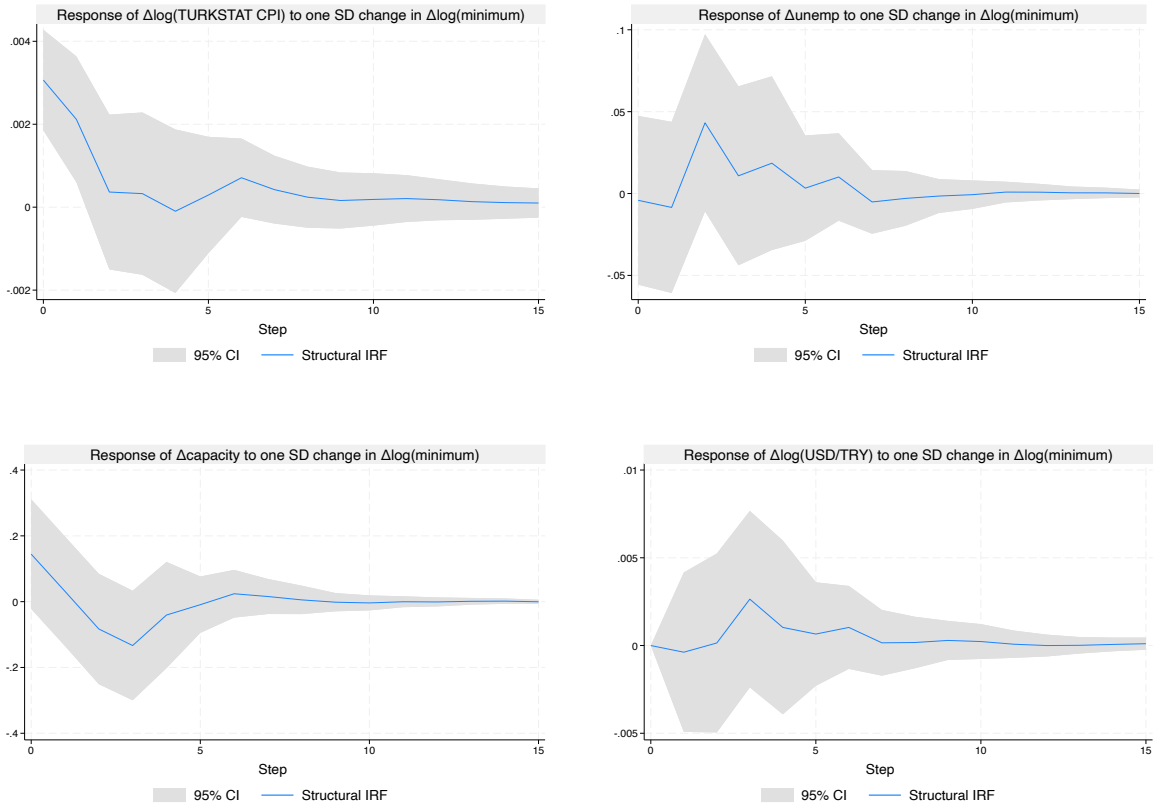

Figure 6. The impact of one standard change in minimum wages on consumer (TurkStat Consumer Price Index), unemployment rate, capacity utilisation rate and USD/TRY exchange rate (June 2007 – November 2024, Model 1).

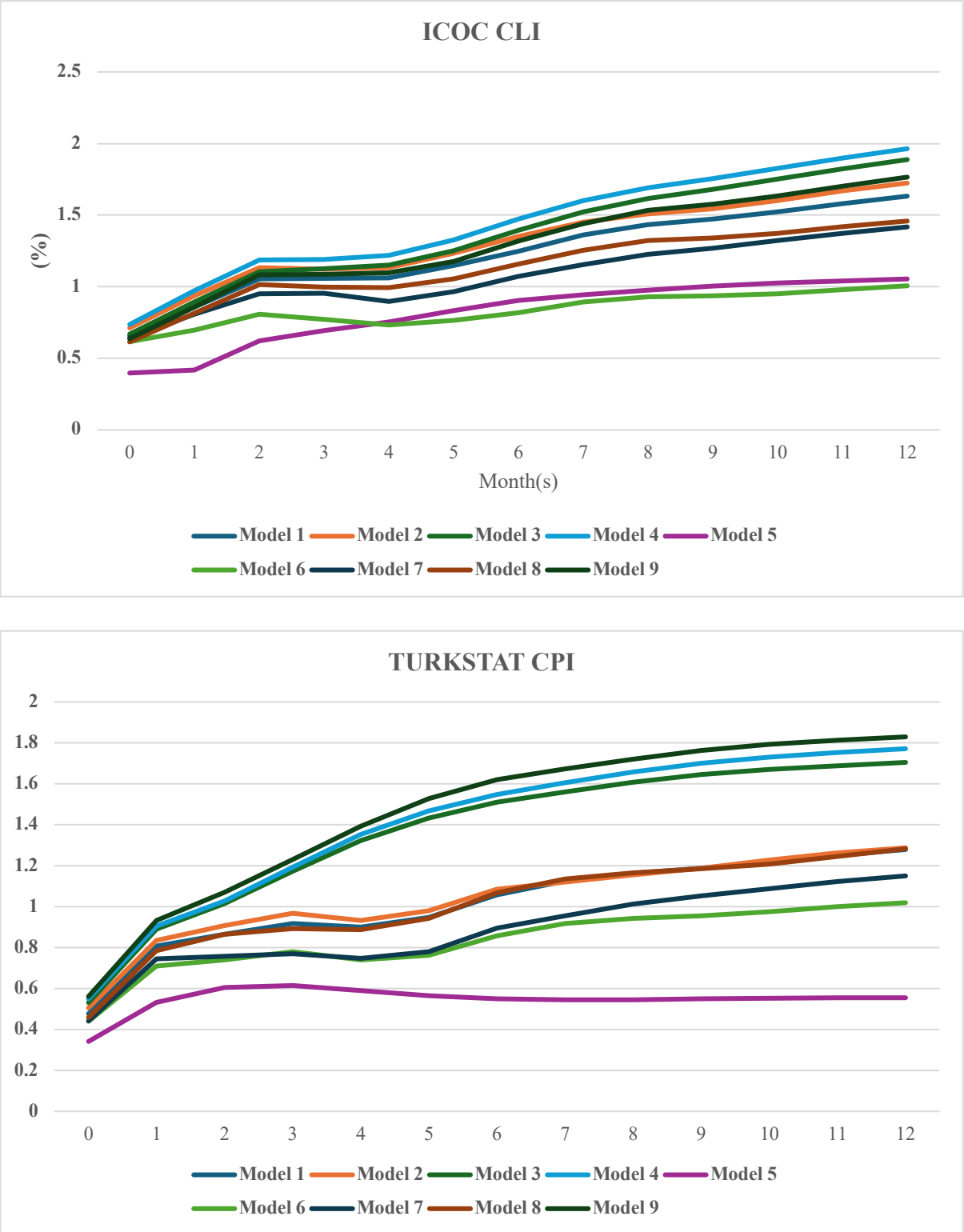

Figure 7. The impact of 10% increase on minimum wages on percentage increase in prices (ILOC CLI, TURKSTAT CPI)

Quantitatively, our baseline model (Model 1) indicates that a 10% increase in the minimum wage cumulatively raises the ICOC CLI by approximately 1.1 percentage points in two months and 1.6 percentage points within a year (Figure 7)[viii]. The magnitude of the cumulative effect of a 10% increase in the minimum wage is somewhat smaller for the TurkStat CPI, about 0.9 percentage points in two months and 1.3 percentage points within a year, suggesting that official inflation statistics may understate the impact of minimum wage increases on the cost of living for wage earners. Our results for the effect of minimum wages on the TurkStat CPI are very close to those of CBRT (2023), which estimates that a 1% increase in minimum wages raises consumer inflation—measured by the TurkStat CPI excluding unprocessed food and alcohol—by 0.06–0.08 percentage points in the first quarter and 0.08–0.12 percentage points over a year. Our estimates are slightly higher than those reported by CBRT (2021).

The less-than-proportional response of consumer prices may be due to the relatively small share of personnel costs in production value (averaging 13.0% across all non-farm sectors, excluding finance, insurance, and public administration, during 2017–2019, according to CBRT, 2021). The real share of labor costs in production value could more accurately be assessed by an input-output analysis. The productivity improvements following minimum wage increases (Ku, 2022; Hau et al., 2020) could also be another factor that mitigates the impact on consumer prices.

Still, from a theoretical perspective, our results are also consistent with the Post-Keynesian conflict inflation framework. The moderate but significant pass-through from minimum wages to consumer prices suggests that firms in Türkiye possess sufficient market power to partially pass on increased labor costs to consumers.

The inflationary impact appears robust across alternative model specifications. When we use industrial output or retail sales as measures of economic activity (Models 2, 4, and 7), the estimated effect remains within the range of 1.4-2.0 percentage points for the ICOC CLI and 1.2-1.8 percentage points for the TurkStat CPI. Similarly, using seasonally adjusted variables (Models 3 and 4) or allowing capacity utilization and unemployment rate to contemporaneously affect exchange rates (Model 6) yields comparable results. This consistency across specifications strengthens confidence in our findings. Overall, a 10% increase in minimum wages raises consumer prices by 1–2% over a year according to all models, except for Model 5, which shows that a 10% increase in minimum wages leads to a 0.6 percentage point rise in the TurkStat CPI in the post-2018 period.

Our results show modest impacts of minimum wage increase on unemployment in Türkiye. In our baseline models with ICOC CLI and TurkStat CPI (Model 1), a 10% increase in the minimum wage respectively leads to a 0.15 percentage point and a 0.10 percentage point increase in the unemployment rate within a year. This effect is statistically significant (at the 5% level) only for the second month increase in the ICOC CLI estimation (Figure 5). The impact is also economically small, suggesting that the Turkish labor market adjusts to higher minimum wages without substantial job losses. The impact of a 10% increase in the minimum wage on the unemployment rate within a year is close to zero, ranging from –0.10 to 0.16 percentage points across our specifications (with the lowest effect in Model 5 using TurkStat CPI and the highest in Model 8 using ICOC CLI)[ix].

This finding aligns with the growing body of empirical literature finding minimal employment effects of minimum wage increases (Dube, 2019b; Card & Krueger, 1994; Cengiz et al., 2019). It

is also particularly consistent with Işık et al.'s (2020) study on Türkiye, which found that the substantial minimum wage increase in 2016 did not significantly affect overall employment, although it did increase informality. The presence of monopsonistic elements in Türkiye's labor market, as suggested by Card and Krueger (1995) and Manning (2021), could explain this pattern.

In our baseline model, initially, minimum wage increases seem to boost capacity utilization, likely reflecting increased consumer demand from higher-wage workers with high marginal propensity to consume. However, this positive effect typically dissipates within 2-3 months, followed by a small negative effect. Overall, the impact of minimum wages on capacity utilization is insignificant (Figures 6-7) for all months at the 5% level, and 10% increase cumulatively only reduces capacity utilization by 0.15 percentage points in ICOC CLI and by 0.08 percentage points in TurkStat CPI estimations.

When we use alternative measures of economic activity, such as industrial output growth (Models 2 and 4) or retail sales volume (Model 7), we find that minimum wages have negligible effects on demand[x]. Hence, it's not possible to predict a clear demand regime for Türkiye based on these results. These results reflect that the minimum wage's impact on inflation through the *demand channel* is negligible.

Our baseline models for TurkStat CPI and ICOC CLI respectively indicate that minimum wage increases contribute to exchange rate depreciation, with a 10% minimum wage hike leading to a 0.9% and 1.2% depreciation of the Turkish lira against the US dollar within a year. However, the effects for all months are insignificant at 5% level (Figures 5 and 6).

Our results provide other important insights into Türkiye's inflation dynamics (Figures 8-9). The exchange rate emerges as a much more powerful driver of inflation, with a 10% depreciation in the lira increasing prices by approximately 8.7-9.1 percentage points over a year. This aligns with studies identifying imported inflation and currency depreciation as major inflation factors in emerging economies (Vernengo & Perry, 2018; Yusifzada et al., 2024).

Our estimations for TurkStat CPI indicate that a one percentage point increase in the CBRT policy rate has a contemporaneously significant positive effect on consumer prices, possibly reflecting the direct cost-push impact through higher financing costs. However, the cumulative effect of the policy rate on CPI converges to zero within one year. By contrast, a one percentage point increase in the policy rate reduces ICOC CLI by approximately 0.4 percentage points over a year, although the effects remain statistically insignificant across all horizons. The limited evidence for a systematic policy rate–inflation relationship may reflect the non-linear and context-specific nature of monetary policy transmission in Türkiye. In 2021 a currency shock and high inflation were followed by a reduction in the CBRT's policy rate; however, the impact of changes in policy rate could be case dependent[xi].

On the other hand, the unemployment rate does not exert a statistically significant effect in any period, while capacity utilization is significant only contemporaneously in explaining ICOC CLI. Overall, a percentage point increase in the capacity utilization rate increases ICOC CLI by only 0.2% over a year. These findings are consistent with CBRT Deputy Governor Cevdet Akçay's (EBRD, 14 May 2025) claim that "*In Turkey, there is no output-inflation tradeoff, which means 'in order to bring inflation down, you have to sacrifice a lot on the output front' or 'if you want to growth faster it's going to be costing a lot of inflation' etc.. That tradeoff does not exist in Turkey"*.

These results also show that the impact of minimum wage on consumer prices through the direct demand channel is negligible.

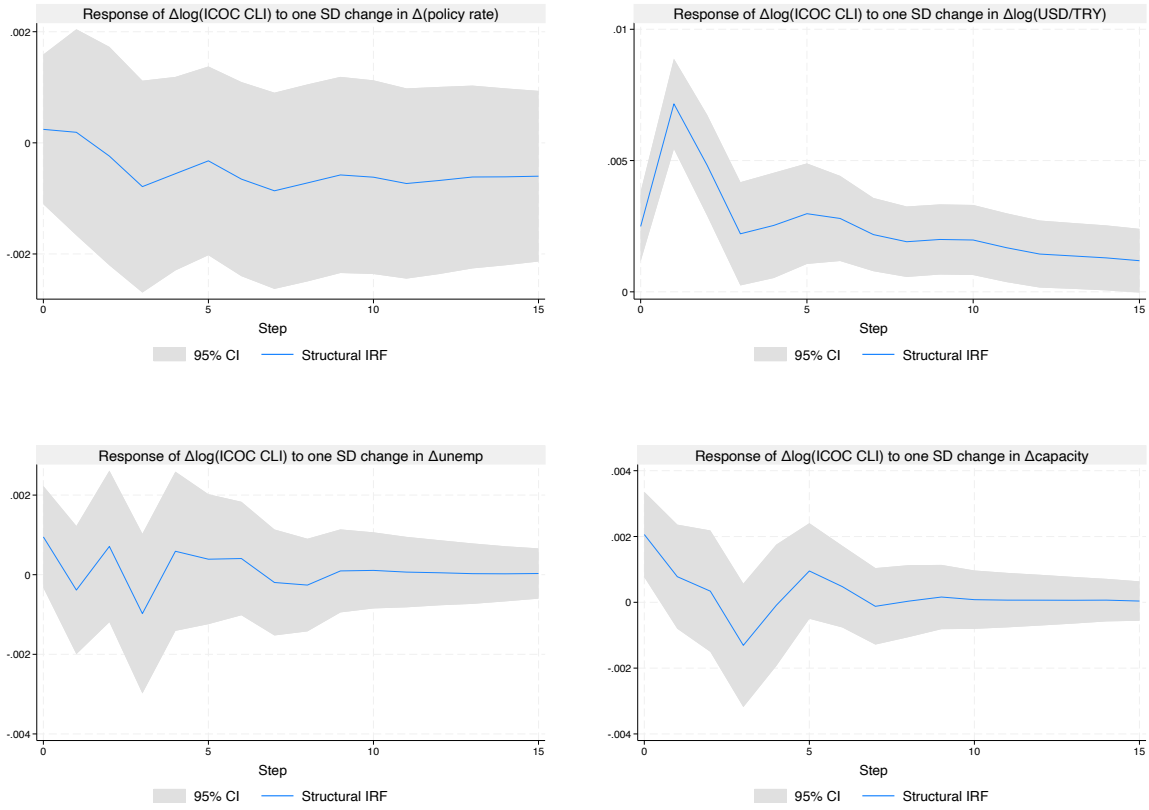

Figure 8. The impact of one standard change in CBRT policy rate, USD/TRY exchange rate, unemployment rate and capacity utilisation rate on consumer prices (ICOC Cost of Living Index for Wage Earners) (June 2007 – November 2024, Model 1).

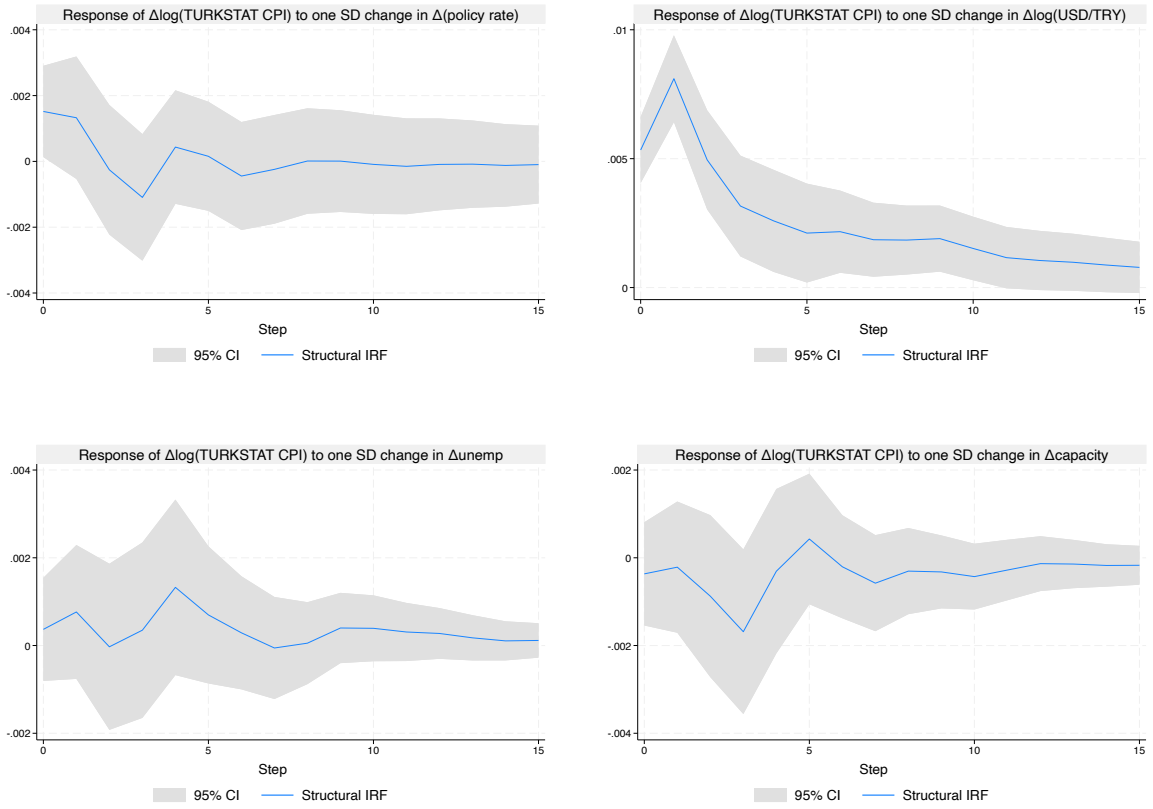

Figure 9. The impact of one standard change in CBRT policy rate, USD/TRY exchange rate, unemployment rate and capacity utilisation rate on consumer prices (TURKSTAT Consumer Price Index) (June 2007 – November 2024, Model 1).

To test the minimum wage's possible indirect effects on inflation through import demand and competitiveness (*trade balance channel*), we include trade balance in our expanded models, which (Models 8 and 9) reveal significant negative effects on Türkiye's external position. Minimum wage contemporaneously leads to a significant (at 5% level) increase in trade deficit, which is partially reduced by a significant positive effect in the second month (Figures 10-11). This positive effect could be due to minimum wage's positive effect on labor productivity. Overall, a 10% increase in the minimum wage reduces the trade balance by between 950 million and 2,340 million USD annually, equivalent to 0.11% to 0.27% of GDP. This suggests that while the effects are

economically meaningful, the overall impact on external competitiveness is not very strong in magnitude.

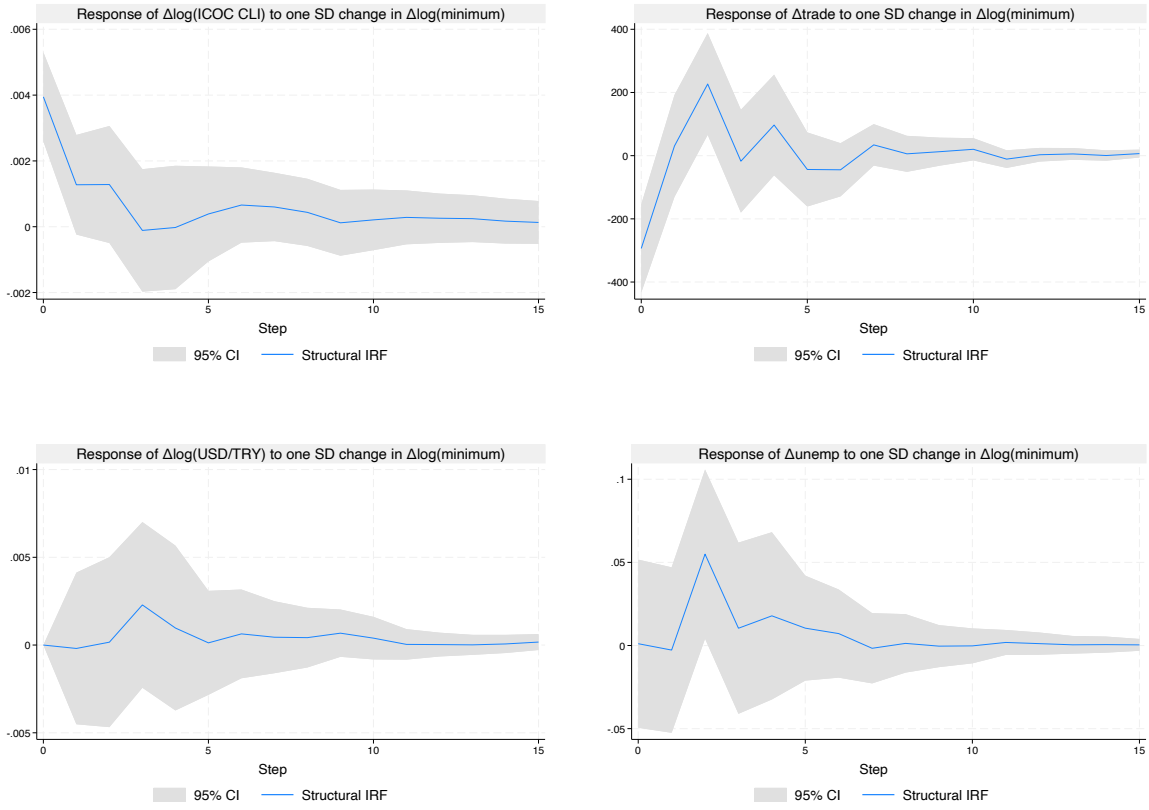

Figure 10. The impact of one standard change in minimum wages on consumer (ICOC Cost of Living Index for Wage Earners), trade balance, USD/TRY exchange rate, unemployment rate (June 2007 – November 2024, Model 8).

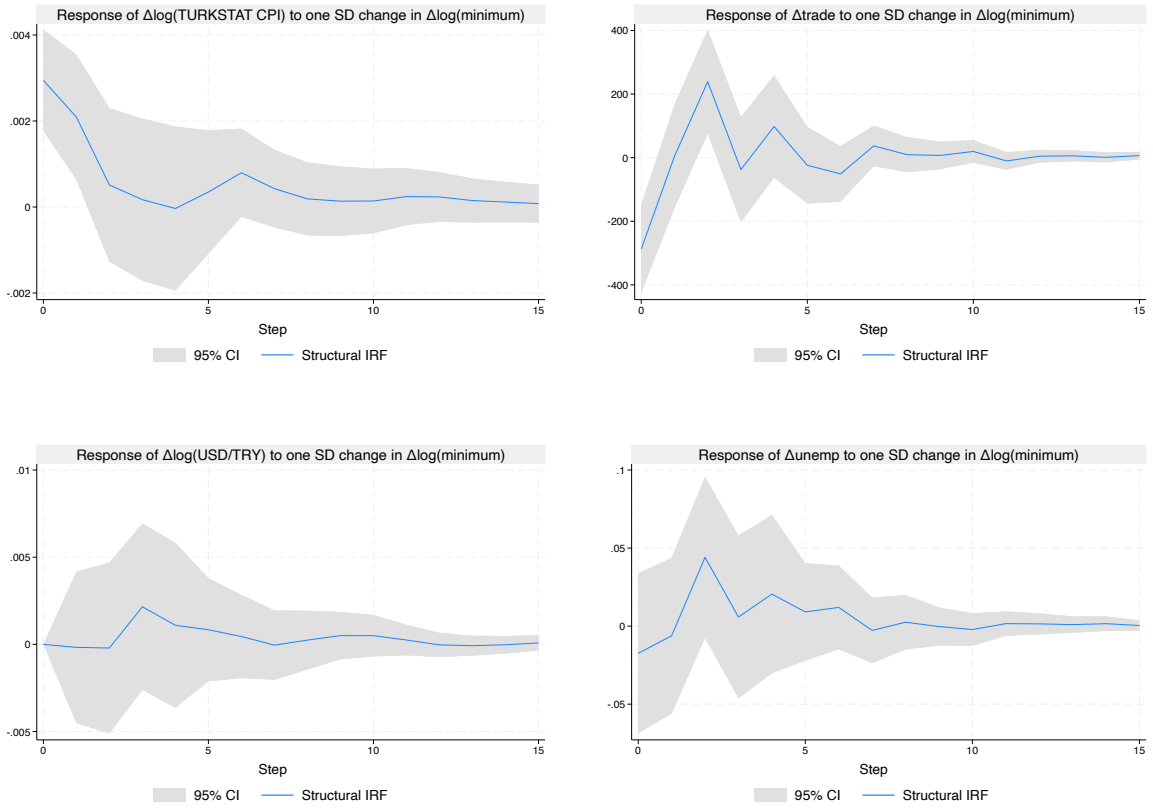

Figure 11. The impact of one standard change in minimum wages on consumer (TURKSTAT CPI), trade balance, USD/TRY exchange rate, unemployment rate (June 2007 – November 2024, Model 8).

Our estimations align with empirical work based on Post-Kaleckian models, which find that, *ceteris paribus*, rising unit labor costs reduce export competitiveness and increase import demand (Onaran & Galanis, 2014; Blecker et al., 2022) and Onaran et al. (2022) who estimate that the negative effects of rising wages are mitigated over the medium run through labor productivity gains. They are also consistent with empirical findings from other countries showing negative impacts of minimum wage increases on exporting firms (Harasztosi & Lindner, 2019; Hau et al., 2020). For Türkiye, with its persistent current account deficits and reliance on external financing,

these trade balance effects represent a constraint on minimum wage policy that must be balanced against domestic social objectives.

Table 1. The impact of 10% increase in minimum wages on trade balance

Impact of 10% increase in minimum wages on trade balance (million USD)				
	Model 8 (ICOC CLI)	**Model 9 (ICOC CLI)**	**Model 8 (TURKSTAT CPI)**	**Model 9 (TURKSTAT CPI)**
Contemporaneous	-456.9	-476.0	-447.0	-472.2
Quarterly	-922.2	-1025.9	-955.5	-1145.3
6 months	-938.0	-1268.9	-1066.0	-1672.1
Yearly	-949.8	-1961.6	-1180.4	-2340.3
Impact of 10% increase in minimum wages on trade balance (trade balance/GDP, %)				
	Model 8 (ICOC CLI)	**Model 9 (ICOC CLI)**	**Model 8 (TURKSTAT CPI)**	**Model 9 (TURKSTAT CPI)**
Contemporaneous	-0.05	-0.06	-0.05	-0.05
Quarter	-0.11	-0.12	-0.11	-0.13
6 months	-0.11	-0.15	-0.12	-0.19
Year	-0.11	-0.23	-0.14	-0.27

Notes: Average GDP for 2007–2024 from World Bank (2025) are used in trade balance-to-GDP calculations. Effects over a quarter correspond to cumulative effects for months 0–2; over six months to cumulative effects for months 0–5; and over a year to cumulative effects for months 0–11.

According to our baseline models (Model 1 and Model 8), the impact of minimum wages on the USD/TRY exchange rate is statistically insignificant across all periods. The economic effects are also modest, as a 10% increase in minimum wages results in only a 0.8 to 1.2 percentage point rise in the USD/TRY rate. However, the trade balance channel may not be fully captured by an SVAR analysis, since the CBRT manages the USD/TRY through monetary policy, including the purchase and sale of reserve assets. In the short run, increasing import demand or declining export competitiveness may also not necessarily lead to depreciation of TRY with the support of capital

inflows. Yet such a pattern may not be sustainable, as episodes of hot money inflows and external debt accumulation have historically culminated in currency crises in Türkiye (Akyüz & Boratav, 2003; Orhangazi & Yeldan, 2021).

From a policy perspective, our findings suggest that minimum wage increases in Türkiye generate moderate but manageable inflation pressures while having minimal employment costs. The impact on the trade balance suggests that minimum wage policies might need to be coordinated with measures to enhance productivity and non-price competitiveness to mitigate external imbalances.

Our results also highlight the importance of considering multiple inflation measures. The consistently higher impact on the ICOC CLI compared to the TurkStat CPI suggests that the inflation experienced by wage earners may exceed official statistics, potentially undermining the real income gains from nominal minimum wage increases. This divergence underscores the value of independent price monitoring for assessing the effectiveness of minimum wage policies in protecting workers' purchasing power.

In summary, our analysis indicates that while minimum wage increases do contribute to inflation in Türkiye, this effect should be viewed in context: it is moderate in magnitude, gradual in development, and considerably smaller than the impact of exchange rate movements. Furthermore, the minimal employment costs suggest that minimum wage policy remains a viable tool for addressing income inequality and supporting low-wage workers, though attention must be paid to its implications for external competitiveness. The challenge for policymakers lies in balancing these domestic social objectives against macroeconomic stability concerns, potentially through complementary policies to enhance productivity and strengthen non-price competitiveness.

7. Conclusion

This study has examined the impact of minimum wage increases on inflation and other macroeconomic variables in Türkiye, a high-inflation emerging economy where minimum wage policy has gained increasing prominence as a tool for income distribution and social protection. Using monthly data from 2005 to 2024 and employing Structural Vector Autoregression (SVAR) models, we have documented several key findings that contribute to both scholarly understanding and policy debates.

Our main results (Model 1) indicate that minimum wage increases do contribute to inflation in Türkiye, with a 10% increase in the minimum wage raising annual inflation by approximately 1.6 percentage points according to the Istanbul Chamber of Commerce's Cost of Living Index and 1.3 percentage points based on TurkStat's Consumer Price Index. This effect is moderate but significant, suggesting that firms possess sufficient market power to partially pass on higher labor costs to consumers. However, the less-than-proportional relationship between wage and price increases indicates that firms also respond through profit margin adjustments and productivity enhancements.

These inflationary effects are accompanied by minimal employment costs. A 10% minimum wage increase raises the unemployment rate by only about 0.15 percentage points, challenging traditional predictions of significant disemployment effects. This finding aligns with monopsony models of labor markets and with international evidence showing limited employment impacts of minimum wage policies.

A negative consequence appears to be on Türkiye's trade balance, with a 10% minimum wage hike reducing the trade balance by between 0.11% and 0.27% of GDP annually. This external impact represents a constraint on minimum wage policy in an open economy with persistent current account deficits.

Considering that the impact of minimum wage increases on demand is weak, the direct effect of demand on consumer inflation in Türkiye is small, and the short-run effects of minimum wages on depreciation are insignificant, we conclude that the estimated effects on consumer prices operate mainly through the *cost channel* rather than the *demand channel*. However, the impact of minimum wages may materialize later through the *external trade channel*.

These findings have significant policy implications. The moderate inflation effect suggests that minimum wage policy remains a viable tool for improving the welfare of low-wage workers, particularly given the minimal employment costs. However, policymakers should consider complementary measures to enhance productivity and non-price competitiveness to mitigate the negative trade balance effects.

More broadly, our analysis benefits from Post-Keynesian conflict perspective on inflation, where distributional struggles between workers and firms drive price dynamics. In Türkiye's case, while minimum wage increases do contribute to inflation, their impact is considerably smaller than that of exchange rate movements, suggesting that currency stability remains paramount for price stability.

As Türkiye continues to navigate economic challenges, including high inflation and currency volatility, understanding these relationships is crucial for designing policy frameworks that

balance social protection objectives against macroeconomic stability concerns. Future research should explore how these dynamics evolve as Türkiye's economic structure and policy environment continue to change.

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Endnotes

[i] Authors' calculations from CBRT (2025).

[ii] Authors' calculations from data retrieved from Confederation of Turkish Trade Unions (2025) and Ministry of Labour and Social Security (2025). The Türk-İş hunger line is determined by the cost of essential food items required to meet the basic nutritional needs of a household.

[iii] The sample is restricted to January 2005–November 2024, as the TurkStat CPI series begins in January 2005 and November 2024 is the most recent inflation observation available at the time of analysis.

[iv] Among the critiques of TurkStat, Yılmaz (24 January 2024) notes that between 2000 and 2021, the annual consumer inflation gap between TurkStat and the ICOC fluctuated between -5% and 5%; however, from late 2021 onwards, this gap began to rise sharply, peaking at 28% in December 2022. Similarly, the annual inflation gap between the TRNC (Turkish Republic of Northern Cyprus) Statistical Institute and TurkStat fluctuated between -10% and 13% from 2001 to 2021, but rose rapidly from late 2021, reaching 38% in August 2022. Although it has since declined, as of December 2023, the gap still stood at 19%. Yılmaz also reflects that the TRNC Statistical Institute and ICOC inflation figures

are more closely aligned with each other than with TurkStat's data, raising further doubts about the reliability of TurkStat's figures.

Food price data from the Center for Economics and Finance Research (CEFIS), based on online sources, also diverged from TurkStat's food price figures by 44% in June 2024 (with January 2020 as the base month), before narrowing to 25% in January 2025 (CEFIS, 2025; for methodology, see Soybilgen, Yazgan, and Kaya, 2023).

Moreover, in June 2022, TurkStat stopped publishing detailed data on the item basket and average item prices, at a time when doubts about the credibility of its data were being widely voiced, further undermining transparency (Çelik, 15 July 2024). Between April 2019 and January 2022, the chairmanship of TurkStat changed three times in rapid succession, suggesting either political interference and/or institutional problems.

[v] As noted by Gürkaynak et al. (2023), the CBRT, for a period, used a combination of the announced policy rate, the top end of the interest rate corridor, and the late liquidity rate to fund banks, thereby keeping interest rates elevated without provoking government criticism. Gürkaynak et al. indicate that the effective policy rate shifted from the overnight borrowing rate to the weighted average cost of CBRT funding in 2011.

Accordingly, we use the weighted average cost of CBRT funding from CBRT as the policy rate for 2011 onwards. We observe substantial deviations between the CBRT policy rate (weekly repo rate) and the weighted average cost of CBRT funding starting in November 2011. This gap significantly narrowed and became negligible by June 2018 with "the simplification process regarding the operational framework of the monetary policy" (CBRT, 2018).

However, the weighted average cost of CBRT funding data is not available for the pre-2011 period. For 2005-2010, we calculated the average policy rate for each month, weighted by the number of days each rate was in effect. The CBRT policy rate was the overnight borrowing rate until May 2010, when it was officially changed to the weekly repo rate. As both the overnight borrowing rate and the weekly repo rate remained unchanged in May 2010, we record the policy rate change for that month as zero.

[vi] We do not control for informal employment rate, markup rates, or capital concentration due to the lack of monthly observations for these variables.

[vii] Using the Engle–Granger causality test, we found that the variables are not significantly cointegrated with log(TURKSTAT CPI) or log(ICOC CLI) at the 10% level in any of our models. The results are available upon request.

[viii] Following the critiques of Ziliak and McCloskey (2004, 2008) on the dismissal of statistically insignificant variables, we account for the effects of variables that are statistically insignificant in the econometric regressions when calculating the cumulative economic effects.

[ix] Estimations are available upon request.

[x] According to Model 2, using ICOC CLI and TURKSTAT CPI, a 10% increase in the minimum wage raises industry output by 0.04% and 0.06% within a year, respectively. In Model 4, a 10% increase in the minimum wage leads to a 0.001% increase in seasonally adjusted industry output when ICOC CLI is controlled for, but a 0.002% decline when TURKSTAT CPI is controlled for. Finally, according to Model 7, using ICOC CLI and TURKSTAT CPI, a 10% increase in the minimum wage raises retail sales volume by 0.004% and 0.012% within a year, respectively.

[xi] According to Models 8 and 9, which use ICOC CLI and TURKSTAT CPI, a one percentage point increase in the CBRT policy rate improves the trade balance by USD 2.8–3.0 billion, equivalent to around 0.3% of average GDP over 2007–2024.

Appendix 1. Long-term Trends in Türkiye's Minimum Wage

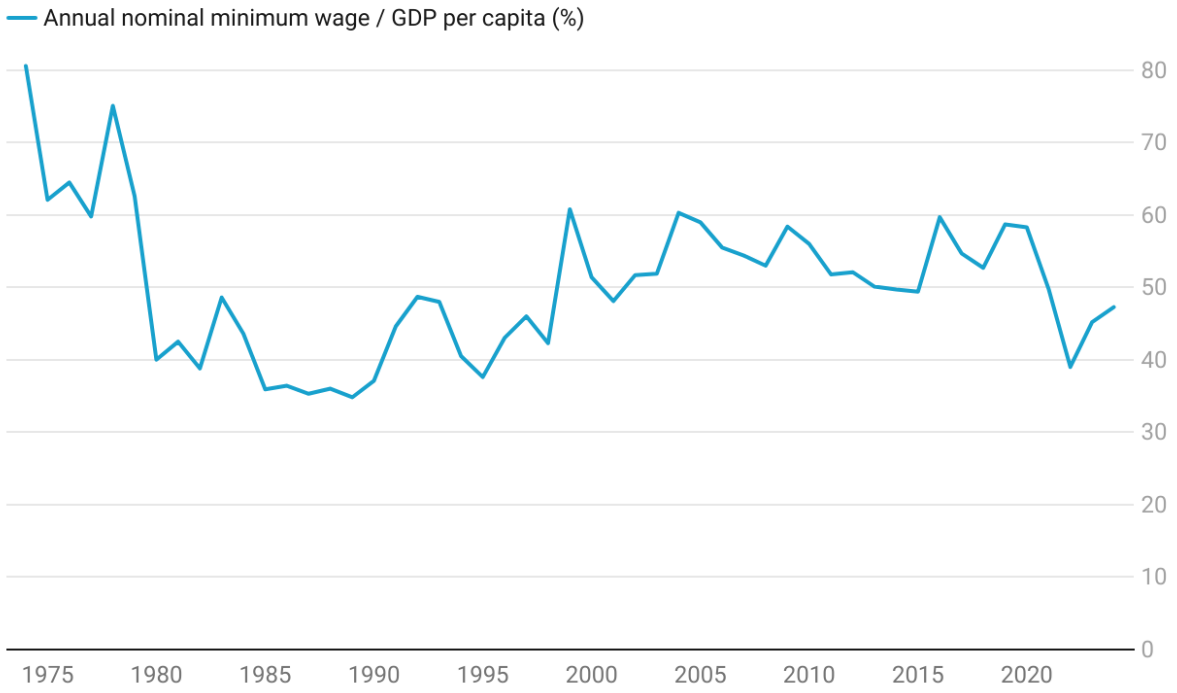

Figure A1.1. Annual nominal minimum wage/GDP per capita (1974 – 2024)

Source: DİSK-AR (2024) for 1974–2023. Data for 2024 is the authors' calculations using DİSK-AR (2024) and TurkStat (2025).

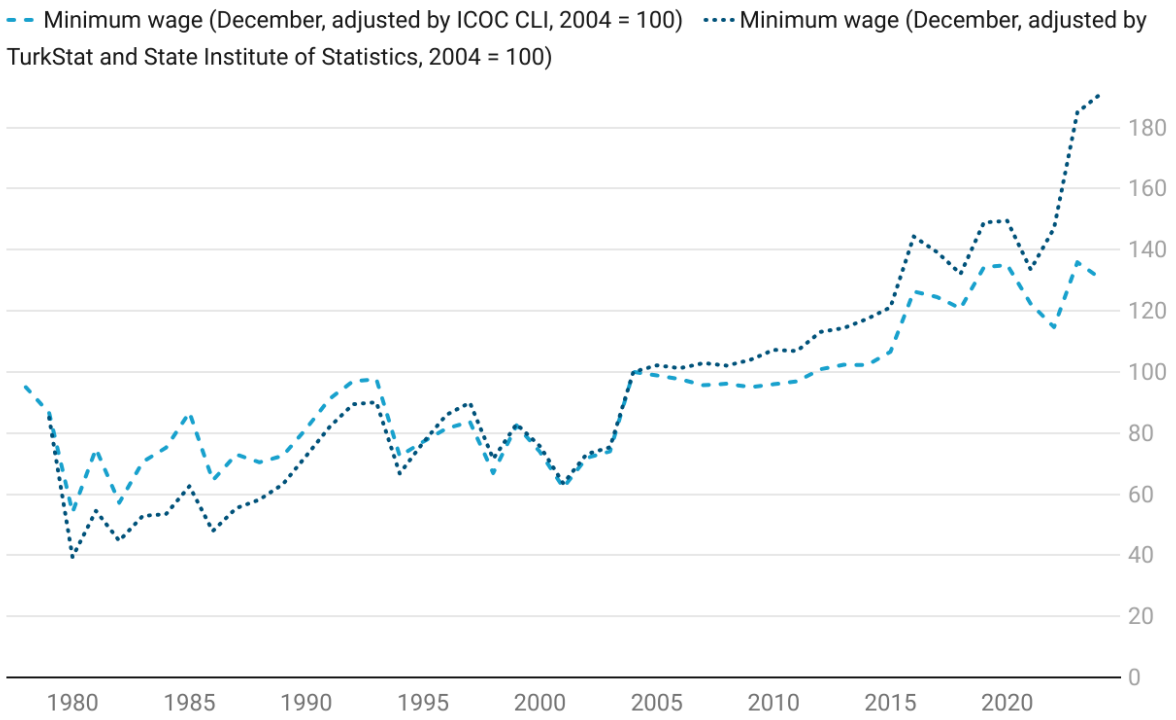

Figure A1.2. Real net minimum wage per year (December 2004 = 100)

Source: Authors' calculations from data retrieved from Ministry of Labour and Social Security (2025), CBRT (2025), Presidency of Türkiye, Presidency of Strategy and Budget (2025) and Tunca (1998).

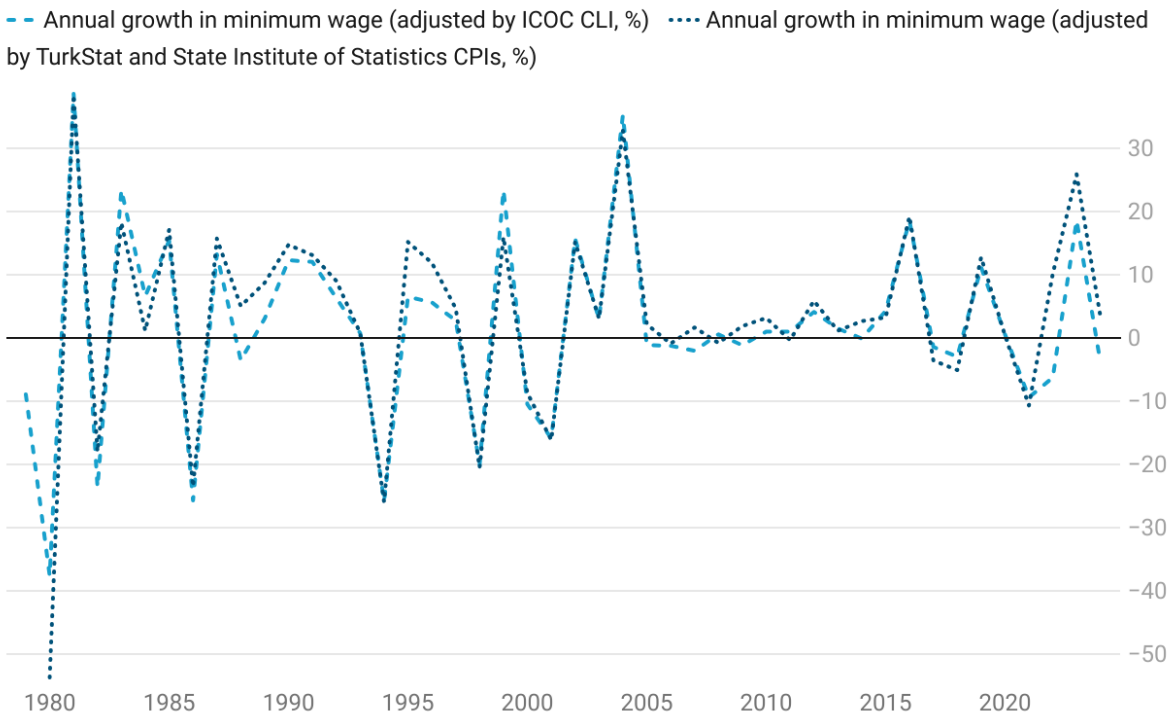

Figure A1.3. Annual growth in real net minimum wage per year

Source: Authors' calculations from data retrieved from Ministry of Labour and Social Security (2025), CBRT (2025), Presidency of Türkiye, Presidency of Strategy and Budget (2025) and Tunca (1998).