

# INFLATION REPORT

2024-IV

November 8, 2024



## Contents

<b>1. Overview .....</b>	<b>1</b>
1.1 Monetary Policy Decisions .....	3
<b>2. Economic Outlook .....</b>	<b>6</b>
2.1 Global Economy .....	6
2.2 Financial Conditions.....	11
2.3 Economic Activity .....	17
2.4 Inflation .....	27
<b>3. Medium-Term Projections .....</b>	<b>55</b>
3.1 Current State, Short-Term Outlook and Assumptions.....	55
3.2 Medium-Term Projections .....	57
3.3 Key Risks to Inflation Forecasts and Possible Impact Channels .....	60
<b>Boxes</b>	
<b>Box 2.1</b> Impact of Fed's Rate Cuts on Emerging Markets .....	35
<b>Box 2.2</b> The Relationship Between Retail Loan Utilization and Income .....	38
<b>Box 2.3</b> Findings from Interviews with Firms .....	42
<b>Box 2.4</b> Fiscal Stance in the MTP .....	46
<b>Box 2.5</b> Evaluation of Underlying Inflation Indicators .....	48
<b>Box 2.6</b> Rent Inflation and RPS Leading Indicator .....	53
<b>Box 3.1</b> Consumers' Perceived and Expected Inflation.....	64

# 1. Overview

**Global inflation exhibits an outlook more consistent with targets than the previous reporting period.**

**Labor markets normalize further while stickiness in services inflation weakens but continues.** Leading indicators of global economic activity suggest that the manufacturing industry remains sluggish and the services sector is still the main driver of growth. The global growth outlook, supply side factors and geopolitical risks continue to shape commodity prices. In the reporting period, non-energy commodity prices have displayed a widespread increase while the volatile course of oil prices has been notable. Fluctuations in global demand expectations led by the People's Bank of China's policy measures and the developments in the Chinese economy, coupled with the uncertainties stemming from the US elections have affected the risk sentiment recently. Central banks lower the level of monetary tightness so as to keep up the disinflation process and contain the accumulating downside risks to growth and employment. Despite a better inflation outlook, the elevated uncertainty and brisk risks cause central banks to maintain their prudent stances.

**The global risk appetite deteriorated rapidly amid geopolitical developments, concerns over recession and the Bank of Japan's surprising rate hike in early August, but improved in the subsequent period.**

**However, due to geopolitical risks accompanied by the arising uncertainties regarding the US election process, this improvement remained limited.** The Fed joined the group of major central banks initiating rate cuts, which underpinned the recovery in the global risk appetite. On the other hand, mounting tension in the Middle East accompanied by the uncertainties brought about by the US elections remain as the leading risk factors to global financial conditions. Against this background, risk premiums of emerging market economies receded to pre-August levels, while Türkiye's five-year CDS premium fell to 272 basis points as of October 25. In this period, implied volatility of the Turkish lira got higher after inflation in September exceeded expectations. The CBRT's gross international reserves reached USD 159.4 billion on October 25, while the CBRT swap funding was terminated. Including the balance of swaps totaling USD 4.6 billion lent to banks that were put into use under the scope of TL sterilization in early August, total reserves amount to USD 164 billion.

**Financial conditions remain tight while the share of TL in deposit composition rises further.** The efficient sterilization of the TL liquidity in the market coupled with the supporting macroprudential measures led TL deposit rates to follow a flat course in the current reporting period. The share of TL in banks' deposit composition increased further and reached 55.8% in this period. Moreover, the share of FX-protected (KKM) accounts within total deposits decreased, and the increase in FX deposits in August reversed in the following months following the decisions taken regarding KKM accounts. Having started in the second quarter of 2024, the decline in TL commercial and personal loan rates continued. On the other hand, as the disinflation process started in June, real TL commercial and personal loan rates turned positive in terms of expected and actual inflation. Accordingly, financial conditions grew tighter. Due to FX growth constraints and the falling commercial loan rates, the tendency to use TL commercial loans strengthened in the recent period. However, TL commercial loans and FX commercial loans adjusted for the exchange rate grew by a rate similar to that implied by the constraints of 2% and 1.5%, respectively and moved in accordance with our expectations. On the retail loans side, consumer loan growth in real and standardized terms hovers around long term averages, while credit card growth remains strong. Maximum contractual interest rates for personal credit cards were differentiated according to term debt balances. Accordingly, a raise in the rates imposed on cards with high term debts is expected to limit borrowing behavior and contribute to the rebalancing in domestic demand.

**Annual and quarterly growth rates declined in the second quarter.** In this period, GDP increased by 2.5% on an annual basis but remained flat with a quarterly growth of 0.1%, indicating a weakening in economic activity. On the expenditures side, the annual contribution of private consumption to growth declined, whereas the positive contribution of net exports continued, thus enabling a better balance among demand components. On the production side, the services sector remained the main driver of annual growth.

**Indicators for the third quarter suggest that domestic demand continues to slow down, approaching disinflationary levels.**

In the third quarter, spending on goods excluding automobiles, which accounts for approximately half of household final consumption expenditures, increased on a quarterly basis, whereas the remaining part consisting of automobile sales and services expenditures declined. In this period, both the retail sales and the trade sales volume indices posted a quarterly rise. Notwithstanding a quarter-on-quarter fall, white goods sales maintained their course above the historical trend. Meanwhile, automobile

sales increased somewhat in October after a decline in the third quarter. As of August, the services production index edged down by 0.9% quarterly. Survey data for manufacturing industry firms indicate a quarterly decrease in domestic market orders in the third quarter. Information on consumption expenditures obtained from interviews with firms also points to a slowdown in domestic demand. Although card spending remained flat in July, it registered a quarterly growth due to monthly increases in August and September. However, October data suggest a flat monthly course in card spending. On the production side, industrial production fell on a quarterly basis as of August. When the typically highly volatile sectors are excluded, the decline in industrial production in the third quarter is assessed to be less pronounced than implied by the overall index.

**Seasonally adjusted employment continued to increase in the third quarter, diverging from other demand and production indicators.** However, given the already high level of the labor underutilization rate despite a quarterly decline of 0.4 points as of August, the labor market may not be as strong as implied by the main indicators. As for wage developments, the rise in real unit wages continued with a significant loss of momentum in the second quarter of the year. Nevertheless, the ongoing rebalancing in domestic demand and the expected decline in real unit wages over the rest of the year are expected to contribute to the disinflation process.

**The improvement in the current account balance gained momentum in the third quarter amid the significant decline in the foreign trade deficit and the ongoing strong course of the services balance.**

During this period, the foreign trade deficit narrowed on a quarterly basis as the decline in imports was greater than the decline in exports. Due to the modest recovery in external demand and the favorable course of the export climate index in the third quarter, the quarterly decline in seasonally and calendar-adjusted exports remained limited. This was also led by gold exports, with a carry-over of the second quarter's increase into the third quarter. On the imports side, seasonally and calendar-adjusted total imports decreased in the third quarter. Imports of consumption and intermediate goods made the largest contributions to this quarterly decline. While gold imports edged down in this period, the decline in seasonally and calendar-adjusted energy imports was more pronounced. In addition, the limited increase in the terms of trade and the rebalancing in foreign trade volumes supported the decline in the foreign trade deficit in the third quarter. All goods groups contributed to the decrease in import volumes, while the decline in the import volumes of consumption goods was more pronounced than that of other groups. The strong course of the services balance continued, with the contribution of both travel and transport revenues. The retrospective upward revision in the services balance also reduced the level of the cumulative current account deficit. On the financing side, the weight of portfolio investments decreased in the third quarter, while that of long-term items increased. In this period, reserve build-up continued, while the net errors and omissions item posted outflows. Provisional foreign trade data for October point to a limited monthly drop in exports and a rise in imports. After falling in the third quarter, imports of consumption goods increased in October in seasonally adjusted terms. However, this increase is more moderate when the jewelry item, which is classified under consumption goods, is excluded.

**The disinflation process continued, with consumer inflation falling to 48.58% in October 2024.** After the ongoing decline in global commodity prices in August, the rise in non-energy commodity prices in September spread across all main groups in October. Following the mild increase in the currency basket in August, exchange rate-driven effects on inflation remained temporary. The global supply chain pressure index hovered close to its historical average, indicating that there were no significant pressures stemming from global supply conditions. Against this background, pressures driven by producer prices on consumer inflation continued to weaken. In this period, demand conditions converged to levels supportive of disinflation. Price increases in administered items and D-PPI-based automatic tax revisions had an upward impact on consumer inflation in July and August. Inflation expectations remained on a declining trend yet exceeded the forecasts presented in the previous Inflation Report. High services inflation persisted in the third quarter, led by rents and education groups with strong time-dependent price-setting and backward-indexation behavior and transport services with high sensitivity to fuel prices. The high course was mainly driven by rents, while services inflation excluding rents displayed a gradual, albeit limited slowdown. Core goods inflation remained low in this period. In the food group, the rise in fresh fruit and vegetable prices remained below its historical trend in the third quarter of the year, but this favorable picture was disrupted in October due in part to the field-to-greenhouse transition. Thus, the impact of food prices on consumer inflation became more visible in October. The underlying trend of inflation continued to decelerate in

October, as in the third quarter. The improvement observed in services inflation as of October is expected to extend into the last quarter.

**Year-end inflation forecasts for 2024, 2025 and 2026 are revised as 44%, 21% and 12%, respectively.** In the third quarter, energy prices and the lump sum tax revisions as well as price developments in administered items had a notable impact on consumer inflation. The October inflation realizations remained above the upper bound of the forecast range in the previous Inflation Report, resulting in a forecast deviation of 0.2 percentage points. In the upcoming period, the improvement in the underlying trend of inflation and expectations may remain limited when compared to the projections of the previous Report. Given the lagged effects of monetary tightening, the slowdown in demand is expected to continue and provide support for disinflationary path. The upward revision in the year-end inflation forecast for 2024 was primarily driven by the food price assumption as well as the revision in the underlying trend of inflation and the initial conditions. Regarding the revision to the year-end inflation forecast for 2025, the change in administered price assumptions due to the impact of the regulations on electricity pricing dynamics had a significant impact, in addition to the aforementioned effects.

**Medium-term forecasts are based on an outlook in which the tight monetary policy stance would be maintained until the inflation outlook displays a significant and sustained decline, and the coordination among economic policies would be strengthened.** The monetary transmission mechanism will be supported by additional macroprudential measures, and sterilization tools will continue to be used effectively. The supportive course of demand conditions to disinflation on the back of the maintenance of the tight monetary policy stance and the tightening of financial conditions with the lagged effects of the taken policy steps is anticipated to become more pronounced in the upcoming period. Forecasts rely on a monetary policy that will remain tight until a significant and sustained decline in the underlying trend of monthly inflation is observed, and inflation expectations converge to the projected forecast range. With the contribution of the forward guidance emphasizing the decisive tight stance in monetary policy, the convergence of inflation expectations to the Inflation Report forecasts in the short term and to the inflation target in the medium term is critical for ensuring permanent price stability. The decisive monetary policy stance is expected to support the downtrend in underlying inflation amid the moderation in domestic demand, the real appreciation in the Turkish lira and the improvement in inflation expectations.

## 1.1 Monetary Policy Decisions

**The CBRT kept the policy rate constant at 50% in the August-October period.** In July, the underlying trend of monthly inflation edged up month-on-month; however, there was no significant change in August. The underlying trend of inflation increased slightly in September, while a slowdown was recorded in October. Indicators for the third quarter suggest that domestic demand continues to slow down with a diminishing inflationary impact.

**The CBRT has kept the policy rate constant and remains highly attentive to upside inflation risks.** The CBRT maintained its view that the consistency of inflation expectations and pricing behavior with the projections continue to pose risks to disinflation process. At the October meeting of the Monetary Policy Committee, the CBRT stated that the uncertainty regarding the pace of improvement in inflation increased in light of incoming data. The CBRT stressed that the tight monetary stance will be maintained until a significant and sustained decline in the underlying trend of monthly inflation is observed, and inflation expectations converge to the projected forecast range. The CBRT stated that monetary policy tools will be used effectively in case a significant and persistent deterioration in inflation is foreseen. The decisiveness regarding the tight monetary stance will bring down the underlying trend of monthly inflation through moderation in domestic demand, real appreciation in the Turkish lira and improvement in inflation expectations. Consequently, the disinflation process will gain strength.

**The CBRT has sustained the policies that support Turkish lira deposits to strengthen the monetary transmission mechanism.** In its announcement of August 29, 2024, the CBRT increased the monthly growth target from 0.6 points to 0.8 points for banks with real person TL deposit shares between 45% and 50%. Additionally, the monthly growth target was abolished for banks with real person TL deposit shares exceeding 60%, and a condition of keeping this share above 60% was introduced. In line with the objective of gradual phasing out of KKM deposits, legal person KKM accounts started to be included in the calculation of the total target for KKM accounts' transition to TL and renewals. To support TL deposit rates by reducing

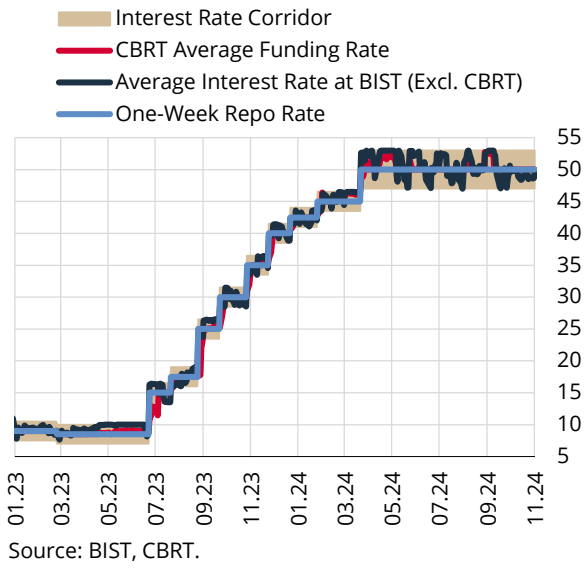


the cost of reserve requirements for banks, the upper limit of the remuneration of required reserves for TL deposits, based on the rate of transition to TL was increased from 80% to 84% of the policy rate. Moreover, the ratio for TL required reserves to be maintained in blocked accounts was raised by 5 points to ease the impact of short-term volatilities in market liquidity on TL deposit rates. On September 21, 2024, the ratio for TL required reserves maintained for FX deposits was reduced from 8% to 5%, while the ratio for short-term TL deposits was raised from 12% to 15% and that for long-term TL deposits from 8% to 10%, which will also allow for withdrawal of some excess TL liquidity from the market. At the same time, for the remuneration of required reserves for TL deposits, the transition-to-TL target, which was causing volatility in deposit pricing amid the diminishing KKM balance, was abolished. As such, the cost of reserve requirements to banks was reduced as well. Meanwhile, the maximum commission rate of 5% applied based on the level of transition-to-TL rate was raised to 8%, to ensure that banks continue to meet the TL-transition target of 15%.

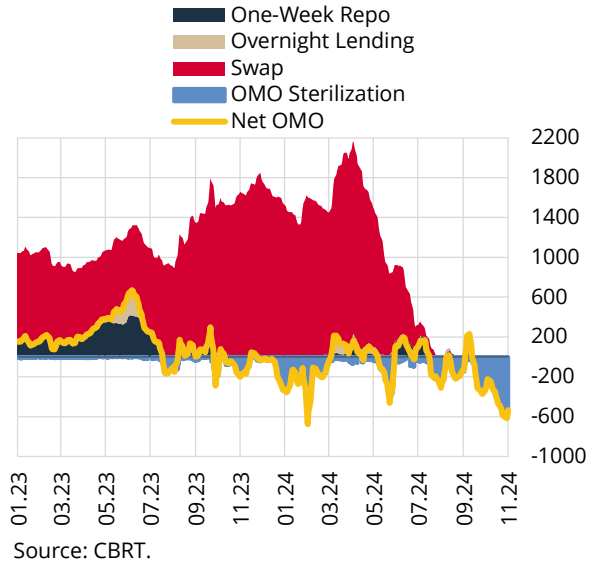
**Maximum contractual interest rates for credit cards were differentiated based on the amount of term debt.** With an amendment introduced on September 27, 2024, in credit card transactions excluding cash withdrawals or cash payments, the maximum contractual interest rates, formerly applied by adding 114 basis points to the reference rate, started to be determined, effective November 1, 2024, by adding: i) 39 basis points to the reference rate for personal credit cards with term debt less than TRY 25,000, ii) 114 basis points for personal credit cards with term debt between TRY 25,000 and 150,000 and iii) 164 basis points for personal credit cards with term debt exceeding TRY 150,000 and for corporate credit cards regardless of the term debt. Thus, the CBRT aimed to reduce credit card indebtedness and contribute to the rebalancing in domestic demand. Additionally, the maximum interest rate to be charged in restructuring of personal credit card debt was limited to the reference rate.

**When there was excess liquidity in the system, it was sterilized mainly through overnight deposit buying auctions and overnight rates hovered close to the CBRT policy rate.** In the current reporting period, overnight interest rates moved within the CBRT's interest rate corridor (Chart 1.1.1). In the reporting period, a decline was observed in the funding need of the system owing to the improvement in the CBRT's FX position and the public spending of the Ministry of Treasury and Finance. Although net OMO funding shifted to positive territory for a short while during the volatility episode in financial markets at the beginning of August, a liquidity surplus emerged in the market due to the improvement in the CBRT's FX position and increased public spending. With the tax collections at the end of August, the excess liquidity in the system was significantly reduced, and the continued increase in Treasury accounts in the following days led to a liquidity deficit in the system again. Between August 29-September 9, the CBRT changed its funding composition in response to the increased liquidity need and started to provide funding mainly via overnight lending. In this period, the CBRT's weighted average funding rate and overnight repo rates converged to the CBRT lending rate of 53%. In the rest of September, liquidity conditions were mainly affected by the CBRT's FX transactions, and the funding need of the system decreased. In September, in order to reduce short-term volatility in the liquidity and support monetary transmission, the CBRT raised the ratio for maintaining TL required reserves in blocked accounts by 5 points and changed the ratio for TL-denominated required reserves leading to a moderate decline in excess liquidity in the market. The amount of excess liquidity sterilized through the swap channel, which was TRY 6 billion as of August 2, 2024, increased and reached TRY 237 billion as of November 1, 2024. In this period, net OMO funding decreased from TRY -89 billion to TRY -428 billion (Chart 1.1.2). As of November, sell-side gold swap auctions started to be held, and the sterilization toolkit was diversified. Although the CBRT sterilizes excess liquidity in the market mainly through overnight deposit buying auctions, it also holds one-week FX swap auctions against the Turkish lira and deposit buying auctions. As of November 1, a total of TRY 670 billion has been sterilized, including TRY 422 billion through deposit buying auctions, TRY 237 billion through sell-side swap auctions and TRY 11 billion through the CBRT Interbank Money Market and Borsa Istanbul Committed Transactions Market transactions.

**Chart 1.1.1: CBRT Interest Rates and Short-term Interest Rates (%)**



**Chart 1.1.2: CBRT OMO and Swap Transactions (One-Week Moving Average, TRY Billion)**

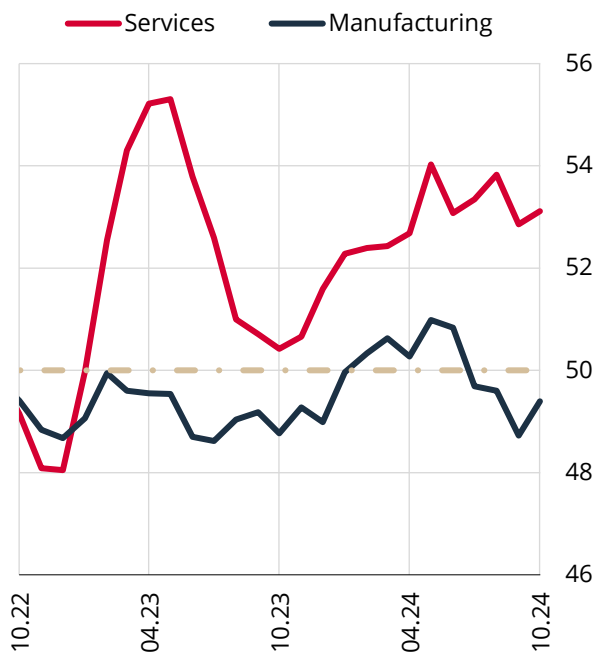


## 2. Economic Outlook

### 2.1 Global Economy

**Leading indicators for global growth suggest that the weak course continues in the manufacturing industry, with the services sector remaining the main driver of economic growth.** The global PMI for the manufacturing industry fell below the threshold value and remained weak. The services PMI recorded a decline over the previous reporting period, yet the index remained above the threshold value (Chart 2.1.1). The growth forecasts for Türkiye's trading partners vary according to their sensitivity to geopolitical developments as well as expectations regarding inflation and monetary policy. Compared to the previous reporting period, the change in growth outlook for 2024 for advanced economies was more favorable, while that for countries in Eastern Europe and the Middle East was negative (Table 2.1.1). The US exhibits a stronger growth outlook than other advanced economies. On the other hand, due to the relatively bad performance in the second quarter as well as the lower than expected broad-based monetary and fiscal expansion, China's growth forecast for 2024 was revised downwards. Moreover, China's annual growth receded to the lowest level of the last eighteen months in the third quarter. Against this background, the global growth index weighted by the export shares of Türkiye's trading partners is estimated to increase by 2.0% in 2024, remaining unchanged since the previous reporting period. On the other hand, the evident differences among countries were noteworthy, although the global growth expectation of 2.4% was preserved for 2025. These growth forecasts were revised downwards for the euro area and upwards for the US, UK and United Arab Emirates but remained unchanged for China. Joint evaluation of realizations, forecasts and leading indicators reveals that downside risks to the global growth outlook have accumulated overall since the release of the previous Inflation Report.

**Chart 2.1.1: Global PMI Indices (Level)**



Source: S&P Global.

**Table 2.1.1: Growth Forecasts for Türkiye's Main Trading Partners\* (%)**

	2023	2024 Forecast		2025 Forecast	
		IR 2024-III	IR 2024-IV	IR 2024-III	IR 2024-IV
Euro Area	0.4	0.7	0.7	1.4	1.2
Germany	-0.3	0.2	0.0	1.1	0.7
USA	2.9	2.3	2.6	1.7	1.8
UK	0.3	0.8	1.0	1.1	1.3
Italy	0.7	0.9	0.8	1.0	0.9
Iraq	-0.6	1.1	0.7	2.1	2.0
Spain	2.5	2.3	2.7	1.9	2.0
France	1.1	0.9	1.1	1.2	1.0
Netherlands	0.1	0.4	0.6	1.4	1.4
Israel	2.0	1.5	1.0	3.9	3.5
Russia	3.6	3.2	3.5	1.7	1.6
UAE	2.9	3.4	4.0	2.1	5.7
Romania	2.1	2.8	2.0	3.5	3.1
Belgium	1.4	1.2	1.2	1.5	1.3
Poland	0.2	2.9	3.1	3.8	3.7
Egypt	3.8	3.4	2.9	4.2	4.1
Bulgaria	1.8	2.2	2.2	2.9	2.9
China	5.2	4.9	4.8	4.4	4.4

Source: Consensus Economics, S&P Global.

\* Countries are ranked according to the size of their share in Türkiye's exports in 2021.

**The global growth outlook and composition, geopolitical risks, financial conditions, and supply-side factors continue to play a determining role in commodity prices.** Having trended downwards in summer, non-energy commodity prices showed widespread increases compared to the previous reporting period. Meanwhile, the volatility in oil prices was noteworthy. The persisting political tensions in Russia-Ukraine and the Middle East as well as the decisions of the OPEC+ member countries to cut output cause sustained upside pressures in oil prices, while the languid course of demand leads downside pressures to persist.



Natural gas prices also show fluctuations amid the geopolitical turmoil. However, due to the euro area growth outlook, mild weather conditions and the increase in the imports of liquefied natural gas, natural gas stock levels remained high and had a downward effect on prices that are indicative for Europe. Thus, natural gas prices fell by 2.8% over the previous reporting period. Meanwhile, amid China's incentives launched to allay deflation concerns and achieve its growth target, industrial commodity prices have surged since the release of the previous Inflation Report. Agricultural commodity prices also rose noticeably compared to the previous reporting period due to climatic conditions (Table 2.1.2).

**Table 2.1.2: Commodity Prices (%)**

	July 2024	August 2024	September 2024	October 2024	Annual	Compared to the Previous Reporting Period*
<b>Headline Commodity Index</b>	-1.4	-4.8	-2.6	3.5	-7.5	-0.9
<b>Energy</b>	0.4	-6.6	-6.9	3.8	-16.5	-7.0
<b>Agricultural Commodity</b>	-7.0	-3.1	5.1	1.2	-7.6	4.5
<b>Industrial Metal</b>	-3.8	-2.5	2.9	4.3	16.3	10.5
<b>Precious Metal</b>	3.4	2.5	3.7	4.5	40.7	12.1
<b>Excl. Energy</b>	-3.7	-2.3	3.2	3.0	6.5	7.6
<b>Brent Oil</b>	3.3	-5.2	-8.1	1.8	-16.9	-8.0
<b>Natural Gas (USA)</b>	-21.2	-6.0	14.9	7.6	-18.2	25.2
<b>Natural Gas (Europe)</b>	-5.6	18.0	-5.7	11.4	-14.1	-2.8
<b>Coal</b>	1.1	7.8	-3.9	3.8	4.2	-1.1
<b>Aluminum</b>	-5.8	0.1	4.5	5.6	18.4	15.8
<b>Copper</b>	-3.0	-5.9	3.1	4.5	22.7	10.4
<b>Iron</b>	1.2	-8.3	-6.8	14.1	-10.6	2.2
<b>Wheat</b>	-9.0	-3.1	7.8	2.9	2.2	5.7
<b>Soy</b>	-4.6	-12.0	2.8	-1.0	-21.9	-2.7
<b>Rice</b>	-11.3	-5.8	2.1	-1.5	-5.6	-1.1
<b>Corn</b>	-9.4	-5.5	6.1	4.2	-14.8	9.3
<b>Cotton</b>	-4.4	-1.0	4.1	1.2	-15.5	6.7
<b>Sugar</b>	1.0	-4.8	12.0	8.4	-16.9	18.8

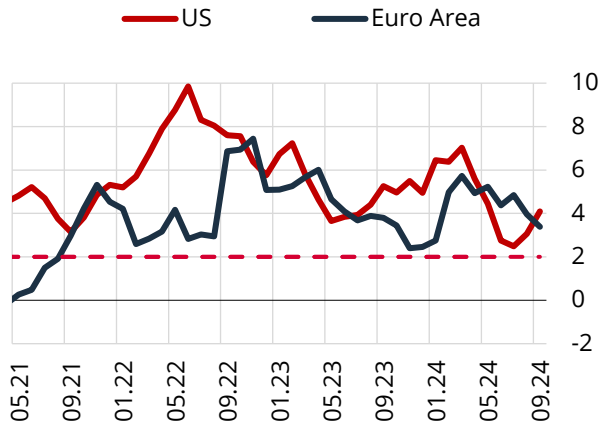
Source: Bloomberg.

\* Denotes percentage change in prices between November 1, 2024 and August 8, 2024.

***As global disinflation continues, the stickiness in service inflation declines, yet it is still in place.***

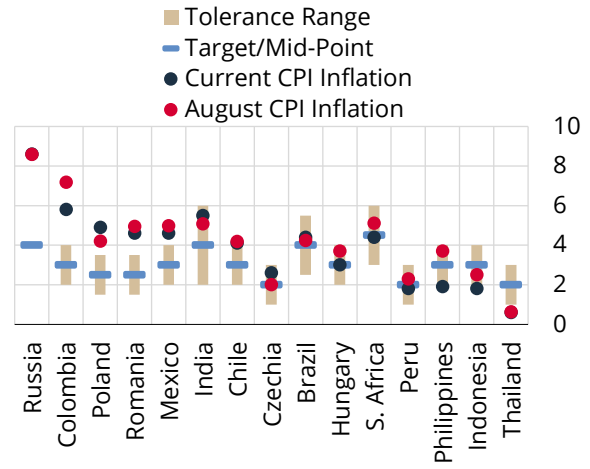
Geopolitical developments and fluctuations in commodity prices continue to pose a risk to the disinflation process, while the mild course in supply conditions and the tight monetary policy stance further support the decline in inflation at a global scale. It is noteworthy that wage pressures weakened as the supply and demand balance in labor markets continued to normalize and price increases in the services sector were more moderate compared to the previous reporting period (Zoom-in 2.1). The data for the last two months showed that the underlying trend of US services inflation increased slightly and moved away from the target-consistent levels that it had been approaching. However, being attributed to the one-off increases in health and transportation services in September, this did not cause a significant deterioration in the overall inflation outlook and inflation expectations in the US. In the euro area, price increases in services tumbled further (Chart 2.1.2). Meanwhile, although inflation remained outside the tolerance range in some Eastern European and Latin American countries, and annual inflation edged up in some countries, in general, inflation rates in emerging economies converged more to the targets compared to the previous reporting period (Chart 2.1.3).

**Chart 2.1.2: Services Inflation in Advanced Economies** (Annualized Three-Month Moving Average, Seasonally Adjusted, %)



Source: ECB, St Louis Fed.

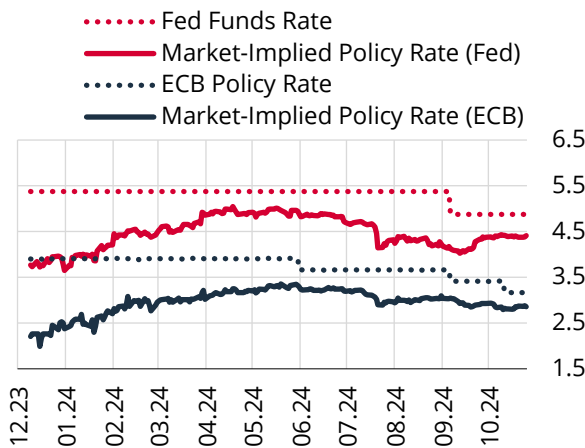
**Chart 2.1.3: Consumer Inflation in Emerging Economies** (Target, Tolerance Range and Realization, %)



Source: Bloomberg.

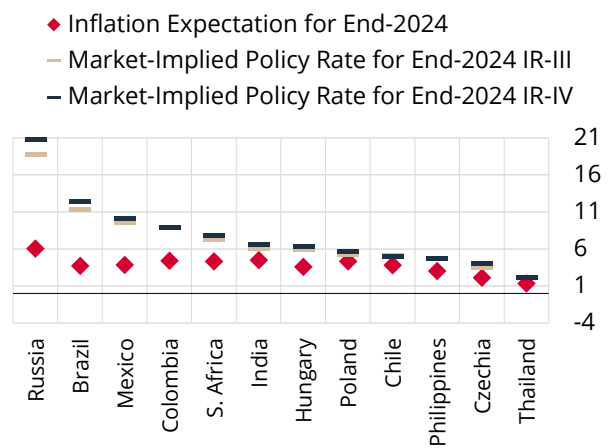
**As inflation declines further, major central banks opt for rate cut cycles and market pricings suggest that rate cuts will continue.** The Fed initiated the policy rate cut process in its September meeting with 50 basis points. Meanwhile, median expectations of the Fed members were revised in a way to indicate further rate cuts for 2024 and 2025 compared to July (Box 2.1). The communication signaled that, depending on the data, rate cuts may continue in the upcoming meetings of the year. The recent strong course of the labor market reinforced expectations that the stance for the rate cuts would be more cautious. The European Central Bank (ECB), on the other hand, continued to cut rates by 25 basis points at its October meeting and signaled that it may opt for further reductions until the end of the year depending on inflation and economic activity dynamics. As a result, as of November 6, the amount of additional rate cuts priced until the end of the year is 46 basis points for the Fed and 30 basis points for the ECB (Chart 2.1.4). In the current reporting period, the Bank of Canada and Danmarks Nationalbank cut their policy rates by 25 basis points each and the Bank of Sweden by 50 basis points, while the central banks of South Korea (25 basis points) and New Zealand (75 basis points in two meetings) took first steps towards easing. On the other hand, the Bank of Japan, which raised its policy rate by 15 basis points in July, communicated that it would implement additional rate hikes over a wider period of time. Meanwhile, emerging economies maintained their cautious stance in their interest rate cuts due to the slowing improvement in the inflation outlook. In the current reporting period, the Bank Indonesia, the South African Reserve Bank, the National Bank of Romania and the Bank of Thailand initiated rate cuts by 25 basis points each and the Central Bank of Philippines by 50 basis points in two meetings, while the Central Reserve Bank of Peru (50 basis points), Banco de Mexico (50 basis points), Central Bank of Colombia (100 basis points), the Czech National Bank (25 basis points), the Central Bank of Chile (50 basis points) and Magyar Nemzeti Bank (25 basis points) continued to cut policy rates. Having revised its inflation forecasts upwards, the Banco Central do Brasil opted for a raise in policy rates by 25 basis points, while the Bank of Russia continued to increase rates by 300 basis points. China, on the other hand, announced accommodative monetary and fiscal decisions to alleviate concerns over deflation and achieve its 5% growth target. In the coming period, rate cuts are likely to continue in advanced and emerging economies in line with the fall in inflation. However, considering the levels of inflation, rigidities and the recent elevation in the Middle East-related geopolitical risks, it is expected that the rate cuts will be delivered in a way that maintains monetary tightness and sustains the disinflation process. Compared to the previous reporting period, many emerging economies are pricing in slightly higher interest rates for end-2024. Moreover, policy rates implied by futures and inflation expectations suggest that interest rates in emerging economies will continue to be set above inflation rates (Chart 2.1.5).

**Chart 2.1.4: Market-Implied Policy Rate for End-2024 (Effective, %)**



Source: Bloomberg.

**Chart 2.1.5: Futures-Implied Policy Rate and Inflation Expectations\* (% Points)**

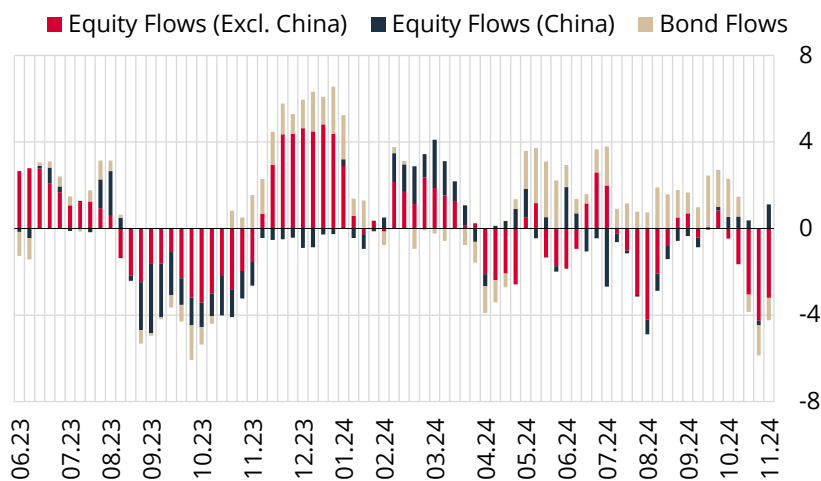


Source: Bloomberg.

\* Inflation expectations are from the Bloomberg Survey. Policy rate pricings are calculated in view of six-month-forward contracts for IR 2024-III and three-month-forward contracts for IR 2024-IV.

**Fluctuations in the global risk appetite and uncertainties regarding the policy decisions of major central banks have led to a volatile course in portfolio inflows to emerging economies.** Volatilities in pricing of rate cuts by major central banks and global uncertainties during the previous reporting period had a negative effect on the risk perceptions towards emerging economies. This caused fluctuations in portfolio flows to continue into the current reporting period. Moreover, the divergence in portfolio flows towards equity and bond-bill markets seen in previous periods continued in the current reporting period. Between August 8 and November 1, outflows from equity markets excluding China amounted to USD 6.7 billion, while outflows from debt securities markets remained limited to USD 250 million (Chart 2.1.6). In the upcoming period, policy decisions of major central banks, developments in the Chinese economy and geopolitical developments in the Middle East are expected to shape portfolio flows to emerging economies.

**Chart 2.1.6: Weekly Portfolio Flows to Emerging Economies (Four-Week Moving Average, USD Billion)**



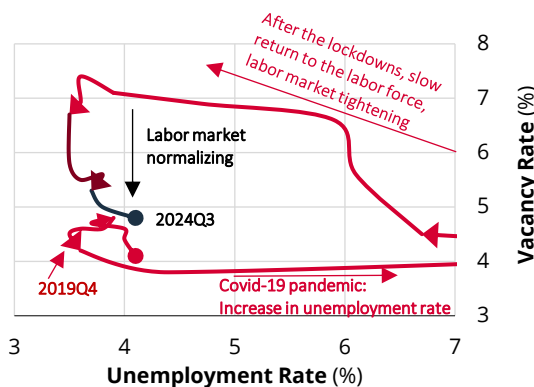
Source: IIF.

## Zoom-in 2.1

### Normalization in the US and Euro Area Labor Markets

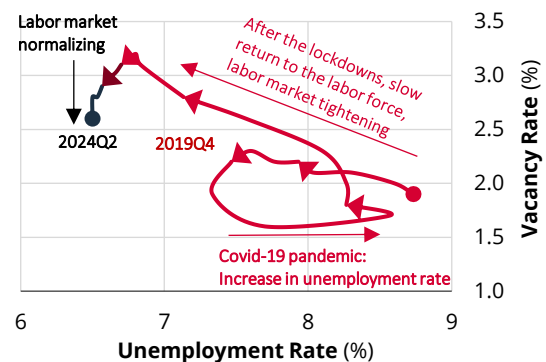
**Unemployment rates increased in the US and the euro area after the lockdowns during the pandemic, but labor markets tightened due to the decline in the number of job seekers in the subsequent recovery period.** While production resumed, the return to the labor force proved rather slow, both due to the need for childcare amid longer closure of schools and the fear of getting infected. In advanced economies, the decline in the number of workers migrating from abroad, the increase in early retirements due to the pandemic and increased savings during the shutdown period also had a reducing impact on labor force participation rates. In the meantime, while the rate of job vacancies increased rapidly, the number of job seekers did not rebound equivalently and a notable demand surplus emerged in labor markets. The process was similar in the US and the euro area, with labor market tightness peaking in late 2022 (Charts 1 and 2). The excess demand in labor markets put upside pressure on wages and, together with the buoyant demand in the services sector, was a significant factor that slowed down the disinflation process.

**Chart 1: US Beveridge Curve\***



Source: U.S. Bureau of Labor Statistics.

**Chart 2: Euro Area Beveridge Curve\***



Source: Eurostat.

\* The Beveridge Curve with the vacancy rate on the vertical axis and the unemployment rate on the horizontal axis shows the degree of tightness in the labor market. As the vacancy rate increases and the unemployment rate decreases or as the trend moves up and to the left in the chart, the supply-demand balance shifts in favor of demand and the labor market tightens. As the trend moves down and to the right, the balance shifts in favor of supply and the upward pressure on wages weakens.

#### **Recently, supply and demand in the labor market have appeared to be more balanced.**

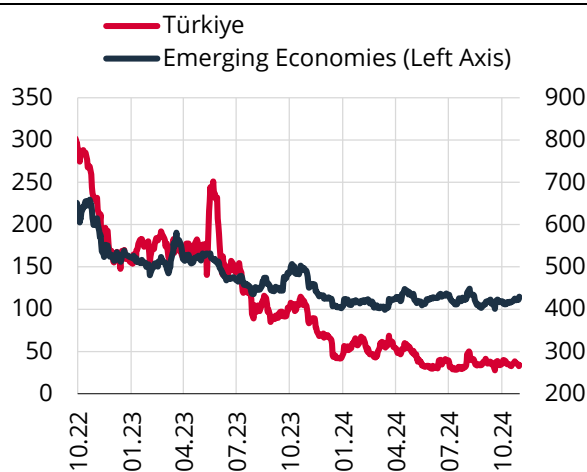
Supply constraints and supply setbacks in the goods market following the pandemic have waned mostly after China's easing of pandemic measures, but the contraction in labor supply has been more persistent. On the other hand, along with the lagged effects of the monetary policy, a normalization and cooling trend in labor markets has been noted recently. This trend is much more evident in the US, where the job openings-unemployment balance has approached pre-pandemic levels (Chart 1). Meanwhile, in the euro area, despite the normalization trend, the job vacancy rate is still higher and the unemployment rate is lower than the pre-pandemic period (Chart 2). However, there is also empirical evidence that the natural rate of unemployment for the euro area has also settled on a downtrend and that current unemployment levels are not far below the long-run equilibrium.<sup>1</sup> In sum, the labor market normalization continues in advanced economies and the stickiness in services prices continues, albeit at a weaker pace.

<sup>1</sup> Růžičková, P. (2024). Unemployment in the Euro Area: Why Is It So Low and When Will It Start to Rise? Czech National Bank Blog.

## 2.2 Financial Conditions

**Global risk appetite, which deteriorated sharply in early August due to geopolitical developments, recession concerns and the Bank of Japan's surprise rate hike, improved thereafter, but the recovery remained limited amid geopolitical risks and uncertainties over the US elections.** The Fed's decision to cut rates, joining other major central banks that have started to lower interest rates, has boosted the recovery in global risk appetite. However, rising tensions in the Middle East and uncertainty over the US elections continued to be the main risk factors for global financial conditions. Against this backdrop, emerging market risk premiums fell to their pre-August levels, and in parallel, Türkiye's CDS premium dropped to 272 basis points as of October 25 (Chart 2.2.1). The volatility in risk appetite during the current reporting period resulted in outflows from emerging market assets, while portfolio inflows to Türkiye totaled USD 1.88 billion, comprising net inflows of USD 3.23 billion to the government domestic debt securities (GDDS) market and net outflows of USD 1.35 billion from the equity market (Chart 2.2.2).

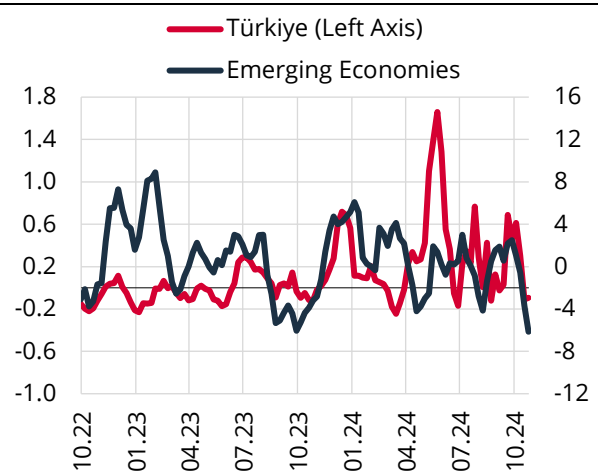
**Chart 2.2.1: CDS Premium in Türkiye and Emerging Economies\*** (Five-Year, Basis Points)



Source: Bloomberg.

\* Emerging economies include Brazil, Chile, Colombia, Indonesia, Malaysia, Mexico, South Africa and the Philippines.

**Chart 2.2.2: Portfolio Flows to Türkiye and Emerging Economies\*** (Four-Week Average, USD Billion)

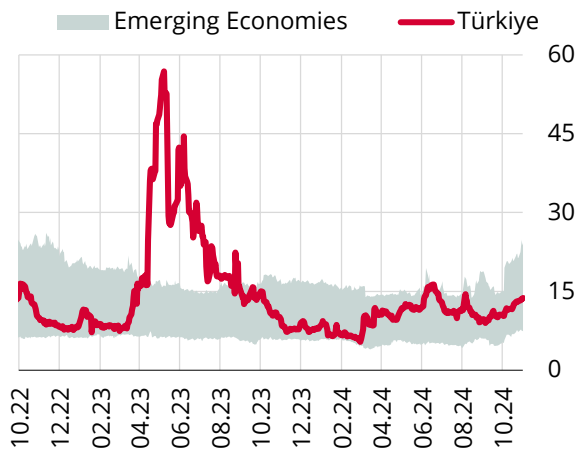


Source: CBRT, IIF.

\* Data for Türkiye includes portfolio flows to equity and GDDS markets. Repo is excluded from the GDDS data.

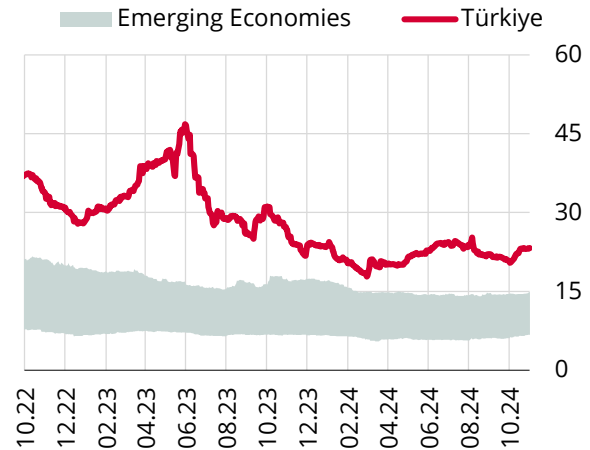
**The implied volatility of the Turkish lira has recently increased.** Exchange rate volatilities, which trended sharply upwards due to the short-lived turbulence in global markets in early August, declined in the following period in line with the improvement in global risk sentiment. Meanwhile, the higher-than-expected inflation in September exerted downward pressure on TL-denominated asset prices and increased the volatility of the Turkish lira in both the short and long term. Following the recent increase, the one-month implied exchange rate volatility of the Turkish lira has risen to 13.7%, while the 12-month volatility stood at 23.2% (Charts 2.2.3 and 2.2.4). The difference between short- and long-term volatilities indicates that policies continue to have an impact on exchange rate stability, yet longer-term risks persist.

**Chart 2.2.3: Implied Volatility of FX Options\***  
(Against USD, One-Month Maturity, %)



Source: Bloomberg.  
\* Emerging economies include Brazil, Chile, Colombia, Mexico, Poland, the Philippines, Malaysia, South Africa, Indonesia, Romania and Hungary.

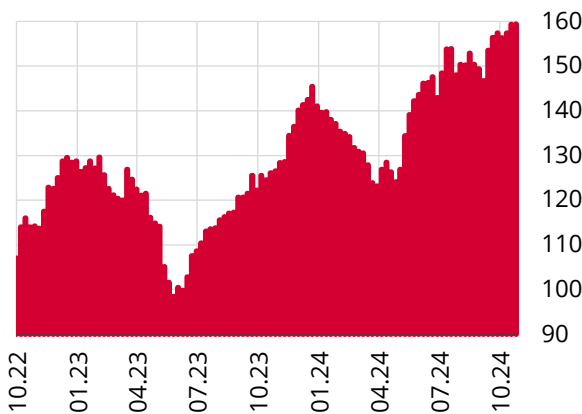
**Chart 2.2.4: Implied Volatility of FX Options\***  
(Against USD, One-Month Maturity, %)



Source: Bloomberg.  
\* Emerging economies include Brazil, Chile, Colombia, Mexico, Poland, the Philippines, Malaysia, South Africa, Indonesia, Romania and Hungary.

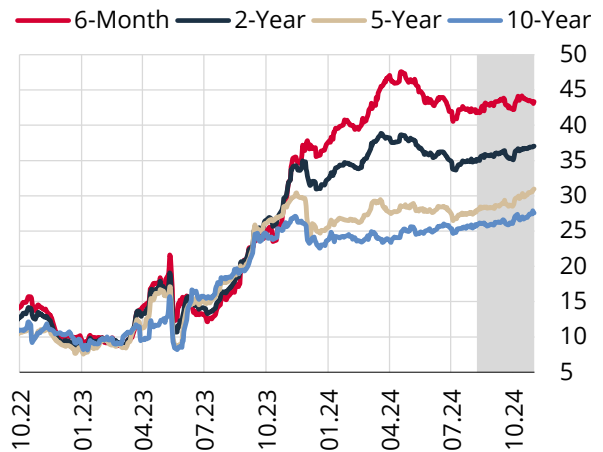
**The strong upward trend in CBRT reserves continues.** Maintaining their upward trend, the CBRT’s gross international reserves reached USD 159.4 billion as of October 25 (Chart 2.2.5). The increase in reserves is a reflection of the ongoing interest of residents and non-residents in TL-denominated assets. Moreover, while Turkish lira funding via swap operations was zeroed out as of the previous reporting period, the CBRT started Turkish lira currency swap transactions in order to diversify the sterilization instruments. As of October 25, when these transactions, which amounted to USD 4.57 billion, are included, the total reserves reached USD 164 billion.

**Chart 2.2.5: CBRT’s Gross International Reserves** (Weekly, USD Billion)



Source: CBRT.

**Chart 2.2.6: GDSS Yields (%)**



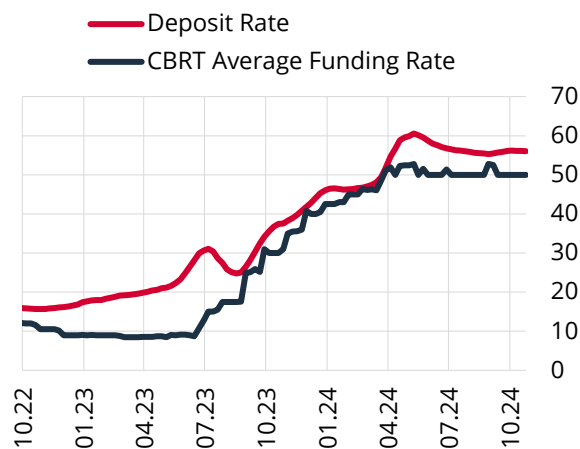
Source: Bloomberg.

**GDSS yields have posted an increase.** The September inflation realization led to an increase in GDSS yields, which was more prominent in short maturities (Chart 2.2.6). Despite the sustained interest of foreign investors in the GDSS market, supply-side factors are also influencing the long-term GDSS yields. As the disinflation process continues, and there is greater evidence of budget discipline, interest in the GDSS market is expected to grow further, and bond yields are expected to decline.



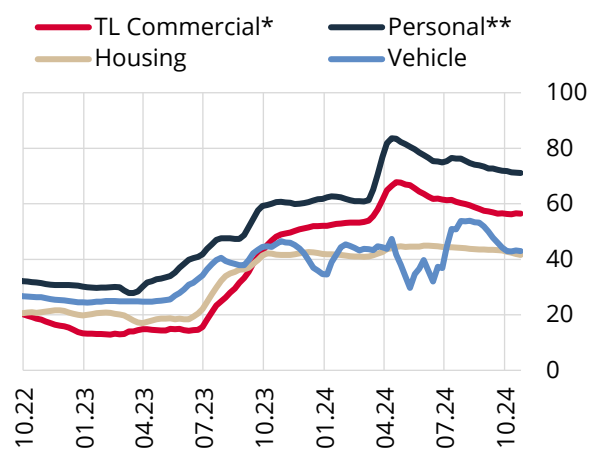
**Tightness in financial conditions is maintained.** During the current reporting period, the decline in inflation expectations for end-2024 has been slower than projected, while exchange rate expectations have shown a notable improvement. The decline in deposit rates observed during the second quarter of 2024 has been limited by the maintenance of the tight monetary policy stance, the effective sterilization of excess Turkish lira liquidity in the market through various instruments and the implementation of macroprudential measures to support Turkish lira deposits. In the current reporting period, Turkish lira deposit rates remained flat and stood at 55.8% as of October 25 (Chart 2.2.7). In order to support Turkish lira deposits, the CBRT took the following steps on August 29, 2024: The ratio for maintaining Turkish lira required reserves in blocked accounts has been increased by 5 percentage points, the monthly growth target has been increased for banks with real person Turkish lira deposit shares between 45% and 50%, the monthly growth target has been abolished for banks with real person Turkish lira deposit shares exceeding 60%, the condition to keep this share above 60% was introduced, and the upper limit for the remuneration of required reserves, which should be maintained for Turkish lira deposits, based on the rate of transition to Turkish lira has been increased from 80% to 84% of the policy rate. In addition, on September 21, 2024, reserve requirement ratios for Turkish lira deposits were raised in order to absorb excess Turkish lira liquidity in the market, and the transition-to-TL ratio condition for the remuneration of required reserves that should be maintained for Turkish lira deposits has been abolished in order to reduce the cost of required reserves to banks. Thus, the remuneration rate for required reserves that should be maintained for Turkish lira, which previously varied between 10% and 42% depending on the transition-to-TL ratio, has been raised to 42% for all banks. Furthermore, the maximum commission rate of 5% applied based on the level of transition-to-TL ratio has been raised to 8% to ensure that banks continue to meet their transition-to-TL ratio targets. Despite the flat course of Turkish lira deposit rates, Turkish lira commercial loan and personal loan rates have continued to decline since the second quarter of 2024. However, with the onset of the disinflation process in June 2024, real Turkish lira commercial loan and personal loan rates have moved into positive territory according to both expected and realized inflation, and the tightness in financial conditions became more evident. The decline in loan rates is attributed to banks' motivation to stimulate loan demand, which was weak and below growth limits, and their desire to support their profitability by extending loans at high interest rates before the start of policy rate cuts. As of October 25, Turkish lira commercial loan and personal loan rates dropped to 56.7% and 70.4%, respectively. Housing loan rates, which were relatively flat due to their long-term maturities, and vehicle loan rates, which fluctuate depending on the sales campaigns, were 41.3% and 41.7%, respectively, as of October 25 (Chart 2.2.8). With the press release of the Banking Regulation and Supervision Agency (BRSA) on September 20, 2024, the previously more prudently set risk weights for retail loans have been reduced to Basel standards, which may have a downward impact on retail loan rates in the coming period by reducing the regulatory burden on banks.

**Chart 2.2.7: Turkish Lira Funding Rates\***  
(Four-Week Moving Average, %)



Source: CBRT.  
\* Deposit rate is compound interest rate, while CBRT average funding rate is simple interest rate.

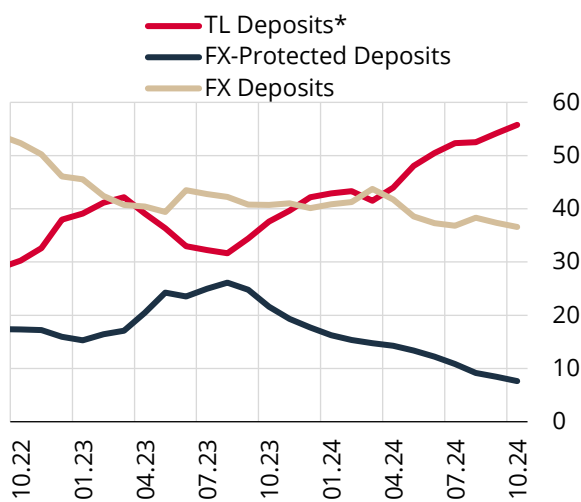
**Chart 2.2.8: Loan Rates** (Flow, Four-Week Moving Average, %)



Source: CBRT.  
\* Excluding overdraft accounts and credit cards.  
\*\* Excluding overdraft accounts.

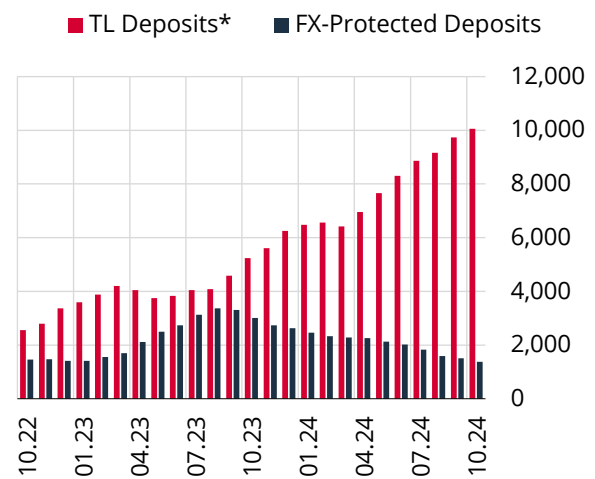
**The share of Turkish lira in banks' deposit composition has continued to increase.** The gains in the disinflation process and the macroprudential regulations supporting Turkish lira deposits led to a significant increase in the share of Turkish lira deposits, thereby exceeding the 50% target set for 2024. The Turkish lira share in banks' deposit composition increased by 3.4 percentage points to 55.8% in the current reporting period. The share of KKM in total deposits continued to decline as well, falling to 7.6% (Charts 2.2.9 and 2.2.10). In addition to the tight monetary policy, the policies aimed at increasing the share of Turkish lira deposits and encouraging transition from KKM accounts to Turkish lira deposits have also contributed to the increase in the share of Turkish lira deposits and the decline in the share of KKM accounts in the deposit composition. Despite a slight shift towards FX deposits in August due to volatility in global markets, this trajectory reversed in the following months. During this period, a number of decisions were taken concerning the KKM accounts. Following the CBRT's press release of August 29, 2024, legal person KKM accounts have been included again in the calculation of the total target for KKM accounts' transition to Turkish lira and renewals. Additionally, on September 2, 2024, the opening date for FX deposit accounts and precious metal accounts of real persons at banks was extended from March 31, 2024 to August 31, 2024 in order for real and legal persons to open KKM accounts. As a result of these decisions, the share of FX deposits started to decline again after August.

**Chart 2.2.9: Deposit Composition (% Share)**



Source: CBRT.  
\* TL deposits exclude KKM and FX-protected deposit accounts converted from FX (DDM).

**Chart 2.2.10: Turkish Lira Deposit Composition (TRY Billion)**

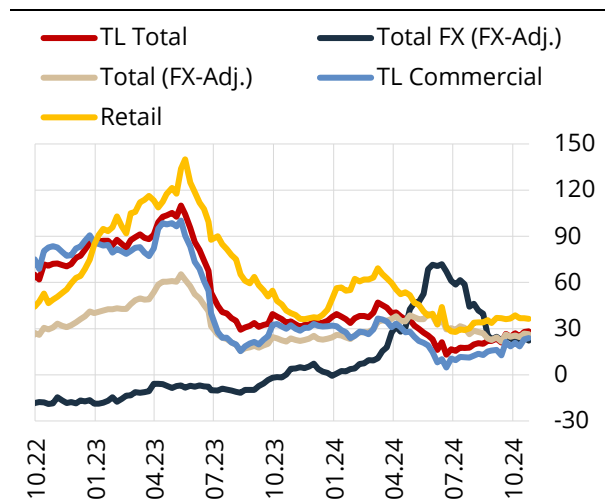


Source: CBRT.  
\* Data for Turkish lira deposits excludes KKM and DDM.

**Tight financial conditions and macroprudential policies remain determinants of loan growth.** The 13-week annualized growth rate of exchange rate-adjusted FX loans declined significantly to 22.2% as of October 25, after the 2% growth limit for FX loans introduced in May 2024 was reduced to 1.5% in July. Due to the growth limits for FX loans and declining Turkish lira commercial loan rates, firms' tendency to use Turkish lira commercial loans strengthened in the current reporting period, and the 13-week annualized growth rate of Turkish lira commercial loans rose to 23.9%. However, due to tight financial conditions and loan growth limits, the exchange rate-adjusted 13-week annualized growth rate of total commercial loans decreased to 23.5% in the current reporting period (Chart 2.2.11). While there are loans that are exempted from loan growth limits, total Turkish lira commercial loans, including exempted loans, and exchange rate-adjusted total FX commercial loans have been growing at a pace that is close to the path implied by the 2% and the 1.5% limits, respectively, thus contributing to the rebalancing in domestic demand. In order to support exporters' access to finance, the daily limit of TRY 3 billion for rediscount credits was raised to TRY 4 billion in October. Moreover, as of January 13, 2025, the exporter scores of firms calculated by considering variables such as the diversity of exported products and export destinations, the technological level of exported products and the scale of firms will be taken into account in credit extensions, in addition to being a net exporter. In light of these changes, Turkish lira commercial loan growth may see a slight uptick in the coming period. In the current reporting period, the 13-week annualized growth in retail loans rose to 36.3% as of October 25, driven by the growth in personal credit cards and housing loans, which were exempted from loan growth limits. Personal credit cards and housing loans grew by 41.6% and 28.3%, respectively.

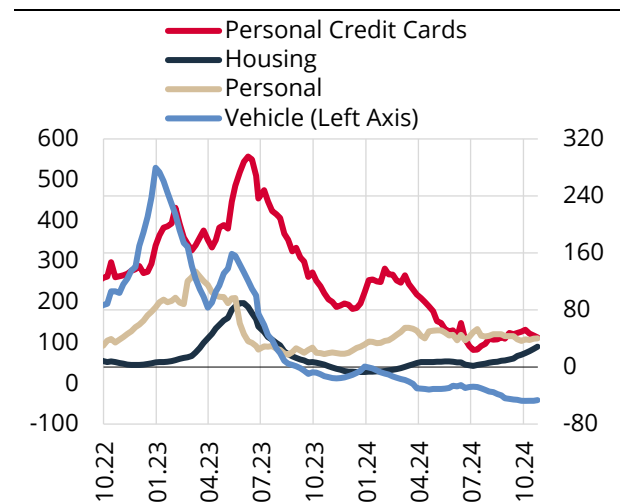
The increase in housing loan growth in the current reporting period is attributed to the rise in households' demand for housing loans due to the decline in the house price/rent ratio and banks' interest in utilizing their excess Turkish lira liquidity by extending long-term loans. Despite having accelerated slightly, the growth of housing loans remains similar to that of other loan types subject to limits, and the share of mortgage sales in total housing sales remains subdued at 11.2% as of September 2024. As for personal credit cards, their increased payment function since the pandemic and the installment facility they offer as an alternative borrowing option to personal loans, which are subject to growth limits, have been determinant in their growth. On September 27, 2024, the CBRT differentiated the maximum contractual interest rates for credit cards based on the amount of term debt of credit cards and raised the monthly interest rates for those with term debt exceeding TRY 150,000 from 4.25% to 4.75%, based on the current reference rate. The income elasticity of personal credit cards has declined in recent quarters, except for the high-balance group (Box 2.2). Increasing the maximum contractual interest rates of this group, which has a significant share in the personal credit card growth, may contribute to disinflation by reducing the personal credit card growth in the upcoming period. The 13-week annualized growth rate of personal loans declined slightly during the current reporting period to 40.4% as of October 25. While the growth in personal loans excluding overdraft accounts remained below the 2% growth limit, overdraft accounts had a significant impact on personal loan growth. The share of overdraft accounts in personal loans increased from 24.9% to 28.1% in the current reporting period. The 13-week annualized growth of vehicle loans has remained in the negative territory since March (Chart 2.2.12). On September 26, 2024, the BRSA announced a restructuring opportunity up to 60 months for personal credit cards with unpaid minimum due payments and personal loans with principal and/or interest payments more than 30 days overdue. This decision is expected to support banks' retail loan asset quality outlook and may have an upward impact on retail loan growth by increasing the performing loan balance.

**Chart 2.2.11: Loan Growth (13-Week Annualized, FX-Adjusted, %)**



Source: CBRT.

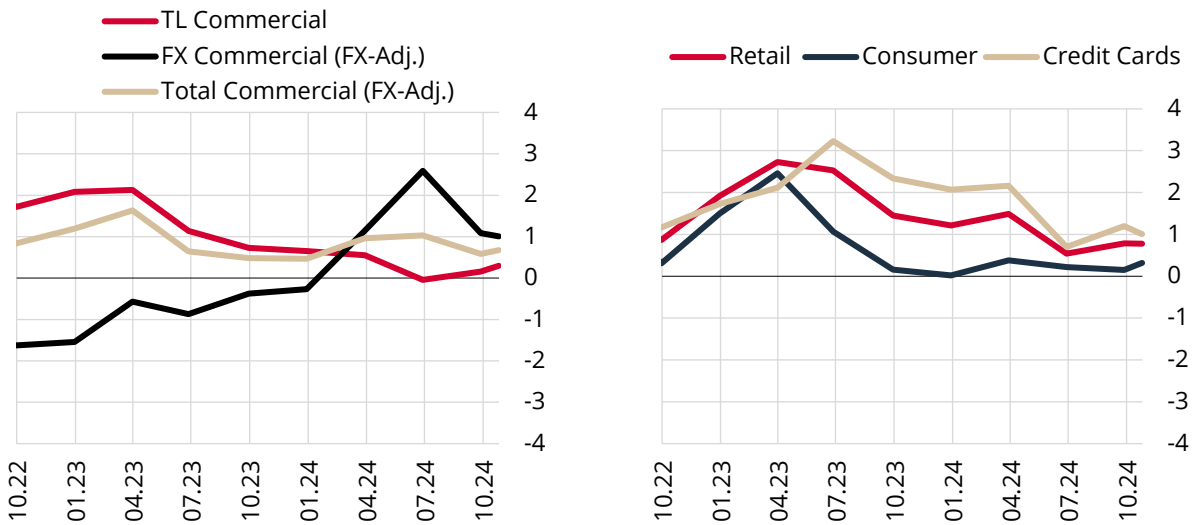
**Chart 2.2.12: Retail Loan Growth (13-Week Annualized, %)**



Source: CBRT.

**Real credit utilization converged to long-term averages in FX-adjusted total commercial loans but remained above long-term averages in retail loans.** With the impact of the loan growth limits introduced in May and tightened in July, exchange rate-adjusted FX commercial loan changes in real and standardized terms have started to decline, yet they are still above long-term averages. During the current reporting period, there has been a slight increase in the real Turkish lira commercial loan changes, yet they have remained close to long-term averages. With the impact of FX commercial loans, FX-adjusted total commercial loan changes in real and standardized terms declined but remained above long-term averages. Consumer loan changes in real and standardized terms are close to long-term averages due to relatively weak growth in vehicle and housing loans as well as personal loans subject to loan growth limits. Despite hovering above its long-term average, personal credit card rate changes in real and standardized terms, which were on a downtrend since the introduction of tight monetary policy, increased slightly again in the third quarter of 2024 (Chart 2.2.13).

**Chart 2.2.13: Credit Change\* (13-Week Average, Real, Standardized Value)**

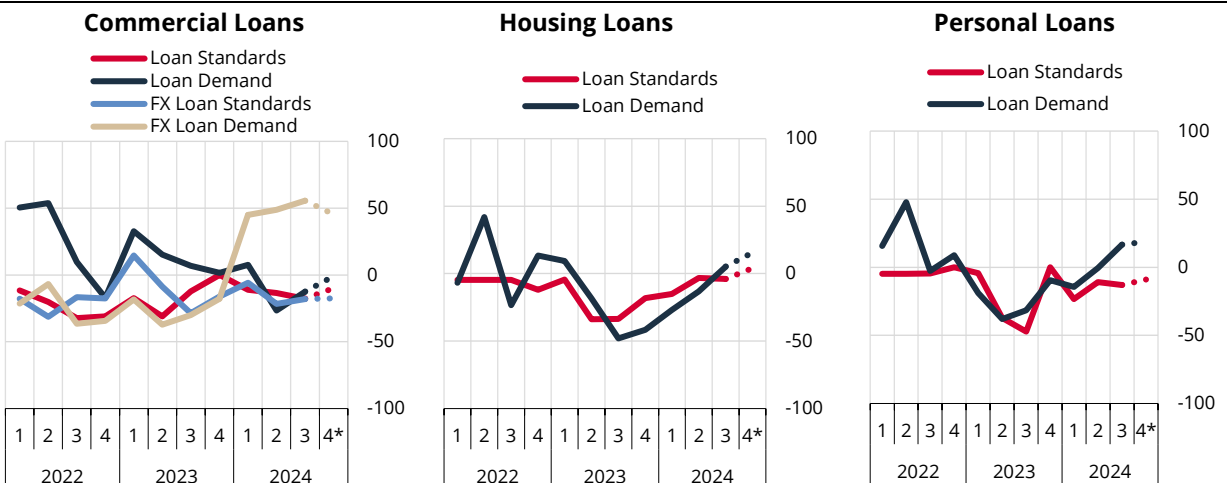


Source: CBRT.

\* Series are deflated by CPI. The mean and standard deviations of the series are calculated based on the 2006-2019 period. The 13-week average is taken after real weekly changes in loan stock balances are standardized. Consumer loans are composed of housing, vehicle and personal loans, while retail loans are the sum of consumer loans and personal credit cards.

**According to the Bank Loans Tendency Survey (BLTS), loan standards excluding housing loans will remain tight in the last quarter of 2024.** The fact that banks' loan standards for both personal and commercial loans were tight in the third quarter of 2024 has contributed to loan growth remaining below the limits. FX commercial loan demand has been strong since the first quarter of 2024 due to the lower cost implied by FX loan rates and exchange rate depreciation expectations compared to Turkish lira commercial loan rates. This outlook is expected to continue in the last quarter of 2024, albeit at a slightly weaker pace. On the other hand, the weak course in Turkish lira commercial loan demand that started in the second quarter of 2024 is projected to continue in the last quarter. Demand for personal and housing loans picked up in the third quarter of 2024 and is expected to continue to do so in the last quarter. The easing in only housing loan standards of banks and the increase in housing loan demand in the last quarter of 2024 are consistent with the recent increase in housing loan growth (Chart 2.2.14).

**Chart 2.2.14: Loan Standards and Loan Demand\***



Source: CBRT BLTS.

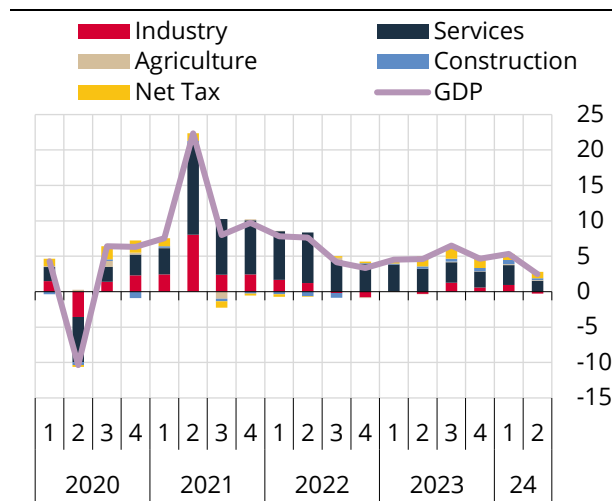
\* Denotes banks' expectations. Loan standards and loan demand are calculated as follows: Banks are asked how their loan standards (loan demand) have changed in the past three months. Net trends, which are calculated using percentages of responses, show the direction of change in loan standards (loan demand). An index above zero indicates easing in loan standards (increase in loan demand).

## 2.3 Economic Activity

### Supply and Demand Developments

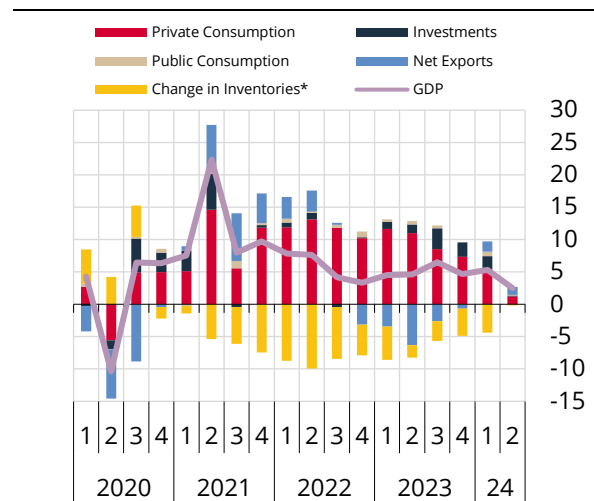
**Annual and quarterly growth rates declined in the second quarter.** In this period, GDP increased by 2.5% on an annual basis but remained flat on a quarterly basis with a growth of 0.1%. The fall in annual and quarterly growth rates indicated a weakening in economic activity compared to the first quarter. The services sector remained the main driver of annual growth on the production side. While the value added of the construction sector and net tax revenues continued to support growth, the industrial sector had a dampening impact (Chart 2.3.1). The weak course of the industrial sector is also assessed to have been driven by the two religious holidays and bridge days in the second quarter. On the expenditures side, final domestic demand made the largest contribution to growth in annual terms. Yet, net exports continued to contribute positively to growth in this period, thus enabling a better balance among demand components. The growth in demand resulted largely from the increase in private consumption demand, whereas public sector consumption and total investments had a very limited contribution to annual growth (Chart 2.3.2). Among investment items, construction investments continued to contribute positively to growth, while machinery-equipment investments posted an annual decline for the first time since the last quarter of 2019. In the second quarter, the change in inventories had a slightly downward effect on annual growth. The positive contribution of net exports to growth continued from the first quarter into the second quarter. In this period, private consumption was the driver of quarterly growth, whereas total investments and net exports had a reducing impact. In sum, coupled with the factors such as demand which was brought forward in the first quarter and bridge days in the second quarter, GDP data for the first half of the year indicate a moderate slowdown in economic activity.

**Chart 2.3.1: Annual GDP Growth and Contributions from Production Side (% Points)**



Source: CBRT, TURKSTAT.

**Chart 2.3.2: Annual GDP Growth and Contributions from Expenditures Side (% Points)**



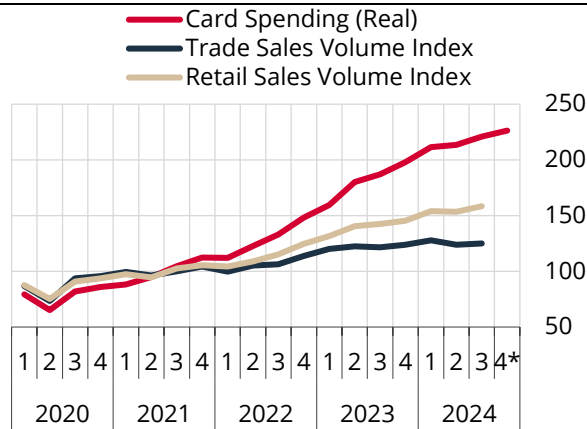
Source: CBRT, TURKSTAT.

\* Includes changes in inventories and statistical discrepancy due to chain-linking.

**Indicators for the third quarter suggest that domestic demand continues to slow, approaching disinflation-supportive levels.** In the third quarter, spending on goods excluding automobiles, which accounts for approximately half of household final consumption expenditures, increased on a quarterly basis, whereas the remaining part consisting of automobile sales and services expenditures declined. The retail sales volume index, a sub-item of the trade sales volume index, increased on a monthly and quarterly basis in August (Zoom-In 2.2). Meanwhile, among other sub-items of the trade sales volume index, trade of motor vehicles posted a monthly and quarterly increase, while wholesale trade rose month-on-month but remained flat quarter-on-quarter. The services production index, which displays movements very similar to the services expenditures component of household final consumption, decreased on a monthly basis in July and August and dropped by 0.9% on a quarterly basis (Chart 2.3.5). In the third quarter, survey data for manufacturing firms indicate a quarterly decline in domestic market orders. Information on consumption expenditures obtained from interviews with firms as of October points to a relatively flat outlook in

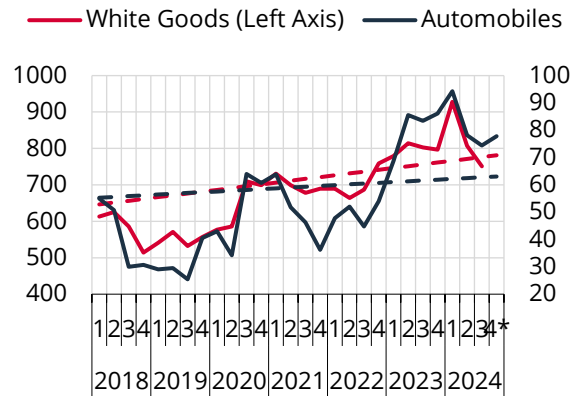
domestic demand for the last quarter of the year (Box 2.3). Real expenditures by card remained stable in July but rose in August and September. Thus, the rise in card spending accelerated in quarterly terms (Chart 2.3.3). In card spending, it is notable that there is a shift from durable goods expenditures to semi-durable and non-durable goods expenditures. However, October data suggest a flat monthly course in card spending. Meanwhile, automobile sales increased slightly in October after a quarterly decline in the third quarter (Chart 2.3.4). White goods sales continued to decline in this period, falling to a level lower than their historical trend.

**Chart 2.3.3: Consumption Indicators**  
(Seasonally and Calendar Adjusted, 2021=100)



Source: CBRT, TURKSTAT.  
\* Average of July-August retail sales volume index and trade sales volume index. As of October for card spending. Deflated by the CPI and indexed to 2021=100.

**Chart 2.3.4: Sales of White Goods and Automobiles\*\***  
(Thousand, Seasonally and Calendar Adjusted)

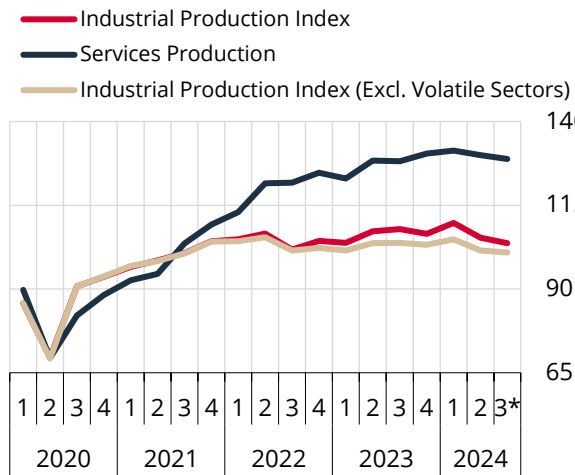


Source: CBRT, ODMD, TURKBESD.  
\* As of October for automobiles.  
\*\* Dashed lines show the average for the 2010-2018 period.

**In the third quarter, both industrial and services production decreased on a quarterly basis.** As of August, seasonally and calendar-adjusted industrial production fell by 1.5% quarter-on-quarter (Chart 2.3.5). When the typically highly volatile sectors are excluded, the fall in industrial production in the third quarter is assessed to be less pronounced than implied by the overall index. However, industrial production, which followed a volatile course in the second quarter of the year due to changes in the number of working days stemming from religious holidays and bridge days and contracted by 4.0% on a quarterly basis, is assessed to have fallen short of registering a recovery as of August, with the weak course across main groups persisting. Services production dropped quarter-on-quarter by 0.9% as of August. Accordingly, supply conditions were in general weaker than the demand outlook in the third quarter. Survey-based indicators such as the Business Tendency Survey (BTS) and the PMI also confirm the slowdown in industrial activity in the third quarter. In this period, survey indicators for production, employment and demand continued to decline quarter-on-quarter. The quarterly fall in the capacity utilization rate continued in the third quarter, and the capacity utilization rate dropped by 0.6 points on a quarterly basis to 75.2% as of October. Likewise, despite a limited monthly increase in October, the PMI production indicator also decreased in quarterly terms, remaining below the threshold level (Chart 2.3.6).



**Chart 2.3.5: Industrial Production and Services Production Indices\*\* (Seasonally and Calendar Adjusted, 2021=100)**

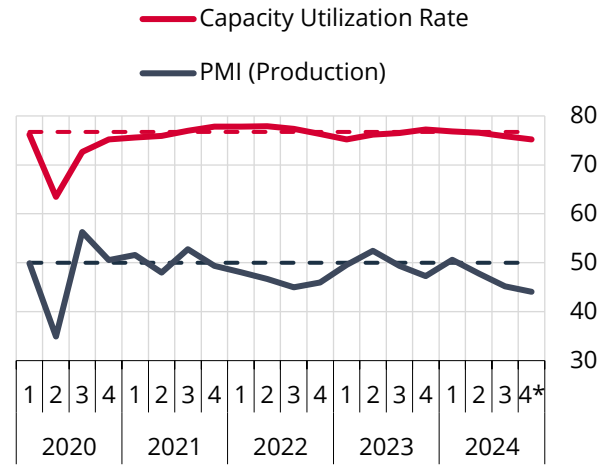


Source: CBRT, TURKSTAT.

\* Average of July-August.

\*\* Industrial production excluding recorded media, computer-optical instruments, basic pharmacy and other transportation sectors that are typically volatile.

**Chart 2.3.6: Capacity Utilization Rate and PMI\*\* (Seasonally Adjusted, %)**



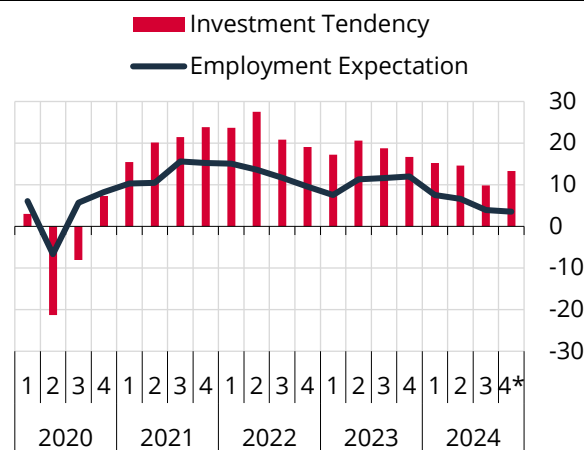
Source: CBRT, S&P, TURKSTAT.

\* As of October.

\*\* Dashed lines show the average capacity utilization rate for the 2011-2019 period and the threshold value of 50 for the PMI.

**Having declined in the third quarter, investment tendencies of manufacturing industry firms increased in October, while their employment expectations remained flat** (Chart 2.3.7). The production of capital goods is in line with the slowdown in investment tendencies observed in the third quarter. In the July-August period, the capital goods production index decreased on a monthly and quarterly basis, whereas the production of capital goods excluding vehicles and other transportation increased. On the other hand, imports of capital goods excluding transportation vehicles registered a monthly and quarterly decline in this period (Chart 2.3.8).

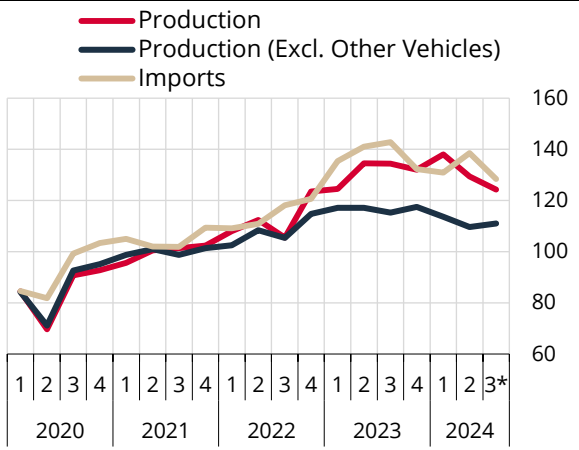
**Chart 2.3.7: BTS Expectations for Fixed Capital Investment Spending and Employment (Up-Down, Seasonally Adjusted, %)**



Source: CBRT.

\* As of October.

**Chart 2.3.8: Production and Import Quantity Indices of Capital Goods Excluding Vehicles (Seasonally Adjusted, 2015=100)**



Source: CBRT, TURKSTAT.

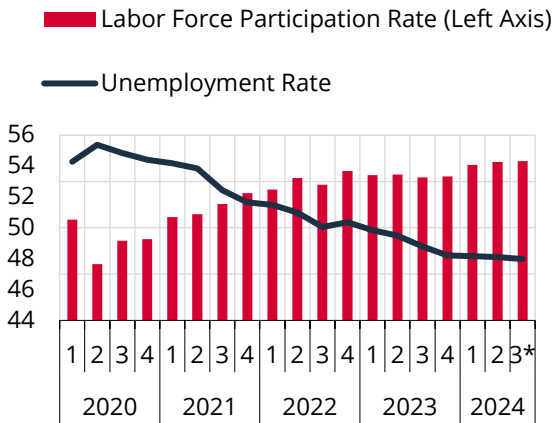
\* Average of July-August.

**Labor Market Developments**

**Employment continued to increase in the third quarter.** In seasonally adjusted terms, employment edged up by 0.3% (113,000 people) quarter-on-quarter as of August. The seasonally adjusted labor force participation rate was up by 0.1 points to 54.3% (Chart 2.3.9). In the third quarter, the unemployment rate decreased by 0.1 points over the previous quarter to 8.6%. In this period, population growth and the

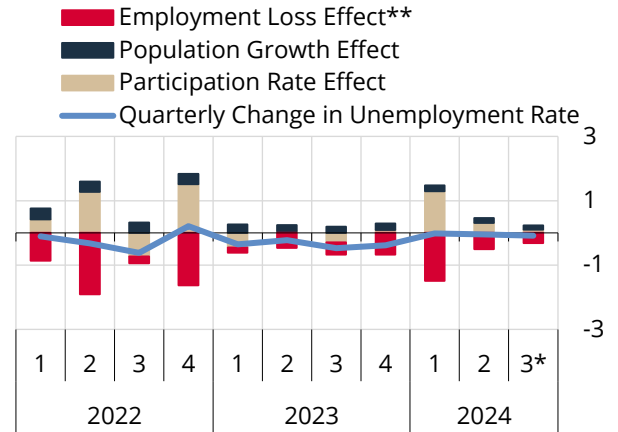
increase in the participation rate had upward effects of 0.13 and 0.11 points, respectively, on the unemployment rate, while employment growth had a downward effect of 0.31 points (Charts 2.3.10 and 2.3.11). Meanwhile, given the already high level of the labor underutilization rate, a complementary indicator of the labor market, despite a quarterly decline of 0.4 points as of August, the labor market may not be as strong as implied by the main indicators.

**Chart 2.3.9: Total Unemployment Rate and Labor Force Participation Rate (Seasonally Adjusted, %)**



Source: TURKSTAT.  
\* Average of July-August.

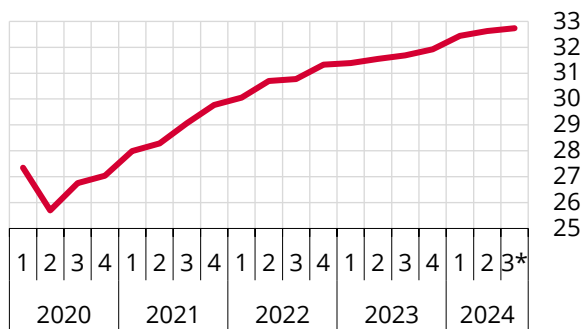
**Chart 2.3.10: Contributions to Change in Total Unemployment Rate (Seasonally Adjusted, % Points)**



Source: CBRT, TURKSTAT.  
\* Average of July-August.  
\*\* Negative value of the employment loss effect indicates an increase in employment.

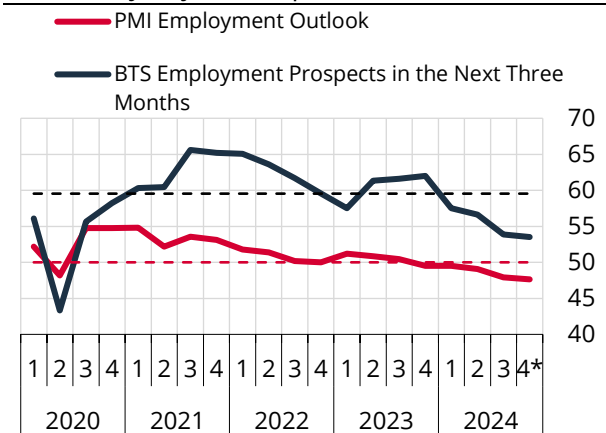
**Survey indicators and high-frequency data for the third quarter suggest that the weak course of industrial employment will continue in the coming period.** As of September, the total number of job listings is on the decline in quarterly terms, while the total number of job applications is on the rise. Survey data for manufacturing firms show that firms' employment outlook deteriorated on a quarterly basis in the third quarter, while employment expectations for the next three months fell below their historical average (Chart 2.3.12). On the other hand, October data point to a flat outlook in industrial employment in the last quarter.

**Chart 2.3.11: Total Employment (Seasonally Adjusted, Million People)**



Source: TURKSTAT.  
\* Average of July-August.

**Chart 2.3.12: Employment Outlook and Expectation in the Industrial Sector\*\* (Seasonally Adjusted, Up-Down)**

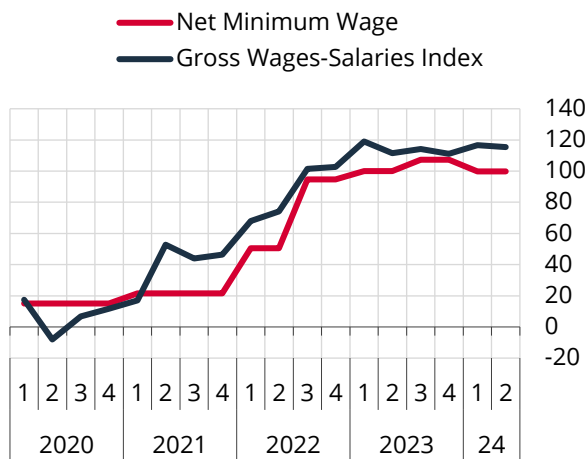


Source: CBRT, S&P Global.  
\* As of October.  
\*\* BTS indicator is adjusted so that its neutral level will be 50 in line with the PMI. Dashed lines show the average of 2011-2019 for the BTS and the threshold value of 50 for the PMI.

**The annual rate of increase in non-farm nominal wages was 115.4% in the second quarter of 2024**

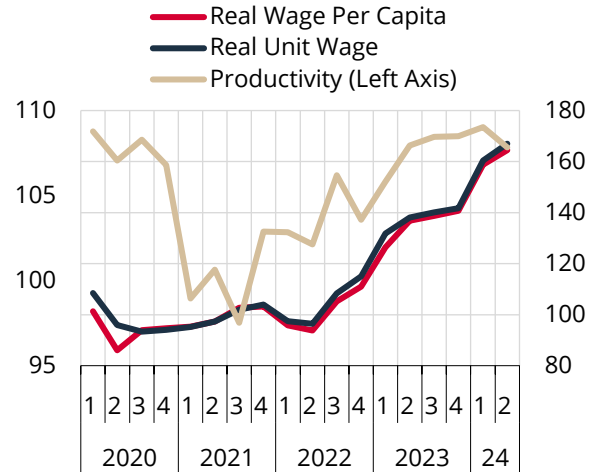
(Chart 2.3.13). With the slowdown in economic activity affecting the labor market in the second quarter of 2024, partial labor productivity in the non-farm sector (non-farm value added/non-farm employment) decreased slightly. As the rise in real per capita wages continued, albeit at a slower pace, in the presence of a productivity loss, real unit wages (real per capita wage/productivity) in the non-farm sector continued to increase in the second quarter (Chart 2.3.14). However, in the rest of 2024, real unit wages are expected to follow a more moderate course compared to the previous year and contribute to the disinflation process.

**Chart 2.3.13: Non-Farm Wage Index and Net Minimum Wage (Nominal, Annual % Change)**



Source: CBRT, Ministry of Labor and Social Security, TURKSTAT.

**Chart 2.3.14: Non-Farm Partial Labor Productivity\*, Real Per Capita Wage and Real Unit Wages\*\* (Seasonally Adjusted, 2021=100)**



Source: CBRT, TURKSTAT.

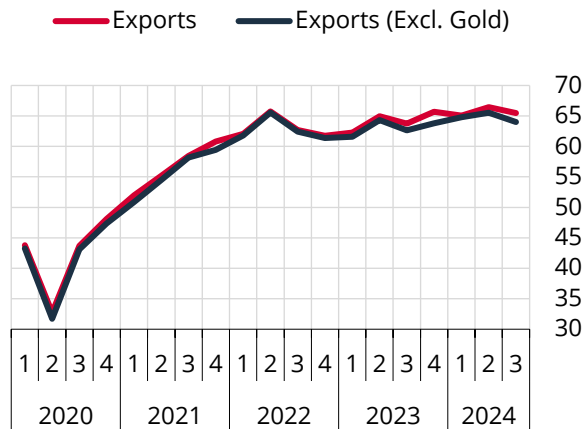
\* Non-farm value added/non-farm employment.

\*\* Real per capita wage/productivity. Deflated by the CPI.

**Foreign Trade and Balance of Payments Outlook**

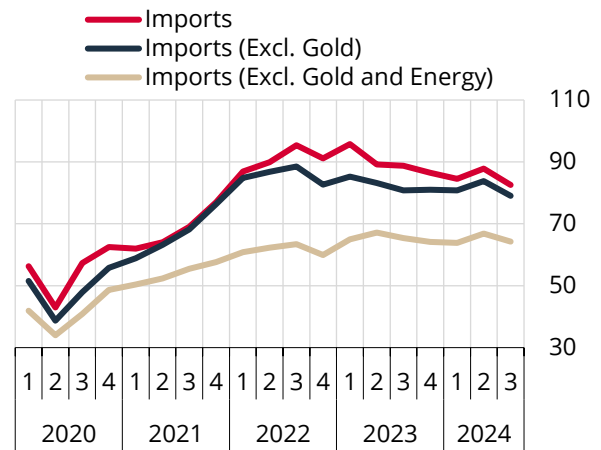
**In the third quarter of 2024, exports and imports excluding gold decreased.** The partial quarterly recovery in the economic activity of Türkiye’s main trade partners, and the above-the-threshold level of the export climate index limited the decline in exports (Chart 2.3.15). Gold exports rose over the second quarter, whereas energy exports dropped significantly. Accordingly, seasonally and calendar-adjusted exports excluding gold and energy posted a slight decline. In this period, motor vehicles, electrical equipment, base metal and fabricated metal sectors made a positive contribution to exports, while petroleum products, other transportation vehicles and wearing apparel sectors restrained exports. In annualized terms, exports to the European Union, the Commonwealth of Independent States and African countries increased, while exports to the Middle East declined slightly. In the third quarter, seasonally and calendar-adjusted total imports declined (Chart 2.3.16). Imports of consumption and intermediate goods made the largest contribution to the quarterly decline. Gold imports fell slightly, while seasonally and calendar-adjusted energy imports recorded a more pronounced decrease. The increase in the seasonally and calendar-adjusted foreign trade deficit observed in the second quarter was replaced by a decline in the third quarter amid the fall in gold-excluded imports. In this period, both the total and the core foreign trade deficit narrowed. On the other hand, provisional foreign trade data indicate a limited monthly decrease in exports and an increase in imports in October in seasonally and calendar adjusted terms. Seasonally adjusted imports of consumption goods rose in October following the fall in the third quarter. However, this rise appears to be milder when the jewelry item classified under consumption goods is excluded. In this framework, the course of imports, particularly imports of consumption goods, in the remainder of the quarter will be closely monitored with respect to the rebalancing in demand.

**Chart 2.3.15: Exports** (Seasonally and Calendar Adjusted, USD Billion)



Source: CBRT, TURKSTAT.

**Chart 2.3.16: Imports** (Seasonally and Calendar Adjusted, USD Billion)

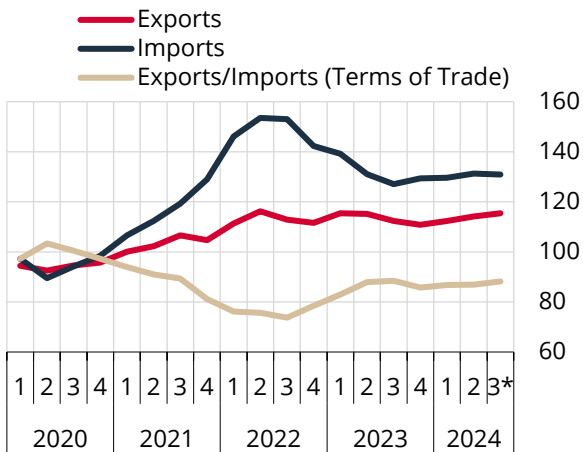


Source: CBRT, TURKSTAT.

**The terms of trade posted a slight increase in the third quarter, while the decline in the import quantity index outstripping the fall in the export quantity index pointed to a real rebalancing in foreign trade.**

According to the foreign trade unit value indices for the third quarter calculated as the July-August average, exports prices were slightly up whereas imports prices remained flat (Chart 2.3.17). Accordingly, the terms of trade continued to affect the foreign trade balance favorably in this period as well. Meanwhile, in terms of foreign trade quantity indices, seasonally and calendar-adjusted exports and imports decreased in the third quarter, with a larger decline in imports (Chart 2.3.18). Thus, the real rebalancing in foreign trade supported the improvement in the trade deficit. An analysis by goods groups reveals that all goods groups contributed to the decline in the quantity of imports, while the fall in the quantity of imports of consumption goods was stronger than that of other groups (Chart 2.3.19). The decline in July and August was influential in the course of imports of consumption goods.

**Chart 2.3.17: Foreign Trade Unit Value Indices** (2015=100)



Source: TURKSTAT.  
\* Average of July-August.

**Chart 2.3.18: Foreign Trade Quantity Indices** (Seasonally Adjusted, 2015=100)

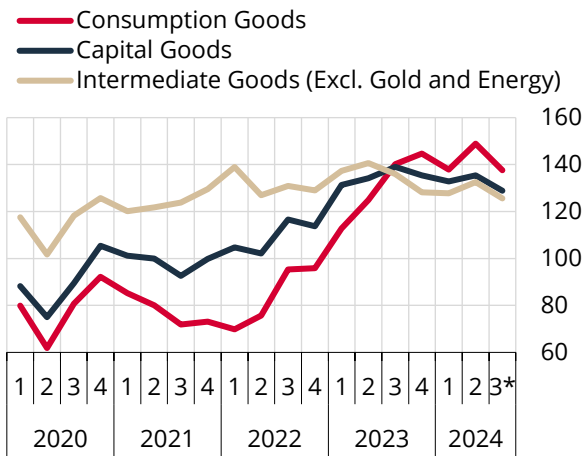


Source: CBRT, TURKSTAT.  
\* Average of July-August.

**The services balance maintains its strong performance on the back of both travel and transportation revenues.** The surplus in the balance of services continued to increase in the third quarter as seasonally and calendar adjusted balance of transportation revenues increased and net travel revenues remained high as of August (Chart 2.3.20). In addition, 2023 bulletin of the International Trade in Services Statistics, published by TURKSTAT introduced upward revisions to the services balance as of 2022. These revisions made a 12-month cumulative contribution of USD 4 billion to the services balance in July 2024 and a contribution of USD 2.2 billion since the beginning of the year. The ongoing uptrend in the seasonally and calendar-adjusted number of foreign visitors continued to contribute to the rise in travel revenues.

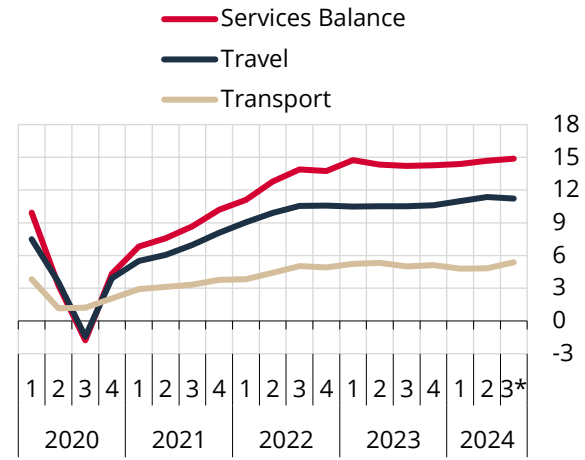
Preliminary data suggest that the number of foreign visitors also remained elevated and continued to contribute positively to net travel revenues in September.

**Chart 2.3.19: Import Quantity Indices by Goods Groups** (Seasonally Adjusted, 2015=100)



Source: CBRT, TURKSTAT.  
\* Average of July-August.

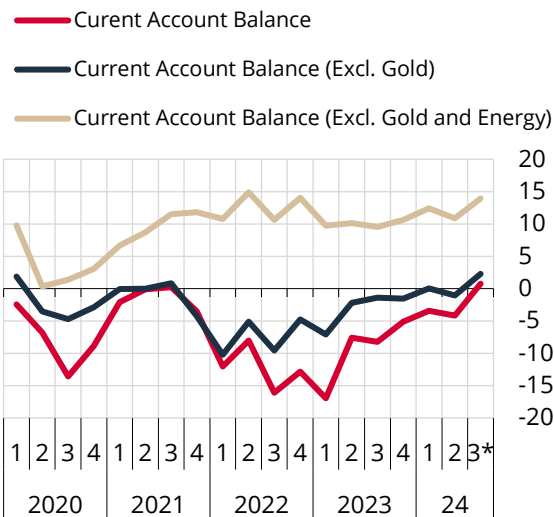
**Chart 2.3.20: Services Balance** (Seasonally and Calendar Adjusted, USD Billion)



Source: CBRT.  
\* Average of July-August.

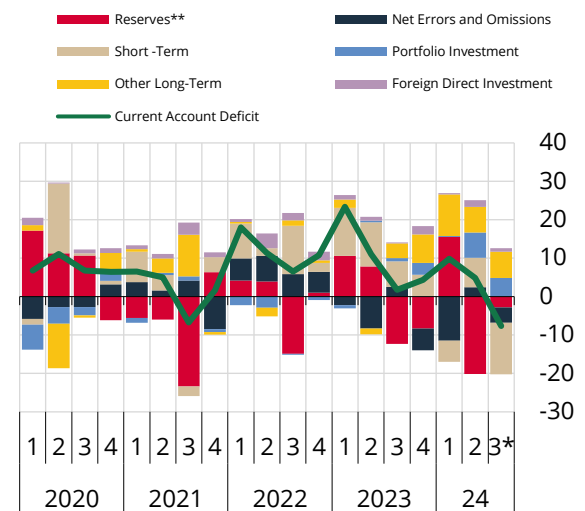
**The improvement in the current account balance gained momentum in the third quarter amid the significant decline in the foreign trade deficit and the ongoing strong course of the services balance.** Despite the deterioration in the primary income balance, the seasonally and calendar-adjusted current account deficit registered a marked decline in the third quarter over the previous quarter due to the significant decline in the foreign trade deficit and the continued strong contribution of the services balance (Chart 2.3.21). Similarly, the surplus in the current account balance excluding gold and energy, which is a main trend indicator, also rose in seasonally and calendar-adjusted terms in the third quarter. Both the gold and energy trade deficits decreased in this period. Besides, the revision in the services balance item had a downward effect of USD 4 billion on the 12-month cumulative current account deficit. As for the sources of the revision, the upward revision in 2023 and in the January-July 2024 period both resulted substantially from the rise in transportation revenues (freight revenues).

**Chart 2.3.21: Current Account Balance** (Seasonally and Calendar Adjusted, USD Billion)



Source: CBRT.  
\* Average of July-August.

**Chart 2.3.22: Financing of the Current Account Deficit** (USD Billion)



Source: CBRT.  
\* Cumulative of July-August.  
\*\* Denotes the CBRT reserves plus the cash and deposits at banks abroad. A negative value indicates an increase in reserves.

**Portfolio investments played a smaller while long-term items played a larger role in financing the current account balance, and reserve accumulation continued, while the net errors and omissions item posted outflows.** As of August, non-residents' direct investments excluding real estate decreased in the third quarter compared to the previous quarter. Meanwhile, portfolio inflows to equity and debt securities markets and inflows through short-term investment items such as loans posted a quarter-on-quarter decline (Chart 2.3.22). In the third quarter, capital inflows took place predominantly through long-term loans and the bond issuances of the banking and private sectors. In this period, the net errors and omissions item recorded outflows, while reserves increased. Leading indicators suggest that official reserves rose in September. Moreover, through the USD-denominated 10-year bond issuance of the Ministry of Treasury and Finance on September 25, amounting to USD 3.5 billion, a cash financing of USD 1.6 billion was provided, and also a liability management transaction was conducted for the first time after a long period. In this scope, the principal repayment of approximately USD 1.9 billion due until the end of 2025 was postponed to 2035.

### Public Finance Developments

**In the first nine months of the year, the central government budget ran a deficit of TRY 1,074.0 billion and a primary deficit of TRY 161.3 billion.** In this period, the financing need was met by both domestic and external borrowing, and approximately USD 10.5 billion worth of financing was obtained from international capital markets. Thus, the external financing amount set at USD 10 billion in the Treasury Financing Program for 2024 was exceeded. It is estimated that the ratio of the central government debt stock to national income was 22.0% in September 2024, while the ratios of domestic and external debt stocks to national income were 11.1% and 10.9%, respectively. In the January-October period, the Treasury's cash deficit stood at TRY 1,703.1 billion.

**In the January-September period, revenues and expenditures soared by 76.9% and 81.1%, respectively, compared to the same period of the previous year.** In this period, the tax revenues-primary expenditures coverage ratio was 82.2%. The contribution of personnel expenditures to the increase in primary expenditures also stemmed from the adjustments made in civil servants' salaries. Current transfers, which have a considerable share within primary expenditures, recorded an annual increase of 68.7% in the first nine months of the year. In addition to the increase in the amount of holiday bonuses for retirees in 2024, the hike in the number of retirees due to the early retirement scheme and the high annual increase in the shares allocated from revenue also contributed to the uptick in current transfers. Moreover, a total of TRY 170.9 billion was transferred to public enterprises, including TRY 164.8 billion to the Electricity Generation Corporation as part duty losses and a total of TRY 158.2 billion to public enterprises, including TRY 71.9 billion to the Turkish Grain Board and TRY 61.7 billion to the Turkish State Railways as part of lending. On the other hand, the highest contribution to the uptick in tax revenues came from income tax. Due to the slowdown in domestic demand, the contribution of special consumption tax (SCT) and value added tax on imports to the increase in tax revenues has been declining in recent months. Corporate tax recorded a low annual increase of 37.7% in the January-September period. The total restructuring revenues of TRY 49.7 billion collected in the first nine months of the year contributed to the budget.

**The annualized budget deficit to GDP ratio is estimated to be around 4.9% as of September.** In the Medium-Term Program (MTP) announced in September, the 2024 realization forecasts for the ratio of expenditures and revenues to GDP are 25.4% and 20.5%, respectively, and the budget deficit-to-GDP ratio is projected to be 4.9% at the end of the year.

## Zoom-in 2.2

### A Close Look at the Retail Sales Volume Index

**Measuring the sales of enterprises operating in the retail trade sector on a monthly basis, the retail sales volume index serves as an important leading indicator of consumption demand.**

Retail sales volume indices are released in a total of 12 breakdowns, 9 breakdowns at the three-digit activity level (according to NACE Rev. 2 classification) and three breakdowns at the four-digit activity level (Table 1). In this study, to understand the drivers of the recent increase in the retail sales volume index, we estimate retail sales volume indices at the four-digit NACE code level using monthly turnover data compiled from the Turkish Revenue Administration (TRA).



**Table 1: Activity Groups for which Retail Sales Volume Indices Are Released**

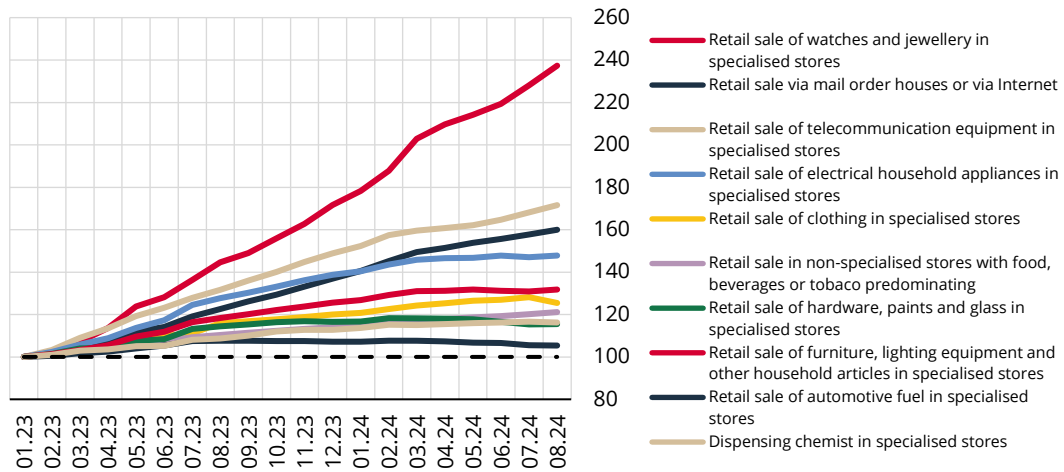
Main Group	Subgroups (NACE Rev2. Three-Digit Activity Level)
<b>Retail Trade (G47)</b>	G471- Retail sale in non-specialized stores
	G472- Retail sale of food, beverages and tobacco in specialized stores
	G473- Retail sale of automotive fuel in specialized stores
	G474- Retail sale of information and communication equipment in specialized stores
	G475- Retail sale of other household equipment in specialized stores
	G476- Retail sale of cultural and recreation goods in specialized stores
	G477- Retail sale of other goods in specialized stores
	G478- Retail sale via stalls and markets
	G479- Retail trade not in stores, stalls or markets
	G4711- Retail sale in non-specialized stores with food, beverages or tobacco predominating
	G4719- Other retail sale in non-specialized stores
G4791- Retail sale via mail order houses or via Internet	

Source: TURKSTAT Central Dissemination System (Biruni).

**To calculate the indices, firstly, four-digit sector-level turnover indices are constructed for all retail sub-sectors using firm-level turnover data.** Secondly, price indices are obtained by using three-digit sector-level turnover and volume indices released by TURKSTAT. Finally, sales volume indices are calculated by deflating the four-digit sector-level turnover indices with price indices. Since the volume indices for retail trade by mail or internet, retail trade with food, beverages or tobacco predominating and other retail trade sectors are announced by TURKSTAT at the four-digit sector level, the sales volume indices published for these sectors are used in their original forms.

**Four-digit sector-level retail sales volume indices are shown in Chart 1.** An analysis of the course of the calculated indices since the beginning of 2023 reveals that retail trade in watches and jewelry, retail trade by mail or internet and retail trade in telecommunication equipment have diverged from other sectors. The divergence in the retail trade in watches and jewelry sector is particularly noteworthy. This divergence was driven by the increase in retail trade in gold and gold products, which accounts for a large portion of the sector's total turnover. Sales volume indices in the retail trade of telecommunication equipment and retail trade via mail or internet sectors continue to increase in 2024, albeit at a slower pace compared to 2023. In the recent period, a moderate growth has been recorded in the retail trade with food, beverages or tobacco predominating sector, whose share in total retail turnover is relatively high at around 25%, while a flat or declining course has become evident in other sectors.

**Chart 1: Retail Sale Volume Indices at Four-Digit NACE Code Level\*** (2023 January=100, 12-Month Moving Average)

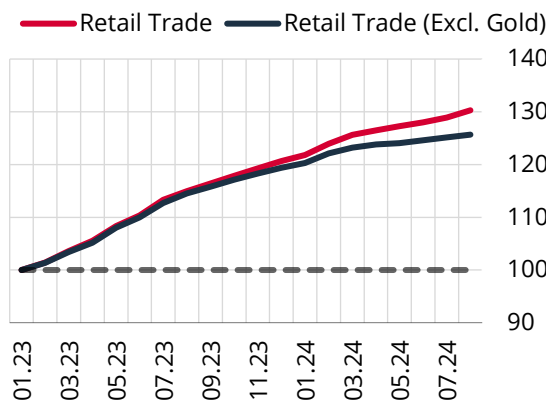


Source: Authors' calculations, TRA, TURKSTAT.

\* Sectors with a share above 2% within the domestic turnover of the retail sector in the last year are shown in the chart.

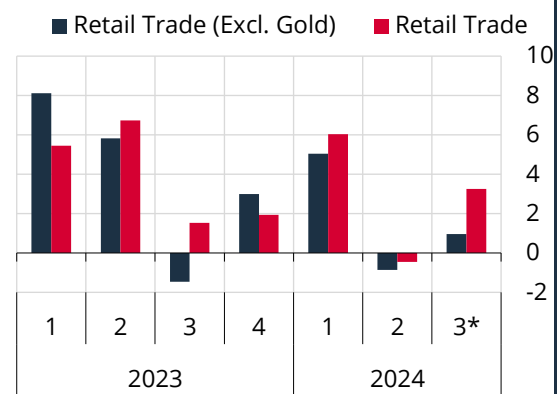
**In light of these findings, the retail sales volume index excluding gold is constructed by excluding the retail sale of watch and jewelry sector from the total retail sales volume index to analyze the consumption demand trend in a more reliable way.** This index has been hovering considerably below the total retail sales volume index published by TURKSTAT since June 2023 (Chart 2). Recent developments suggest that the increase in the retail sales volume index excluding gold has been milder than the rise in the total index (Chart 3). In the July-August period, the total retail sales volume index grew by 3.2% quarter-on-quarter, while the retail sales volume index excluding gold rose by 1%.

**Chart 2: Retail Sales Volume Index and Retail Sales Volume Index Excluding Gold** (2023 January=100, 12-Month Moving Average.)



Source: Authors' calculations, TRA, TURKSTAT.

**Chart 3: Retail Sales Volume Index and Retail Sales Volume Index Excluding Gold** (Seasonal and Calendar Adjusted, Quarterly % Change)



Source: Authors' calculations, TRA, TURKSTAT.

\* As of July-August.

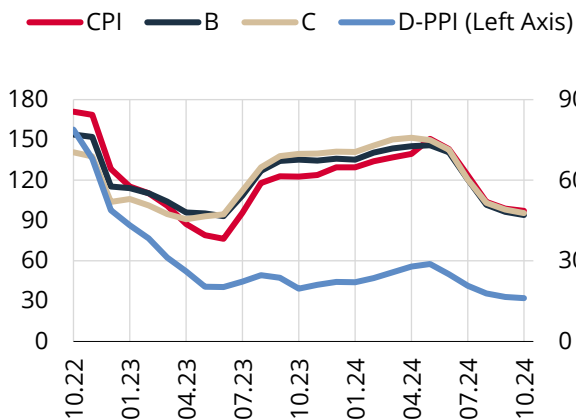
**In sum, retail sales volume indices calculated at the four-digit sector level point to notable differences across sub-sectors.** A significant portion of the recent increase in the retail sales volume index was driven by the watch and jewelry sector, which is mainly composed of gold and gold products. The retail sales volume index excluding this sector indicates that the uptick in consumption demand is milder.

## 2.4 Inflation

**Consumer inflation stood at 48.6% in October 2024, decreasing by 13.2 points compared to the previous reporting period** (Chart 2.4.1). The downtrend in global commodity prices that started in May extended into August, while the rise in non-energy commodity prices in September spread across all main groups in October. The global supply chain pressure index hovered close to its historical average starting from September, indicating a mild outlook in global supply constraints. The rise in currency basket grew slightly stronger in August but weakened again after September. Against this background, pressures driven by producer prices on consumer inflation eased further.

**The slowdown in demand is estimated to have continued in the third quarter of 2024, approaching levels supportive of disinflation.** In this period, tax revisions and price hikes in administered items with a total impact of 2.9 percentage points were among the main drivers of the inflation outlook. Notably, services inflation remained elevated, led by groups with strong time-dependent price setting and backward-indexation behavior, as well as administered items. Despite the decline in inflation expectations in this quarter, the current levels remained above the projections of the Inflation Report. An analysis of third-quarter developments by sub-items reveals that the food group made the most significant contribution to the decline in annual consumer inflation, but this pattern was disrupted in October due to prices of fresh fruits and vegetables. In this quarter, core goods and services groups also contributed to the decline, while energy and alcohol-tobacco-gold groups had a more limited downward impact on annual inflation. In October, food price hikes driven by prices of fresh fruits and vegetables came to the fore with their impact on consumer inflation (Chart 2.4.2).

**Chart 2.4.1: CPI, D-PPI, B Index and C Index\***  
(Annual % Change)

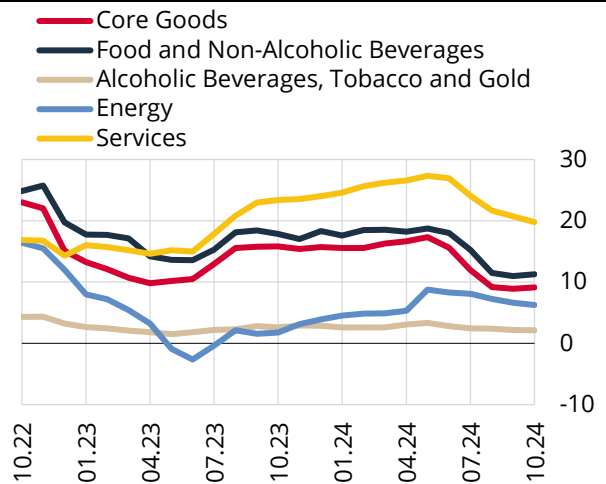


Source: TURKSTAT.

\* B index: CPI excluding unprocessed food, energy, alcoholic beverages, tobacco and gold.

C index: CPI excluding food and non-alcoholic beverages, energy, alcohol-tobacco and gold.

**Chart 2.4.2: Contributions to Annual CPI (%)**  
Points)

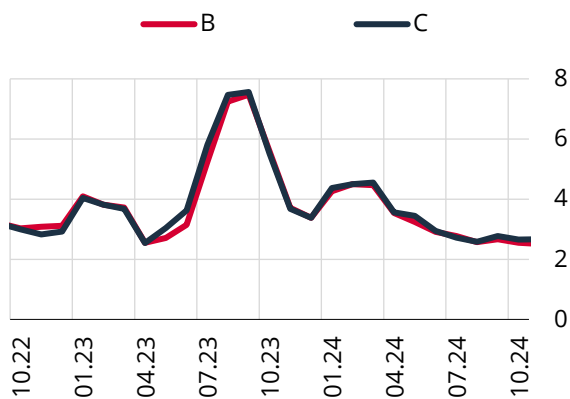


Source: CBRT, TURKSTAT.

**The underlying trend of inflation decelerated, albeit remaining above projections.** As of September, seasonally adjusted average quarterly increases in B and C indices were 2.7% and 2.8%, respectively, displaying a slight quarter-on-quarter slowdown (Chart 2.4.3). This was mainly driven by the adjustments in administered items and services groups with a high tendency for time-dependent price setting and backward-indexation. In October, the downtrend in B and C indicators continued. An analysis of the subgroups of the B index reveals that monthly price increases remained high in services in the third quarter but lost pace in October (Chart 2.4.4). Excluding rents, which diverge from other services items in terms of their dynamics, monthly price increases in services have gradually waned. Price increases in core goods weakened significantly in the reporting period. Although this trend was replaced by a partial increase due to the depreciation in August, core goods remained subdued in general (Chart 2.4.4). Processed food inflation, another component of the B index, also declined in this period. Alternative indicators such as median inflation, SATRIM and dynamic factor model-based (DFM) indicator displayed a similar trend, confirming the outlook in core groups. The three-month average of alternative indicators for the underlying trend fell from

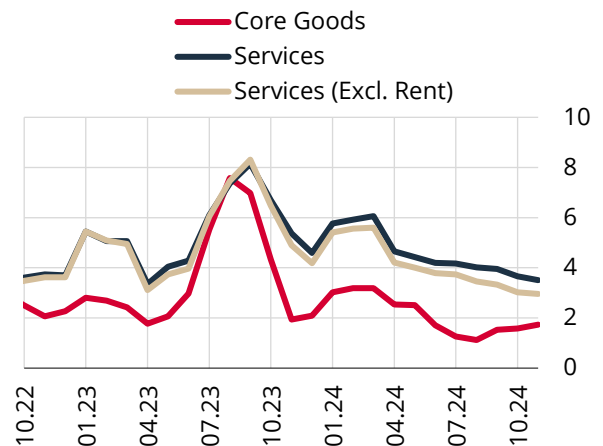
2.8% at the end of the previous quarter to 2.6% in the third quarter and to 2.4% in October (Chart 2.4.5, Box 2.5). In this period, services prices posted a relatively strong increase, albeit decelerating slightly quarter-on-quarter (Table 2.4.1). The highest price increase was recorded in rents due also to the rise in the contract renewal rate in the third quarter. Rent increase rates, both in new and renewed contracts obtained from the Retail Payment System (RPS) micro data and those monitored through residential property valuation reports, remained below the current annual rent inflation in the CPI and were receding (Chart 2.4.6, Box 2.6). The lower contract renewal rate in the coming months relative to the third quarter and the decline in the reference rates in contract renewals point to a slowdown in monthly rent inflation in the last quarter of the year. In fact, monthly rent inflation decelerated in October, confirming this outlook. In the third quarter, services inflation was mostly shaped by the start of schools. Education services increased sharply on the back of university tuition fees. School bus fares and student residence fees pushed up prices of transport services and accommodation services, respectively. Adjustments in administered items, particularly the lump sum tax hike in fuel prices, had an adverse impact on transport services inflation. In this period, catering services in the restaurants-hotels group lost momentum compared to the previous quarter. Price increases in communication services were also less pronounced. Core goods prices continued to increase at a slower pace than other groups. The mild trend in prices of durable goods was mainly attributed to the course of exchange rates and the slowdown in domestic demand. Furniture prices decreased in the third quarter. After falling in the previous quarter, prices of electric and non-electric appliances (excluding white goods) remained flat in this quarter. On the other hand, quarterly inflation picked up slightly in automobiles and white goods. The uptick in automobile prices is attributed to the general safety regulation (GSR2) and the rise in the euro exchange rate in August. In October, seasonally adjusted price increases declined in both core goods and services.

**Chart 2.4.3: B and C Indices** (Seasonally Adjusted, Monthly % Change, Three-Month Average)



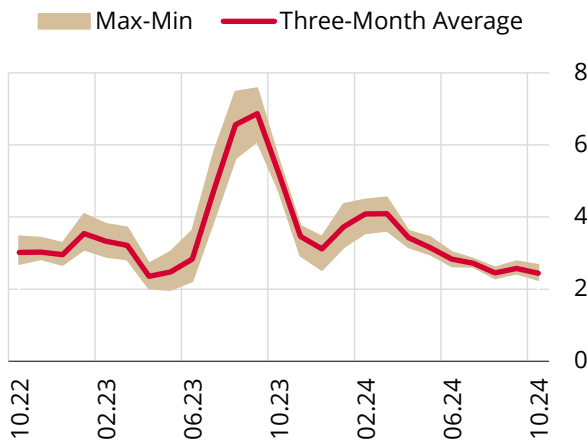
Source: CBRT, TURKSTAT.

**Chart 2.4.4: Services and Core Goods Prices** (Seasonally Adjusted, Monthly % Change, Three-Month Average)



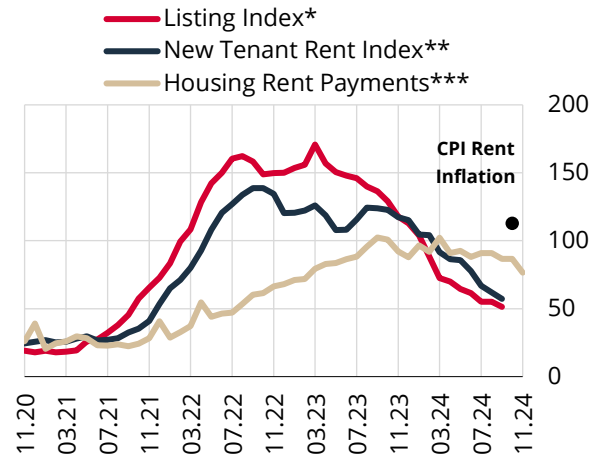
Source: CBRT, TURKSTAT.

**Chart 2.4.5: Indicators of Underlying Inflation\*** (Seasonally Adjusted, Monthly % Change, Three-Month Average)



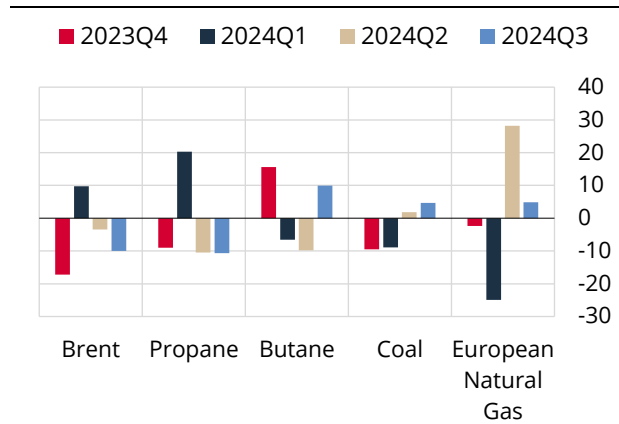
Source: CBRT, TURKSTAT.  
 \* Monthly average of seasonally adjusted B and C indices and SATRIM, median inflation, exclusion of volatile items and DFM indicators. Shaded area shows the maximum and minimum range.

**Chart 2.4.6: Leading Indicators of Rents** (Annual % Change)



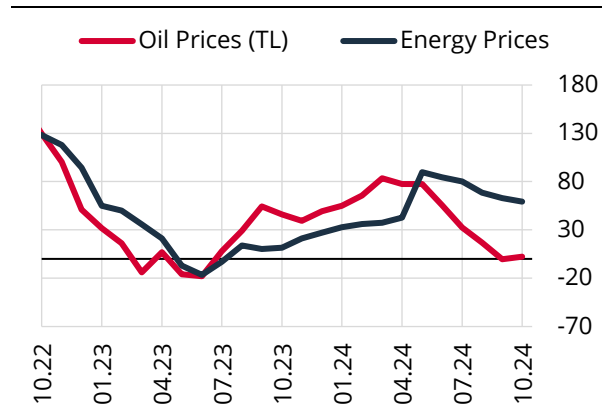
Source: CBRT, Sahibinden.com.  
 \* Calculated by using the rents (TL/m2) advertised on Sahibinden.com for Türkiye's three largest cities (Istanbul, Ankara and Izmir).  
 \*\* Indicator based on expert opinions obtained from mortgage loan valuation reports in the scope of the CBRT's house price index study.  
 \*\*\* Percentage change of new and renewed contracts compared to the previous contract including data for the first 7 days of November.

**In the third quarter, domestic energy prices followed an unfavorable course. Domestic energy prices strengthened in the third quarter, increasing by 18.04%** (Table 2.4.1). In this period, global energy commodity prices decreased due to Brent oil and propane prices, while prices of butane, coal and natural gas increased and diverged from this trend (Chart 2.4.7). The international Brent crude oil price, which was around USD 83 on average in June, followed a fluctuating trend due to supply-side factors and geopolitical risks despite the weak demand outlook and rose in July before falling again in the following period. The oil price, which was around USD 74 on average at the end of September, rose again in October. In this quarter, currency basket displayed a milder course following the strengthening in August. Accordingly, in this quarter, pressure from energy commodity prices weakened (Chart 2.4.8). In contrast to this outlook, energy prices in the CPI posted a sharp increase in this period due to developments in taxes and administered items. The lump-sum SCT amounts on fuel and bottled gas were revised in July. Electricity and natural gas for households were increased by 38.0% and 27.6% in July and August, respectively. Energy prices followed a mild course in September and October.

**Chart 2.4.7: Energy Commodity Prices\*** (USD, EUR)


Source: Bloomberg.

\* Brent oil prices are per barrel, coal prices are per ton, butane and propane prices are per gallon. European natural gas prices are in euro and per MWh.

**Chart 2.4.8: Energy Prices** (Annual % Change)


Source: Bloomberg, TURKSTAT.

**Table 2.4.1: Consumer Prices**

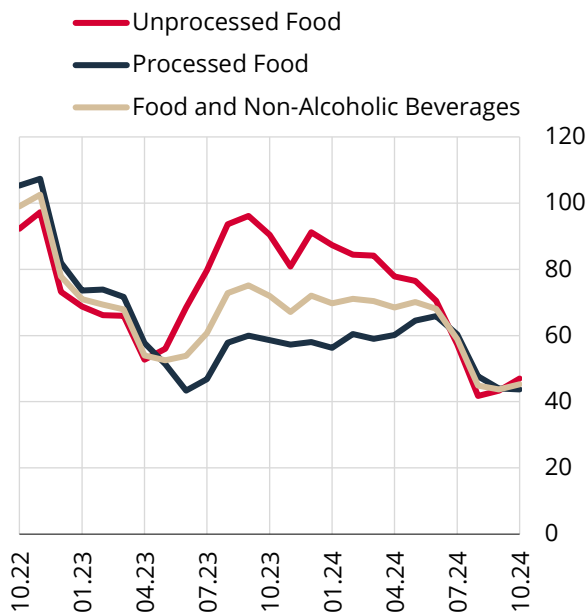
	Quarterly % Change (Seasonally Adjusted)				Annual % Change			
	2023	2024			2023	2024		
	IV	I	II	III	IV	I	II	III
<b>CPI</b>	<b>11.12</b>	<b>13.03</b>	<b>8.90</b>	<b>9.32</b>	<b>64.77</b>	<b>68.50</b>	<b>71.60</b>	<b>49.38</b>
<b>B</b>	<b>10.46</b>	<b>13.96</b>	<b>8.97</b>	<b>8.21</b>	<b>68.02</b>	<b>71.89</b>	<b>70.40</b>	<b>48.23</b>
<b>C</b>	<b>10.45</b>	<b>14.25</b>	<b>9.07</b>	<b>8.55</b>	<b>70.64</b>	<b>75.21</b>	<b>71.41</b>	<b>49.10</b>
<b>1. Goods</b>	9.74	10.65	7.16	8.00	55.46	58.17	62.56	40.27
<b>Energy</b>	<b>17.08</b>	<b>10.80</b>	<b>6.41</b>	<b>18.04</b>	<b>27.19</b>	<b>37.32</b>	<b>84.58</b>	<b>62.94</b>
<b>Food and Non- Alcoholic Beverages</b>	<b>10.51</b>	<b>12.23</b>	<b>8.89</b>	<b>6.50</b>	<b>72.01</b>	<b>70.41</b>	<b>68.08</b>	<b>43.72</b>
Unprocessed Food	10.51	11.71	9.36	6.34	91.23	84.14	70.50	43.34
Fresh Fruits and Vegetables	2.96	6.97	18.26	2.41	81.29	82.67	78.61	32.70
Other Unprocessed Food	15.36	14.66	4.19	8.93	97.47	85.02	66.30	50.07
Processed Food	10.50	12.68	8.48	6.64	58.05	58.97	65.89	44.05
Bread and Cereals	7.26	11.98	11.09	7.04	58.42	58.80	71.15	42.83
Other Processed Food	12.17	13.01	7.28	6.45	57.88	59.02	63.43	44.77
<b>Goods (Excl. Energy and Food)</b>	<b>6.77</b>	<b>9.50</b>	<b>6.16</b>	<b>5.90</b>	<b>55.00</b>	<b>57.59</b>	<b>52.56</b>	<b>31.00</b>
<b>Core Goods</b>	<b>6.37</b>	<b>9.89</b>	<b>5.23</b>	<b>4.67</b>	<b>52.81</b>	<b>56.46</b>	<b>50.62</b>	<b>28.26</b>
Clothing and Footwear	8.02	8.60	6.64	5.35	39.74	49.12	46.87	29.93
Durable Goods (Excl. Gold)	3.89	9.61	3.69	3.98	60.70	61.11	46.89	22.77
Other Core Goods	9.17	11.31	6.76	5.30	50.42	55.25	59.17	36.60
<b>Alcoholic Beverages, Tobacco</b>	<b>9.28</b>	<b>5.42</b>	<b>14.84</b>	<b>15.16</b>	<b>71.26</b>	<b>62.98</b>	<b>67.93</b>	<b>52.35</b>
<b>Gold</b>	<b>10.84</b>	<b>16.07</b>	<b>2.41</b>	<b>11.22</b>	<b>70.59</b>	<b>84.78</b>	<b>59.22</b>	<b>46.54</b>
<b>2. Services</b>	<b>14.41</b>	<b>19.20</b>	<b>13.11</b>	<b>12.34</b>	<b>90.66</b>	<b>96.48</b>	<b>95.27</b>	<b>72.92</b>
Rent	20.63	26.09	18.68	20.36	108.58	123.95	123.64	117.43
Restaurants and Hotels	12.57	20.02	11.38	9.83	93.24	94.97	90.67	65.41
Transport	12.88	12.64	12.24	8.30	92.44	94.41	103.54	53.92
Communication	12.83	16.00	11.31	6.45	63.92	71.99	67.45	55.08
Other Services	13.62	17.65	12.12	12.26	85.20	90.41	89.06	68.49

Source: TURKSTAT.



**Annual food inflation, which fell below the headline inflation in April, maintained this level throughout the third quarter, but prices rose sharply in October due to fresh fruits and vegetables.** Annual inflation in food and non-alcoholic beverages decreased by 24.36 points to 43.72% in the third quarter. Annual inflation fell by 27.16 points in unprocessed food and 21.84 points in processed food (Chart 2.4.9). In seasonally adjusted terms, food inflation decelerated quarter-on-quarter. In this quarter, quarterly inflation in fresh fruits and vegetables weakened quite significantly (2.41%), while quarterly inflation in other food groups remained elevated with a limited increase (Table 2.4.1). In the third quarter, the rise in the prices of fresh fruits and vegetables was significantly below their historical averages, more notably in fruits (Chart 2.4.10). In the other food group, egg prices, which had posted a rise below their historical average in the second quarter, stood out with a high rate of increase in this quarter. Eggs were followed by the tea group due to price hikes by ÇAYKUR in July and September in response to the increase in fresh tea purchasing prices, while prices of confectionery and chocolates were other products that posted high rates of increase. White meat prices rose above their historical average due to fish prices, while red meat prices remained below their historical trend. Other products that remained below their historical price averages in the third quarter were cheese, other dairy products and potatoes (Chart 2.4.10). In October, unprocessed food prices posted a strong increase driven by fresh fruits and vegetables due to the seasonal field-greenhouse transition, while prices of foods excluding fresh fruits and vegetables posted a moderate increase.

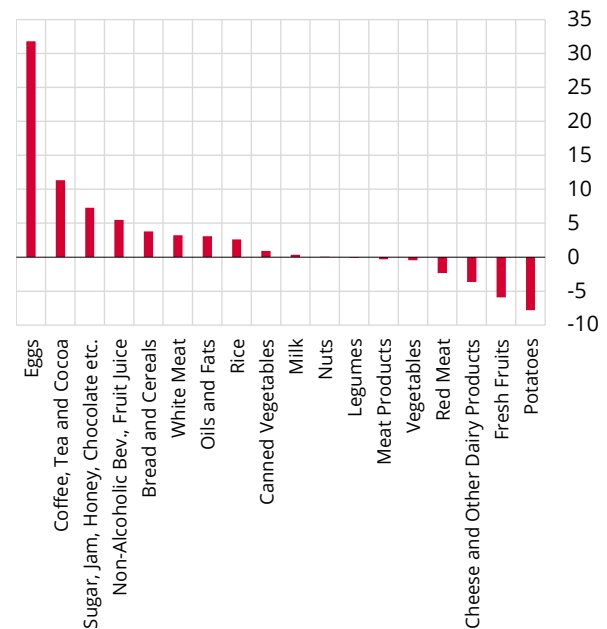
**Chart 2.4.9: Food Prices (Annual % Change)**



Source: TURKSTAT.

**Chart 2.4.10: Food Prices by Sub-Items\***

(2024Q3 % Deviation of Change from Historical Average, Ranked)



Source: CBRT, TURKSTAT.

\* On the basis of food sub-items, the difference between the 2024Q3 quarterly percentage change and the historical average (third quarter average of the 2012-2021 period).

**In the third quarter of the year, prices of alcoholic beverages and tobacco products increased by 15.16%.**

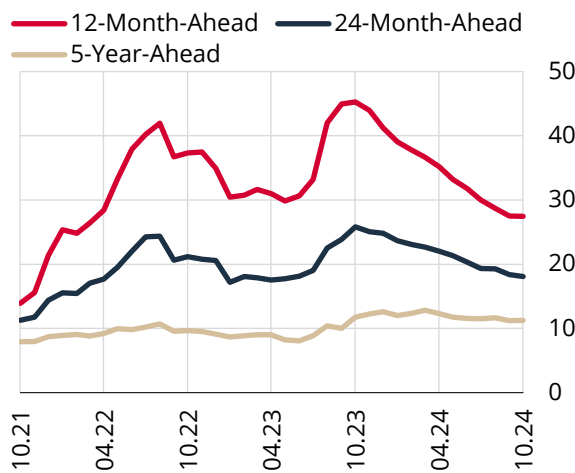
In July, lump-sum tax on alcohol and tobacco products was increased in proportion to the D-PPI. In September, firm-driven price hikes were observed in tobacco products. In the third quarter, prices of alcoholic beverages increased by 17.45%, while prices of tobacco products rose by 14.96%. Annual inflation in the alcoholic beverages and tobacco group dropped by 15.57 points quarter-on-quarter to 52.35%, and the contribution of the alcohol-tobacco group to annual inflation decreased by 0.54 points in this quarter.

**Drivers of Inflation**

**Inflation expectations mostly maintained their downtrend, yet remained above the projections in the previous Inflation Report.** According to the Survey of Market Participants in October, the 12-month-ahead inflation expectation decreased by 2.58 points to 27.44%, while the 24-month-ahead inflation expectation fell by 1.24 points to 18.08%. The five-year-ahead inflation expectation was revised downwards by 0.23

points to 11.27% (Chart 2.4.11). Meanwhile, inflation expectations for end-2024 and end-2025 increased slightly after July and stood at 44.11% and 25.64%, respectively, in October, remaining above the forecast range presented in the previous Inflation Report. Although inflation expectations for the end of the current year hovered above the forecasts, both the 12-month-ahead expectations and those for the end of next year indicate that the disinflation process will be maintained and the forecasts that function as intermediate targets will be achieved with a delay. An analysis of household and real sector expectations reveals divergences. Both the BTS, which measures the expectations of the real sector, and the Consumer Tendency Survey show a decline in inflation expectations, but the gaps with the Survey of Market Participants have narrowed slightly. When data from different sources are analyzed, it is observed that expectations continue to improve, albeit at a slower pace than envisaged. On a quarterly basis, the diffusion index posted a quarter-on-quarter decline (Chart 2.4.12). The services sector continued to push the diffusion index upwards in the third quarter. In addition, adjustments in tariffs in administered energy items had a negative impact on firms' price setting behavior and limited the decline in the diffusion index.

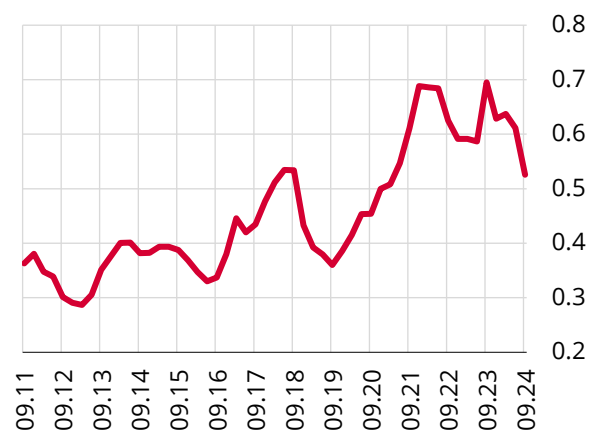
**Chart 2.4.11: Consumer Inflation Expectations\* (%)**



Source: CBRT.

\* Results of the CBRT Survey of Market Participants that polls real and financial sector representatives as well as professionals.

**Chart 2.4.12: CPI Diffusion Index\* (Seasonally Adjusted, Quarterly Average)**

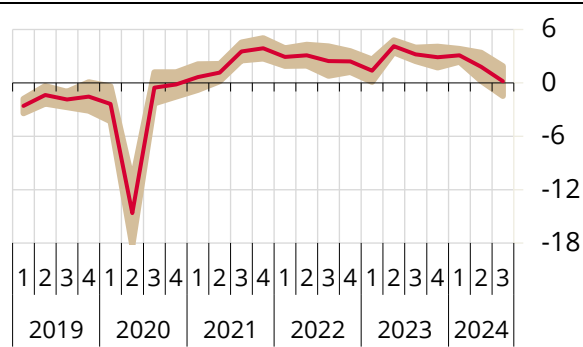


Source: CBRT, TURKSTAT.

\* Calculated as the ratio of the difference between the number of items with increasing prices and the number of items with decreasing prices to the total number of items.

**Aggregate demand continues to slow down, approaching levels supportive of disinflation.** The slowdown in aggregate demand conditions that started in the second quarter is expected to continue in the third quarter as well. While the baseline output gap estimation is significantly closer to the neutral level, the slightly wider uncertainty band indicates that the divergence between series calculated by using different methods and based on different data sources has increased (Chart 2.4.13). In line with this, industrial production and services production declined quarter-on-quarter in the third quarter (Chart 2.3.5), while demand indicators such as retail sales volume and credit card spending posted a slight quarterly increase (Chart 2.3.3). An analysis of real credit developments based on 13-week moving averages reveals that total credit use (adjusted for exchange rate effects) did not display a significant change in the last quarter in accordance with macroprudential measures (Chart 2.4.14). In the previous reporting period, the limited slowdown in corporate loans was largely offset by the moderate increase in retail loan use. While the rise in credit card expenditures stood out in retail loans, housing loans also displayed a partial pickup.

**Chart 2.4.13: Output Gap\* (%)**



Source: CBRT.

\* Displayed with 95% confidence interval, which is computed based on eight output gap indicators calculated with various methods.

**Chart 2.4.14: Total Credit Change\* (13-Week Average, FX-Adjusted, Real, Standardized Value)**

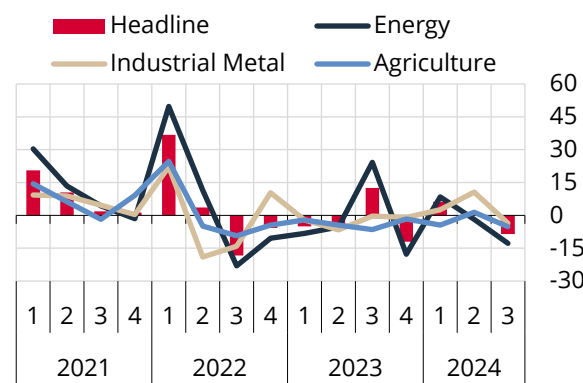


Source: CBRT.

\* Weekly credit changes adjusted for exchange rates are deflated by the CPI. The 13-week average is taken after weekly real changes are standardized. The mean and standard deviations of the series are calculated based on the 2006-2019 period.

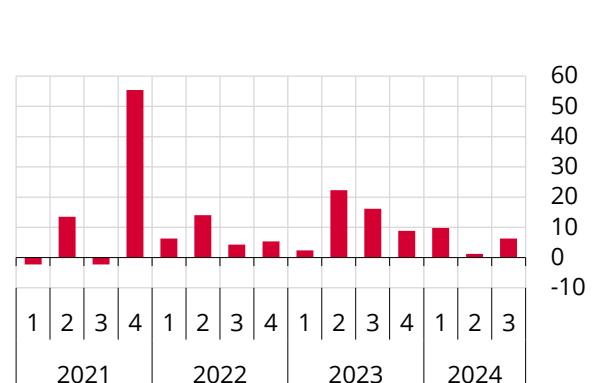
**In the third quarter of the year, global commodity prices declined, while the rise in the basket exchange rate strengthened slightly.** In August, commodity prices declined across all groups. In September, energy prices declined significantly, while industrial metal and agricultural prices increased. On a quarterly basis, the overall commodity index declined (Chart 2.4.15). On the other hand, in October, strong price increases were observed across all main groups, with the energy group displaying a more apparent increase. The currency basket, which remained almost flat in the second quarter, increased moderately in the third quarter (Chart 2.4.16). The depreciation in the Turkish lira played a role in the acceleration of price increases in the energy group as well as in durable goods items with high exchange rate sensitivity such as automobiles and white goods.

**Chart 2.4.15: Commodity Price Indices (Quarterly % Change)**



Source: Goldman Sachs.

**Chart 2.4.16: Currency Basket\* (Quarterly % Change)**



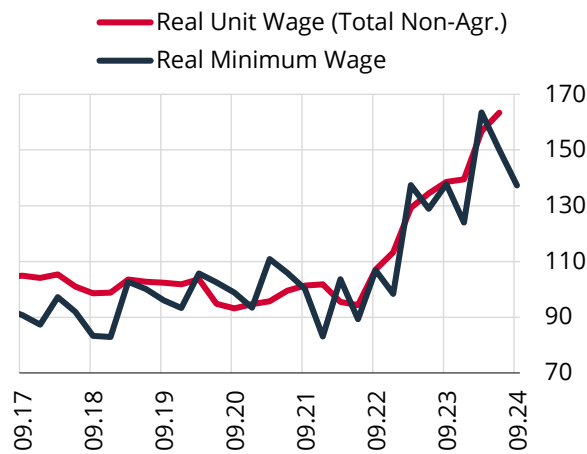
Source: CBRT.

\* USD and euro have equal weights. Calculations are based on the average exchange rate in the last month of the relevant quarter.

**The underlying producer inflation remained moderate.** In the second quarter, the rise in real unit wages was more limited compared to the first quarter (Chart 2.4.17). As the minimum wage, which is an important benchmark for wages across the economy, was raised only in January this year, real wages are expected to decline in the second half of the year, even if nominal wage increases continue. An analysis of transportation costs reveals that global and Chinese container indices declined in the third quarter, while dry cargo transportation indices fluctuated on a month-to-month basis but remained almost flat in the second half of the year. In the same period, commodity prices declined, while global supply chain

conditions edged up slightly and converged to their historical averages. In sum, global cost conditions remained favorable in the third quarter. On the other hand, the moderate rise in exchange rates in the third quarter slightly increased cost pressures in terms of Turkish lira. Reflecting these cost factors, both producer inflation and underlying manufacturing inflation remained moderate in the previous reporting period (Chart 2.4.18). The annualized underlying manufacturing inflation stood at 19.7% in October, significantly below the current annual producer inflation (32.2%).

**Chart 2.4.17: Real Unit Wage per Hour Worked\*** (Value Added, 2021=100, Seasonally Adjusted) **and Real Minimum Wage\*\*** (2021=100)



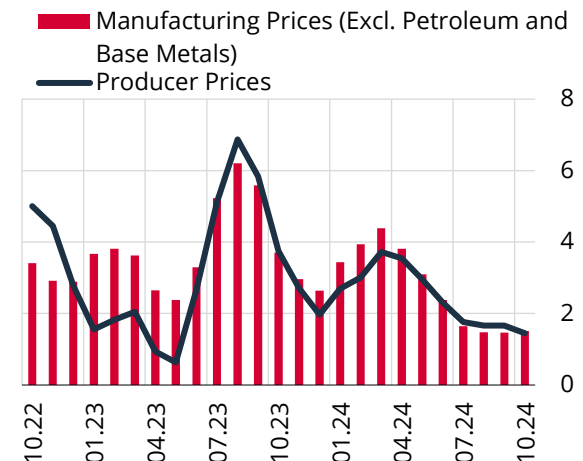
Source: CBRT, TURKSTAT.

\* Deflated by the CPI. Real wage per hour worked/productivity.

\*\* Deflated by the seasonally adjusted CPI.

Forecast is used for the 2024Q3 inflation data.

**Chart 2.4.18: Manufacturing Prices Excluding Petroleum and Base Metals** (Monthly % Change, Three-Month Moving Average)



Source: CBRT, TURKSTAT.

**The impact of taxes and administered items on headline inflation increased in the third quarter.** Tariffs for household electricity and natural gas were raised significantly in July and in August, respectively. The rise in commercial electricity tariffs and natural gas tariffs in first-tier industrial<sup>2</sup> and electricity producers had an indirect adverse impact on consumer inflation through the cost channel. Automatic tax revisions in fuel oil based on the D-PPI and the increases in electricity prices led to tariff hikes in various transportation services. The rise in bridge and highway tolls in August was another factor that had an adverse impact on inflation through the expectations channel, albeit with limited direct effects. With the start of the new academic year, student contribution fees and public dormitory fees were raised to compensate for the past high inflation. In the food group, tea prices were affected by ÇAYKUR's price hike in September. Prices of tobacco products, which posted price hikes in July and August due to the lump sum tax revision, increased in September due to the producer companies. Meanwhile, the tax structure of tobacco products was changed in September, and the fiscal multiplier was reduced by lowering the ad valorem SCT rate. As the lump-sum SCT amount was not raised as much as to compensate for the tax revenue loss stemming from the decrease in the ad valorem SCT rate, the overall impact limited firm-driven cost pressures. Unlike previous years, the declines in the fiscal multiplier had a smaller weakening impact on inflation inertia due to the high level of lump-sum SCT coupled with the fact that lump-sum amounts were increased in January and July by the same amount as the producer inflation in the previous six months. The revision in the reference euro rate for medicine prices in late October was another important development that took place in administered prices in the previous reporting period. Half of the impact of this adjustment was reflected in October inflation.

<sup>2</sup> Tier 1: Free consumers with an annual consumption of 300.000 sm<sup>3</sup> or less.

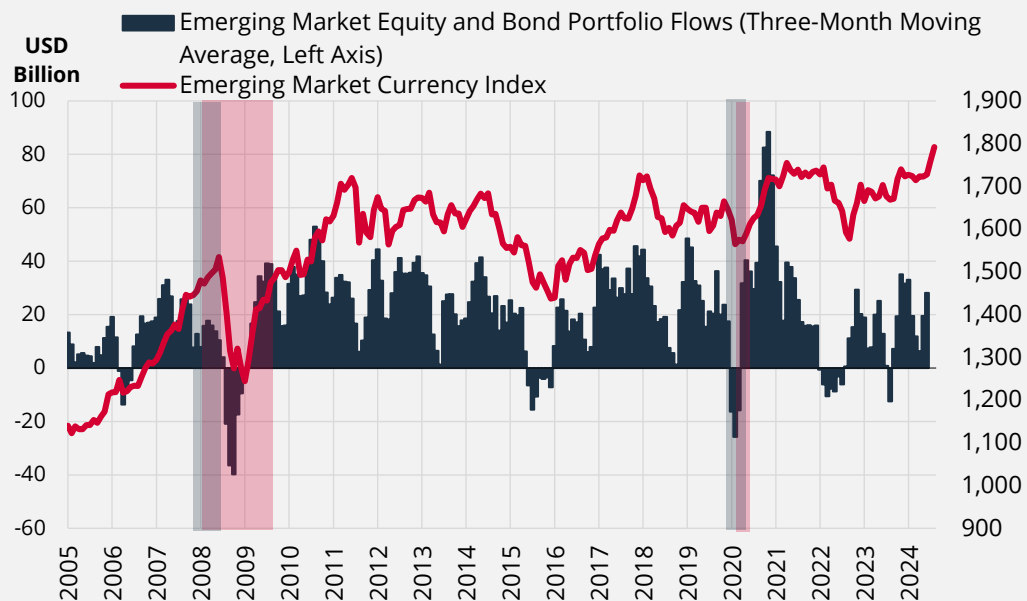
## Box 2.1

### Impact of Fed's Rate Cuts on Emerging Markets

As of the second half of 2024, some central banks of advanced economies had started to cut policy rates. The Fed also announced a rate cut of 50 basis points on September 18, 2024, signaling a notable shift in monetary policy. In the upcoming period, financial markets are pricing that interest rate cuts will continue, and the Fed will cut interest rates by approximately 120 basis points by the end of 2025.<sup>1</sup> The Fed's rate-cut cycles generally improve risk sentiment in global markets. Additionally, the widening interest rate differentials between the US and emerging markets alongside the potential for emerging market currencies to appreciate against the USD support investors' risk appetite. This may prompt investors to overweight emerging markets in their fund allocations. This box analyzes emerging market stock and bond market index changes, the course of portfolio flows and external financing conditions of emerging markets during Fed's rate-cut cycles.

The impact of Fed's rate-cut cycles on emerging markets may vary depending on the economic conditions at the start of the cycle and whether the US economy experienced a recession following the cuts (Chart 1). For example, despite the Fed's rate cuts during the 2008 Global Financial Crisis and the Covid-19 pandemic, fund flows to emerging markets and emerging market currencies performed poorly. On the other hand, in the low interest rate environment that lasted between 2010 and 2019, both fund flows to emerging markets and currencies remained strong.

**Chart 1: Fund Flows to Emerging Markets and Exchange Rate Index Developments\***



Source: Bloomberg, IIF, NBER.

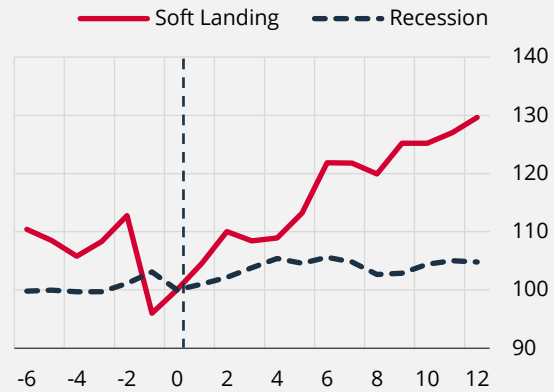
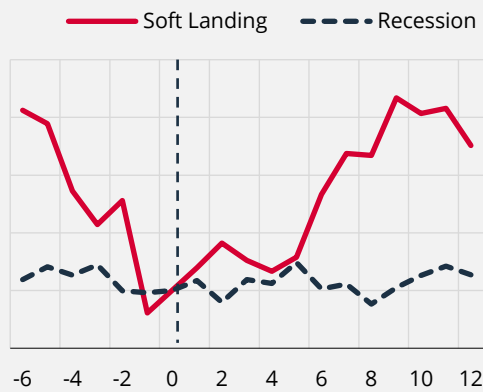
\* The red shaded areas indicate the recession periods between December 2007-June 2009 and February 2020-April 2020 in the US economy, while the gray shaded areas indicate the Fed's rate-cut periods. The exchange rate index is the MSCI Emerging Market Currency Index, which includes 24 countries. Information on the country composition is available at [www.msci.com/indexes/group/emerging-markets-indexes#unique-characteristics](https://www.msci.com/indexes/group/emerging-markets-indexes#unique-characteristics). A rise in the index indicates that emerging market currencies appreciated against the USD.

<sup>1</sup> As of November 2, 2024.

An analysis of stock and bond market index changes reveals that emerging market indices tend to respond positively when rate-cut cycles are followed by a soft landing.<sup>2</sup> For this analysis, the six Fed’s rate-cut cycles since 1995 have been divided into two groups: those resulting in recession (2001, 2007, 2019, 2020) and those resulting in a soft landing (1995 and 1998), and the periods up to six months before and one year after the first rate cut decision are analyzed. Accordingly, emerging market stock and bond market returns are, on average, higher during soft landing rate-cut cycles than during recessionary cycles. Additionally, equity markets tend to underperform compared to bond markets in rate-cut cycles that are followed by recessions (Charts 2 and 3).<sup>3</sup>

**Chart 2: Emerging Market Equity Markets\***

**Chart 3: Emerging Market Bond Markets\***



Source: Bloomberg, CBRT.

Source: Bloomberg, CBRT.

\* The MSCI Emerging Market Equity Index is used for equity markets (the list of countries is the same as in the currency index), while the J.P. Morgan Emerging Market Bond Index, which includes 47 countries, is used for bond markets. Country composition is available at [www.jpmorgan.com/insights/global-research/index-research/composition](http://www.jpmorgan.com/insights/global-research/index-research/composition). The first rate cut is denoted as 0, and the related indices are set equal to 100. For the soft-landing scenario, the index averages of 1995 and 1998; for the recession scenario, the index averages of the 2001, 2007, 2019, 2020 rate-cut cycles are used, and the period covering six months before and one year after the first rate cut is shown.

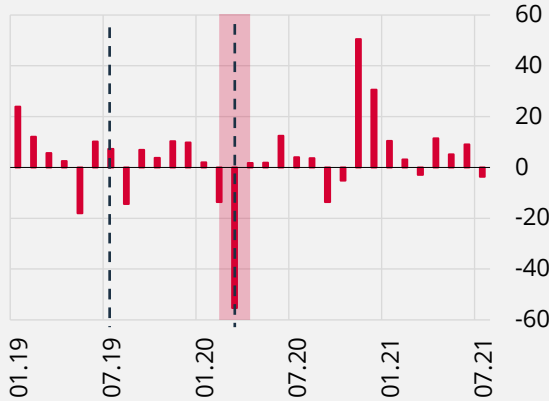
The 2019 and 2020 Fed’s rate-cut cycles are analyzed separately as they cover the period before and after the Covid-19 pandemic. While the July 2019 rate cut targeted a soft landing in an environment of balanced economic growth and declining inflation, the Fed cut rates by a total of 150 basis points in March 2020 amid suddenly deteriorating economic conditions due to the Covid-19 pandemic. In the pre-Covid-19 period, bond fund flows in particular were positive, while this trend weakened slightly after the Covid-19 recession. However, with the recession left behind, both equity and bond market fund inflows recovered (Charts 4 and 5).

<sup>2</sup> Soft landing refers to economic conditions in which economic growth slows to an acceptable level relative to inflation and unemployment.

<sup>3</sup> This analysis assumes that fund flows to emerging markets are mainly supported by the improvement in global risk sentiment. However, it should also be taken into account that different country-specific and period-specific conditions or geopolitical factors may lead to country-specific divergence in fund flows to emerging markets.

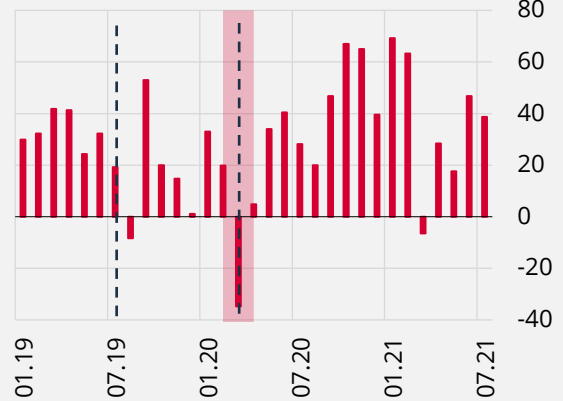


**Chart 4: Equity Market Fund Flows to Emerging Markets\* (USD Billion)**



Source: IIF.

**Chart 5: Bond Market Fund Flows to Emerging Markets\* (USD Billion)**

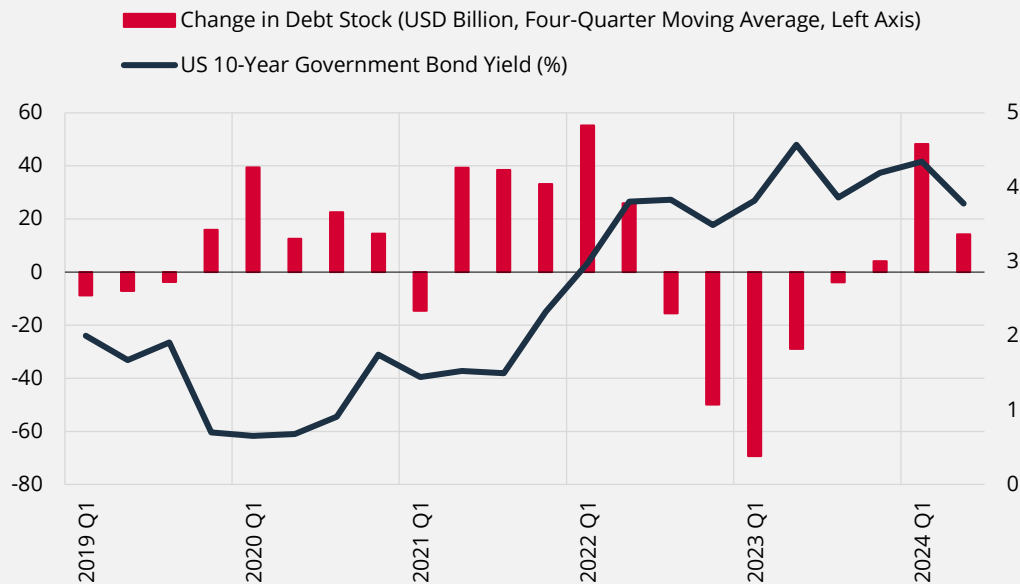


Source: IIF.

\* Fund flows to emerging market bond and equity markets six months before and two years after the Fed's first rate cut in July 2019 are shown. The shaded areas indicate the period of recession in the US, and the second dashed line indicates the Fed's rate cut in March 2020.

Since emerging markets have the majority of their foreign currency debt denominated in USD, Fed's rate-cut cycles can also have a significant impact on their foreign currency debt stock. For example, while US 10-year government bond yields declined during the pandemic, emerging economies took advantage of favorable financing costs and increased their foreign currency debt stock (Chart 6). On the other hand, interest rates rose in 2022-2023, while foreign currency debt stock fell.

**Chart 6: Change in Emerging Market Foreign Currency Debt Stock\***



Source: IIF, LSEG.

\* The data on debt changes are based on the four-quarter moving average of the changes in the USD-denominated borrowing of the financial sector and governments in emerging markets.

In sum, the impact of the Fed's rate-cut cycles on emerging markets may vary depending on the economic conditions in which the rate cuts take place. In this context, rate-cut cycles that result in a soft landing may support fund flows to emerging markets and improve external financing conditions, while rate-cut cycles followed by a recession may reduce the risk appetite for emerging market assets.

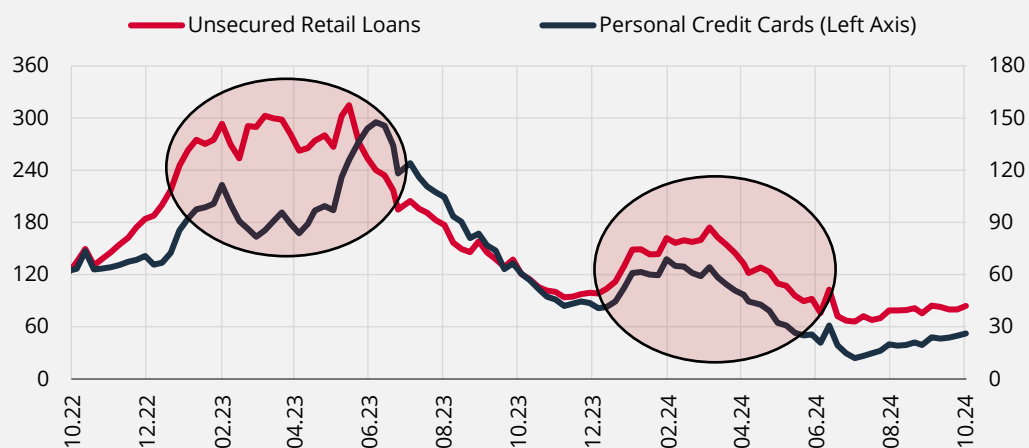
## Box 2.2

### The Relationship Between Retail Loan Utilization and Income

The current monetary policy stance plays a profound role in the disinflation process with the balancing of domestic demand, real appreciation of the Turkish lira and improvement in inflation expectations. In this process, individuals' loan utilization and consumption preferences are important for securing the anticipated disinflation. In cases where inflation expectations are not sufficiently anchored, individual decisions to bring consumption forward by obtaining credit is commonly observed. In addition, given that the hikes in individuals' income are also likely to enhance their debt repayment capacity, the elevation in income may direct individuals to demand more credit, leading to additional demand for consumption and inflationary pressure, especially in periods when expectations are disrupted. When financial conditions are tightened due to the implemented monetary policy and macroprudential measures as well as the anchoring of expectations, the additional credit demand created by increasing income can be relatively limited. In this Box, the relationship between income outlook and retail loan use is empirically examined by exploiting micro-level data, whilst the implications of the recent developments in terms of price stability and financial stability are evaluated.

As a general observation, unsecured retail loans (mainly personal credit cards and general-purpose loans) tend to be more sensitive to individuals' income conditions relative to other loans due to their short-term structure. During recent years that are characterized by higher inflation, the tendency to prefer more loan financing in response to the positive shifts in income has been periodically amplified, especially in periods when wage arrangements are made (at the beginning of the calendar year and in the following months). This behavior is reflected in the loan growth moments for the sector as a whole (Chart 1). Personal credit cards, which have a high share in the unsecured retail loan segment (45% as of 2021 and 53% in the last one-year period on average), also exhibit a similar pattern recently. On the other hand, despite the fact that the growth moments of unsecured retail loans in 2024 remain at lower levels relative to the growth realizations in 2023, the acceleration in loans following the sizeable wage increases in the first quarter of 2024 is notable. This acceleration, observed in a time interval when a tight monetary policy was implemented and retail loan interest rates were quite high compared to previous years, hints at the existence of a strong relationship between unsecured retail loans and income dynamics. In the rest of this Box, the dynamic structure of the income-credit relationship is tested with panel regressions applied in a recursive manner.

**Chart 1: 13-Week Growth of Unsecured Retail Loans and Personal Credit Cards**  
(Annualized, %)



Source: BRSA.

#### Data and Method

The sample included in the study covers the period of October 2023 - August 2024. In the first stage, the wage income information of individuals was obtained using the data of employees registered with the Social Security Institution (SSI). This database covers individuals working under contract in a

private enterprise and covered by the 4A insurance scheme. In this context, observations with fewer than 15 premium days recorded in a particular month were discarded. Moreover, observations corresponding to special status information such as internship, apprentice and suspended employment contracts were omitted, while individuals with a monthly gross income of less than TRY 6,000 were also excluded. In the second stage, information on retail loan use of individual debtors was compiled from the Credit Registration Bureau (CRB) database. While housing and vehicle loans provided with collateral were excluded from the analysis, personal credit cards and general-purpose loan balances were aggregated at the individual level. The income and credit information of the individuals included in the sample was combined through masked identifiers created separately at the individual level. The ultimate sample consists of approximately 142 million observations belonging to 17.7 million employees.

To measure the time-varying relationship between income and credit use, the following empirical specification is estimated by combining observations belonging to a specific quarter during the sample period:

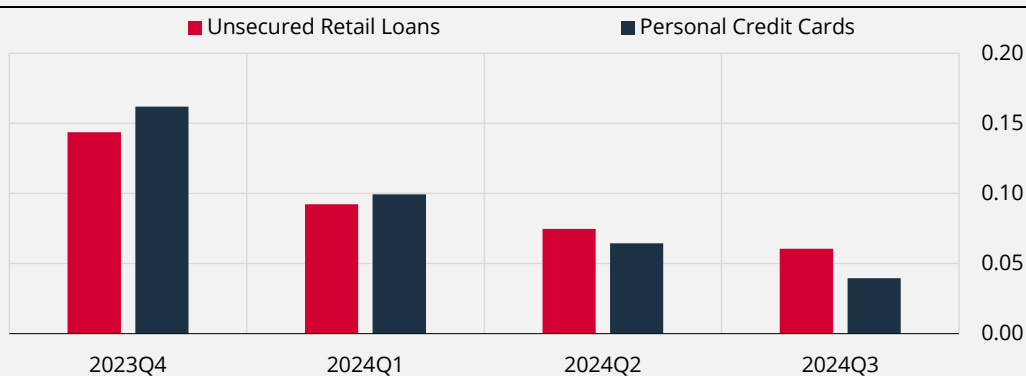
$$\ln(\text{Loan}_{it}) = \beta(\ln(\text{Income}_{it})) + \delta_i + \varepsilon_{it} \quad (1)$$

In Equation (1), the variable *Loan* represents the total amount of unsecured retail loan obtained by individuals.<sup>1</sup> The variable *Income* represents the gross wage income of borrowers in the relevant month. The income elasticity of credit use is quantified by the coefficient  $\beta$ , which is estimated iteratively for different periods. The model structure in Equation (1) also includes the individual fixed effects ( $\delta_i$ ).  $\varepsilon$  represents the stochastic error term.

### Empirical Findings on the Relationship between Retail Loans and Income

The model results based on Equation (1) for total unsecured retail loans are given in Chart 2. When these findings are examined, there is a positive and statistically significant correlation between credit use and income stream. On the other hand, this relationship exhibits heterogeneity over time. While the coefficient reflecting the income elasticity of credit use was at a considerably higher level in the last quarter of 2023, there has been a decrease in the income sensitivity of loans from the first quarter of 2024 onwards. This situation indicates that the potential interaction between income increases and credit utilization has declined in the recent period. In this context, with the weakening effect of income outlook on credit demand, it is expected that the repercussions of the upcoming wage adjustments in January 2025 on credit growth could be relatively limited compared to 2024. The sensitivity of financing through personal credit cards to the income outlook is also estimated with the model described in Equation (1) and the results are shown in Chart 2. The similarity between the periodic income elasticity coefficients for personal credit cards and total unsecured retail loans points to the driving role of personal credit cards in total unsecured retail loans. Similar to the general retail segment, the income elasticity coefficient of personal credit cards use has also been decreasing significantly in the recent period.

**Chart 2: Income Elasticity Coefficient of Unsecured Retail Loans and Personal Credit Cards\***



Source: Authors' calculations, CRB, SSI.

\* Analyses for the 2024Q3 period were carried out using observations from July and August.

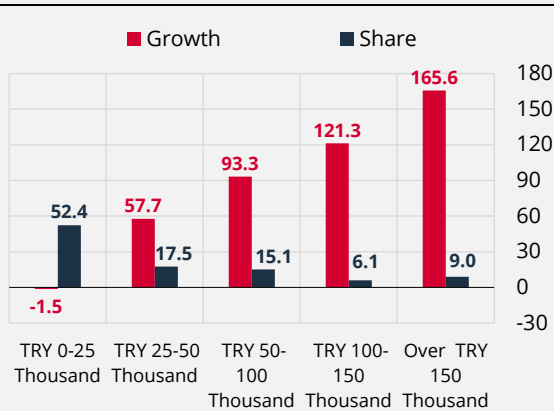
<sup>1</sup> Due to the skewed distribution of the variable representing the utilization of uncollateralized retail loans, we employed  $\ln(1+x)$  transformation for this variable in empirical estimations.

### The Relationship between Personal Credit Card Balance and Income

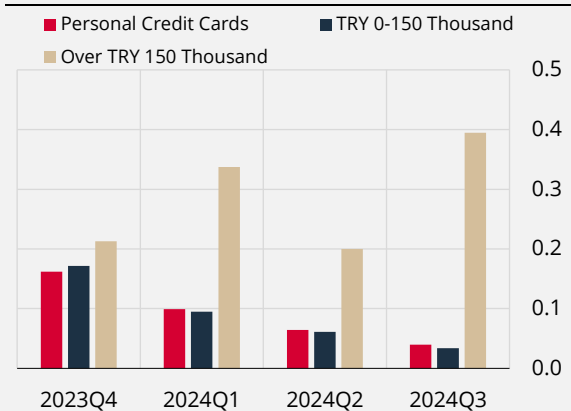
Recent trends in personal credit cards, which constitute the largest component of unsecured retail loans and have been the impetus for the retail loan growth in recent years, also contain relevant insight concerning the income-credit nexus. First, a heterogeneous trend is evident when personal credit card growth rates are examined at different categories of loan balance. While the annual median personal credit card growth of individuals with a debt balance between TRY 0-25 thousand (as of September 2024) hovers in negative territory, the annual personal credit cards growth has increased visibly among the larger balance categories as of September (Chart 3). The fact that the growth rate stands at 166% in the category of balances over TRY 150 thousand, which is well beyond the realized inflation rate, reveals the decisive effect of individuals in the high-balance category on personal credit card growth. Moreover, more than half of active personal credit card users consist of individuals with a lower level of debt with no significant balance change, and the number of individuals decreases as we move to higher-balance groups. Therefore, in order to better understand the association between income and personal credit card spending, this heterogeneity observed among personal credit card balance groups should be taken into account.

When the income elasticity of personal credit card utilization is estimated separately for the borrowers included in high- and low-balance categories, a positive correlation is observed for both groups throughout the sample period (Chart 4). However, while the elasticity coefficient of individuals monitored in the TRY 0-150 thousand range (the ones accounting for the majority of the total sample) is significantly consistent with the total personal credit cards, it is seen that the elasticity coefficient of the group with a balance of over TRY 150 thousand turns out to be higher and more volatile during the sample period. Additionally, while the credit elasticity of the income for individuals with a balance below TRY 150 thousand fades over time, the coefficient still stays at a higher level in the group above TRY 150 thousand as of the third quarter of 2024. In other words, as a result of income increases, personal credit card debt increases more in individuals in the high-balance category. In contrast, the effect of income increases on personal credit card spending is quite limited in the low-balance group. At this point, it is expected that the increase in the personal credit card contractual interest rate from 4.25% to 4.75% for cards with a period debt of over TRY 150 thousand, compared to the current reference rate, with the regulation in September will have an expected tightening effect on the personal credit card spending of individuals belonging to this group. Following the aforementioned regulation, it is anticipated that through the personal credit card channel the credit behavior of high-balance customers, amounting to half of the total personal credit card balance but 9% in terms of number of people, will decrease. It is thus expected that the reflection of income increases on credit in the relevant high-balance group will be more limited in the coming period.

**Chart 3: Annual Personal Credit Card Growth by Individuals' Balance Categories\* (%)**



**Chart 4: Income Elasticity Coefficient of Personal Credit Cards According to Balance Categories of Individuals\***



Source: Authors' calculations, CRB, SSI.

\* Growth values are the median annual growth of individuals in the relevant category. The share is the share of the total number of individuals in the relevant outstanding category as of September 2024. Individuals with no outstanding debts are not included. Analyses for the 2024Q3 period were carried out using observations from July and August.

## Concluding Remarks

This study examines the relationship between individuals' wage income and credit use at a micro level. As expected, the analyses covering the recent period indicate a positive relationship between income and the utilization of unsecured retail loans. Nevertheless, it is also found that this relationship is dynamic, and that the effects of income conditions on financial conditions via additional credit demand have decreased in the recent period. While the study also focuses on personal credit cards, an important financing tool for households, it is found that income elasticity in this group has decreased in recent quarters, except for the high-balance group. These findings imply that the secondary effects of wage adjustments on financial stability at the beginning of 2025 may occur at a lower level compared to the past. On the other hand, the relationship between personal credit card use and income of individuals in the high-balance group still remains strong. This finding underlines the importance of the recent tightening steps taken concerning financial consumers in this group by differentiating the maximum credit card interest rate in terms of preserving price stability and financial stability.

## Box 2.3

### Findings from Interviews with Firms

The CBRT holds face-to-face meetings with firms as part of the “Economic Lens to the Real Sector” (ELRS).<sup>1</sup> This box summarizes the findings from the interviews conducted in the July-September 2024 period.

***Economic activity continued to weaken in the third quarter of the year.***

While downward risks to domestic demand depending on the change in final consumer demand for durable goods were cited, exports in general maintained the current outlook. In terms of external demand, delayed recovery and competition conditions were highlighted as the main depressing factors. As a result of these developments, aggregate demand continued to weaken in the third quarter, while production was slower in comparison to aggregate demand. Along with this, developments in demand conditions continued to constrain price increase plans.

***In domestic sales, although a moderate recovery took place through the second half of the third quarter in some sectors, downward risks remained in October.***

Tight financial conditions and loss of purchasing power as a result of price increases in addition to lower-than-expected consumption of tourist and citizens residents abroad were cited as the main factors behind the slowdown in demand. Although the impact of these factors was expected to continue in the last quarter of the year, consumption might be supported by i) promotions planned by firms ii) motivation to purchase before the price increases of the new year. In business-to-business trade, the growing motivation to keep stocks low and customer selection as a result of the slowdown of domestic demand, plus the weak investment stance and tight financial conditions continued to depress activity.

In the **food and fast-moving consumer goods** sectors, the selectivity of consumers who closely follow promotions and discounts soared along with the effect of the deceleration of the price increases. While **apparel** sales slowed, the volume of sales in the upper segment remained relatively preserved. After a weak third quarter in white goods, it was stated that sales would be supported by intensive campaigns in the last quarter, and that furniture sales would also be stimulated with campaigns, although not as much as white goods. While the **automobile** sales were above expectations in the third quarter as a result of i) continued promotions, albeit at a decreasing rate, as the new safety regulation (GSR2) was postponed to August 31, ii) expected price increases following the regulation and iii) the pass-through to prices of the tax imposed on Chinese automobiles, a relatively weaker trend is expected in the last quarter. While **housing** sales accelerated in the last months of the third quarter, the suppressive impact of tight credit conditions continued.

***Exports in the third quarter of the year remained similar to previous quarter.***

Although there wasn't any significant change in the external demand conditions, costs in TL terms and geopolitical risks continued to be highlighted as factors that depress exports. It has been stated that fierce competition conditions have begun to limit companies' ability to create export opportunities through quality, fast delivery, access to new markets and product development. For the upcoming periods, the positive effects on external demand of the lowering of interest rates that started in developed countries are expected to become evident towards the middle of next year.

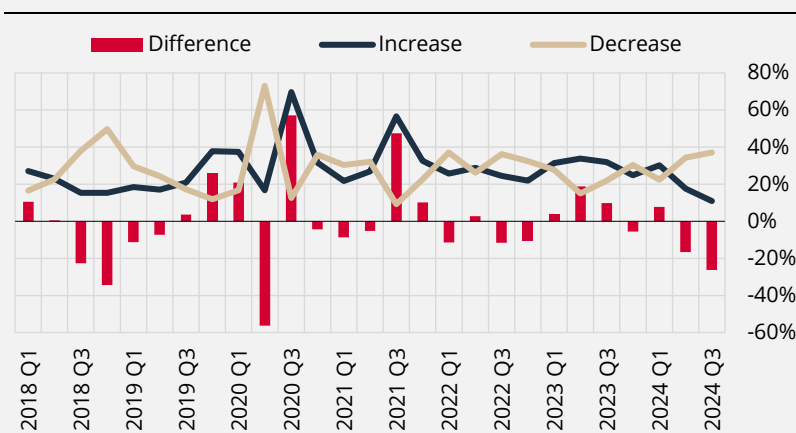
<sup>1</sup>The main purpose of this study is to obtain information on periodic production, domestic and international sales, investments, employment, credit conditions, cost and price developments in a timely manner, to closely monitor economic activity and to improve the communication between the CBRT and real sector representatives through meetings with firms in different sectors. The findings obtained from the semi-structured interviews constitute a high-quality and timely source of information for monetary policy decisions. Interviews are held with firms in the manufacturing industry, trade and services sectors within the framework of the sample created by considering their weight in the total economic activity at sectoral, regional and scale levels. The charts are produced by scoring the anecdotal information obtained from the firm interviews. This study includes evaluations and inferences based on interviews with firms and does not reflect the views of the CBRT. The information and findings obtained may differ from the official statistics, information and findings that will be published later.



The **textile and apparel** exports remained weak due to the ongoing effect of the cost pressures and competition. While the emphasis on the market and customer losses as well as pricing problems continued, firms with relatively higher value-added, a diverse and wide customer portfolio, a fast delivery advantage and those who could manage their profitability stood out positively from the sector. No significant change was observed in furniture exports. It has been stated that firms that continue to search for new customers and markets have not yet achieved their exports targets.

Export levels were maintained in the **white goods** sector, which could not increase the sales significantly due to weak demand in its main market, Europe. Pricing difficulties and current profitability levels put pressure on supplier firms. With high market diversification, the **machinery** sector preserved its usual exports level while exports of the **automotive industry** maintained the previous quarter's performance to a large extent. Among **automotive suppliers**, despite relatively flat demand conditions in the main markets, firms that introduce new products, have a relatively low labor cost share and produce efficiently with automation standing out more positively. However, increasing labor costs began to harden competition conditions. Discount requests continued due to the global demand outlook as well as competition conditions, additionally, probable customer and market losses were mentioned. In **tourism**, the demand outlook remained in line with seasonality and forecasts. 2024 targets for the number of visitors and revenue would be achieved but profitability may remain below expectations.

**Chart 1: Demand Perception of Firms\*** (Compared to the Previous Quarter, %)



Source: CBRT ELRS.

\* Demand perception shows the evaluation made by considering the current sales, orders and expectations of the firms. The difference series shows the difference between firms with a positive perception of demand and those with a negative perception of demand compared to the previous quarter and provides information on the prevalence of the change in demand perception, not the size of the change.

***In the third quarter of 2024, weakness in production became more pronounced depending on developments in the domestic demand.***

The slowdown in demand, tight financial conditions and uncertainties regarding the outlook for domestic demand continued to suppress activity of firms mainly producing for the domestic market. While exporting firms sought to preserve production, there was emphasis on the risks related to weak demand conditions in the main markets and competitiveness.

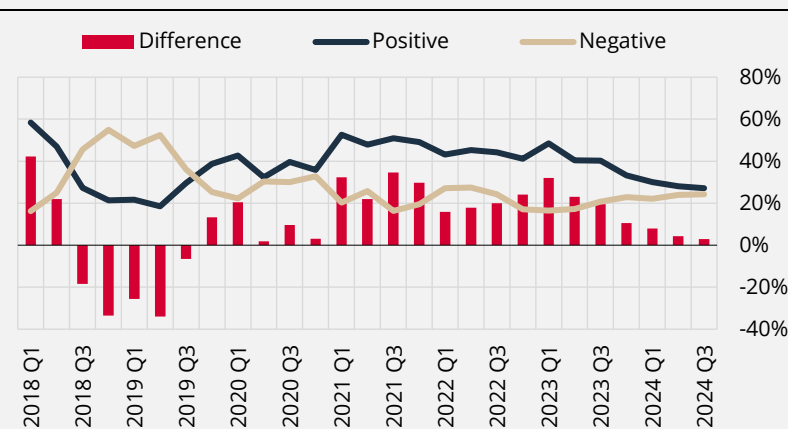
For the sectoral developments, in the **automotive industry** after a weak third quarter due to the production stoppages, a downward revision may be required in the last quarter's production plans according to domestic demand conditions. In **automotive suppliers**, demand was depressed due to loss of strength in the domestic automotive industry and difficulties in competing with Chinese firms in particular on the exports side. In **white goods**, weak domestic demand and the delay of the expected increase in the EU market suppressed production which in turn limited production of supplier firms. In the furniture, while domestic demand was met mainly with stocks, demand and competition conditions

in the exports depressed production. In **machinery and equipment**, the weak demand outlook and tight financial conditions of the domestic market continued to have impacts on investment expenditures and therefore on production. In the **textile and apparel sector**, production remained weak due to lack of recovery in the domestic and external demand in addition to competition conditions. In **construction material producers** and **basic metal**, the effects of weakness in the activity excluding the driving effect of public (TOKI) projects were reflected in production.

***The investment stance of firms continued to remain weak.***

In this period, firms that did not plan investment highlighted uncertainties regarding demand conditions and high financing costs among their reasons. In the current period, firms with strong demand in their field of activity, with strong equity capital or high ability to access investment financing through alternative channels continued to invest in capacity increases. Automation and modernization investments for cost reduction and productivity enhancement continued to be at the forefront of investment plans. Firms' interest in GES (Solar Energy Plants) investments continued in spite of a decline compared to the previous quarter.

**Chart 2: Investment Stance of Firms\* (Next 12 Months, %)**



Source: CBRT ELRS.

\* Investment stance shows the evaluation made by considering the investment appetite of the firms for the next 12 months. The difference series shows the difference between the number of firms with a positive investment stance and firms with a negative investment stance and provides information on the prevalence of the change in investment stance, not the size of the change.

On a sectoral basis, the investment stance was relatively positive in the **food, chemicals, fabrication metal, machinery-equipment and automotive suppliers'** sectors of manufacturing industry. Idle capacity in the **textile** sector, decreasing exports due to unpredictability of demand, production costs and pricing in the **apparel** sector affected investment stance negatively. In the **construction** sector, while land prices continued to depress investment, specifically firms with strong capital were seeking buying opportunities. In the **services and trade** sector that had a more negative stance relative to manufacturing industry for this period, weak domestic demand outlook suppressed investment.

**Weakness in production and investment outlook were mirrored in employment plans.**

Although the majority of firms still had the tendency to maintain their current employment levels, the prevalence of firms planning an increase in employment declined. The weak demand outlook as well as firms' automation investments to reduce employment demand caused a fall in hiring plans.

***In the third quarter of the year firms continued to emphasize less about financing needs.***

The emphasis on financing needs mainly depending on working capital decreased as a result of the moderate change in costs due to the declining commodity prices throughout the quarter in general. That said, the emphasis on financing needs depending on decreasing cash flows was noteworthy. Specifically, cash flow problems arising from extension of collection periods increased working capital needs. On the other hand, the emphasis on financing needs arising from investments continued to decline due to weakness in the investment stance.

Although credit conditions in the third quarter remained in general similar to the previous quarter, the gradual loosening in the interest-rate offers continued. The lending appetite of banks improved relatively although there were differences within banks and this was reflected on maturities of working capital credits. Even though high TL loan costs continued to suppress credit demand, firms continued to prioritize using equity capital. On the other hand, firms' tendency towards FX loans remained in the third quarter as well.

Conditions in the business-to-business trade became more difficult. It is cited that there were firms asking for cash as well as prepayment or advance payment in the supply channel and avoiding use of credit and that there were some firms that sought to extend payment maturities in order to hold cash. As the tendency to postpone payments prevailed, the receivable-debt maturity mismatch continued to rise. Customer selectivity and use of direct debiting system, credit card, letter of guarantee and/or credit insurance increased in order to minimize risk of collection.

***In the third quarter of the year, cost pressure on firms was similar to the previous quarter while the rate of firms planning price increases declined.***

Looking at the changes in cost factors compared to the previous quarter, firms' emphasis on labor and energy costs rose while the emphasis on input costs excluding the exchange rate effect, costs related to the exchange rate, and financing costs declined.

Movements in input costs, current demand conditions and high competition were cited as the most important factors limiting price increases. Firms stated that demand conditions did not allow cost increases to be passed fully through to prices. It was noted that firms postponed price increase plans. Furthermore, as a traditional promotion period, the last quarter also contributed to fall in the price increase plans.

## Box 2.4

### Fiscal Stance in the MTP

The MTP covering the period 2025-2027 was published on September 5, 2024. The MTP states that all steps will be taken decisively to maintain and strengthen fiscal discipline as an anchor that increases confidence and stability in the economy while meeting the necessary needs, especially earthquake-related expenditures, in the next three years. Moreover, it states that fiscal and revenue policies will continue to be implemented in a way that supports monetary policy. The MTP also states that administered prices will be increased in line with inflation forecasts and targets in order to ensure price stability.

The MTP is based on a framework in which the budget balance and primary budget balance indicators will improve, and the debt stock-to-GDP ratio will be gradually reduced (Table 1). While the expenditure-to-GDP ratio was around 25% in 2023 and 2024, when earthquake expenditures occupied a significant share in the budget, it is expected to fall below 24% during the MTP period. In this period, primary expenditures are anticipated to decline gradually, while tax revenues are expected to remain unchanged. The fact that fiscal adjustments will be achieved by reducing primary expenditures instead of tax increases is important for the coordination of monetary and fiscal policies in the fight against inflation.

**Table 1: Central Government Budget (% GDP)**

	2023	2024 (RE)	2025 (P)	2026 (P)	2027 (P)
<b>Expenditures</b>	<b>24.8</b>	<b>25.4</b>	<b>23.9</b>	<b>23.7</b>	<b>23.5</b>
Primary Expenditures	22.3	22.4	20.8	20.6	20.4
Interest Payments	2.5	2.9	3.2	3.1	3.0
<b>Revenues</b>	<b>19.6</b>	<b>20.5</b>	<b>20.8</b>	<b>20.9</b>	<b>21.0</b>
General Budget Tax Revenues	17.0	17.2	18.1	18.1	18.1
Other Revenues	2.7	3.3	2.7	2.8	2.9
<b>Budget Balance</b>	<b>-5.2</b>	<b>-4.9</b>	<b>-3.1</b>	<b>-2.8</b>	<b>-2.5</b>
<b>Budget Balance* (Excl. Earthquake Expenditures)</b>	<b>-1.6</b>	<b>-2.5</b>	<b>-2.2</b>	<b>-2.1</b>	<b>-1.8</b>
<b>Primary Balance</b>	<b>-2.7</b>	<b>-1.9</b>	<b>0.0</b>	<b>0.3</b>	<b>0.6</b>
<b>EU-Defined General Government Debt Stock</b>	<b>29.3</b>	<b>25.6</b>	<b>25.3</b>	<b>25.1</b>	<b>24.8</b>

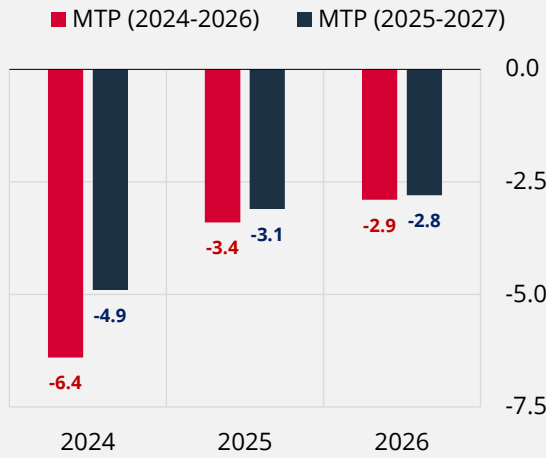
Source: Authors' calculations, MTP (2025-2027).

\*\* Calculated by the authors using the earthquake allowances mentioned in the MTP (2025-2027). RE and P stand for realization estimate and program, respectively.

For 2024, the budget deficit-to-GDP ratio was revised downwards by 1.5 percentage points compared to the target given in the previous MTP and set at 4.9% (Chart 1). The aforementioned improvement is expenditure-driven, and the expenditures-to-GDP ratio is projected to decrease by 1.5 percentage points, while the revenues-to-GDP ratio is projected to remain the same (Chart 2). In other words, the improvement in the budget deficit-to-GDP ratio is envisaged to be realized through the decrease in budget expenditures-to-GDP ratio.

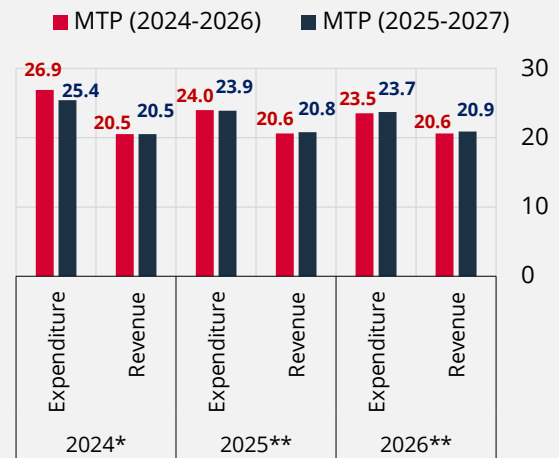
The budget deficit-to-GDP ratio, which was given as 3.1% in 2025, is aimed to decrease below 3% in 2026 and 2027 (Table 1). In 2025, the primary balance is targeted to zero, followed by a primary surplus in the next two years. In parallel with the improvement in budget balances, the debt stock-to-GDP ratio is expected to decrease throughout the MTP period, from 29.3% in 2023 to below 25% in 2027.

**Chart 1: Central Government Budget Balance Targets (% GDP)**



Source: MTP (2024-2026), MTP (2025-2027).

**Chart 2: Central Government Expenditure and Revenue Targets (% GDP)**



Source: MTP (2024-2026), MTP (2025-2027).

\* Target for MTP (2024-2026), realization estimate for MTP (2025-2027).

\*\* Target for MTP (2024-2026) and MTP (2025-2027).

The amount of earthquake expenditures plays an important role in shaping budget balances. The ratio of earthquake expenditures to GDP was 3.6 and 2.4% in 2023 and 2024, respectively, when earthquake-related impacts were felt the most, and is expected to remain below 1% in the following three years. When earthquake expenditures are included, the budget deficit-to-GDP ratio is estimated to decline from 5.2% in 2023 to 4.9% in 2024. When earthquake expenditures are excluded, the budget deficit-to-GDP ratio in 2024, unlike the situation when earthquake expenditures are included, increases slightly compared to 2023 (from 1.6% to 2.5%, Table 1). In the following three years, it gradually decreases, similar to the figures when earthquake expenditures are included.

For the disinflation process to be successful, it is important that monetary and fiscal policies are managed in coordination. The fact that the expected improvement in budget balances in the 2025-2027 period is programmed in a framework where there is a decrease in primary expenditures rather than an increase in tax revenues indicates that fiscal policy will be supportive of the fight against inflation.

## Box 2.5

### Evaluation of Underlying Inflation Indicators

Consumer inflation is exposed to different types of shocks and can be volatile. In this framework, the headline figure may sometimes be misleading in terms of providing accurate information on the development of inflation. Policymakers are interested in the permanent part of inflation that is not affected by temporary shocks, seasonal effects and fluctuations, in other words, the “*underlying inflation*”. This is related to the fact that in the medium term, the effects of temporary shocks and fluctuations disappear, and therefore, it is the “*permanent part of inflation*” that determines the medium-term course of headline inflation. Furthermore, by excluding items that are relatively beyond the scope of monetary policy, the underlying inflation can assist in focusing on items that monetary policy can affect. There is no single and precise way to measure the underlying inflation. For this reason, central banks use a variety of indicators based on different methods. This Box provides a brief overview of the indicators of underlying inflation monitored by the CBRT and their performance and summarizes the recent course for underlying inflation and the dispersion of price increases.

#### a. Alternative Indicators to Calculate Underlying Inflation

Underlying inflation can be calculated by different methods. In line with the literature, the indicators used at the CBRT can be categorized under three main groups: i) *permanent exclusion-based* methods, ii) *temporary exclusion-based* methods on the basis of the distribution of price changes and iii) *model-based* methods.

Permanent exclusion methods are based on the permanent exclusion of certain goods and services (such as food, energy) from the price index. This is the most commonly used method. The aim of this method is to exclude some goods and services that are subject to temporary supply shocks, such as unprocessed food, or that are relatively outside the monetary policy domain, such as energy. Thus, the aim is to extract the permanent part of the index, which exhibits low volatility and where the impact of monetary policy can be more pronounced. The main advantage of this method is that the excluded items are predetermined, so the scope does not change over time, and the index can easily be calculated and understood by the public. However, due to the exclusion of only certain items and the static nature of the indicator, this method may also exclude signals regarding the underlying inflation from time to time. The most commonly used indicators are the B index, which excludes unprocessed food, energy, alcohol-tobacco and gold from the CPI, and the C index, which excludes food, energy, alcohol-tobacco and gold from the CPI.

The second group of methods are statistical methods based on the distribution of monthly price changes of the items that make up the CPI. The approaches in this group are dynamic, and the goods and services excluded from the index may change from month to month. The most commonly used indicators in this group are the V\_1, which is obtained by periodically excluding items with excessive volatility, SATRIM (seasonally adjusted trimmed monthly inflation) and median inflation indicators.<sup>1</sup> These indicators are calculated based on the seasonally adjusted monthly changes in the five-digit price indices in the CPI.<sup>2</sup> The V\_1 indicator, which excludes volatile sub-items, is obtained by excluding goods and services that fall outside the one standard deviation range of the average of monthly price changes for each month from the index for that month. SATRIM is calculated by symmetrically trimming a certain percentage (currently 16% at each end) from the upper and lower ends of the distribution of monthly price changes in each month. Median inflation is the median value of monthly price changes.

The last group includes model-based methods. Although these methods are also dynamic, they aim to separate the permanent and transitory part of inflation through models with a large data set, thus revealing the general trend in prices.

<sup>1</sup> For detailed information, see Atuk and Özmen (2009a) and Atuk and Özmen (2009b).

<sup>2</sup> As of 2024, there are 143 sub-items in the CPI at fiv3-digit level.

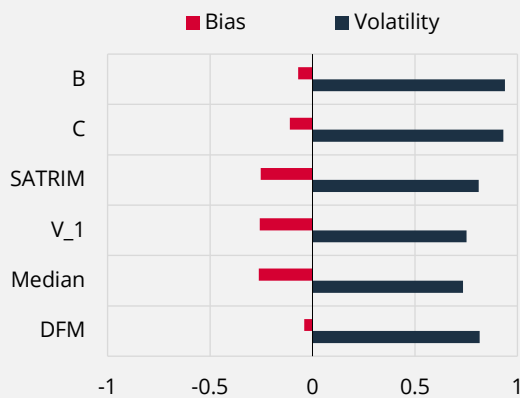


However, observations are subject to backward revision as model forecasts are updated with the release of new data. The CBRT uses a DFM indicator. Dynamic factor models are based on the view that the common dynamics of a large number of time series variables are driven by a relatively small number of unobservable factors, which in turn change dynamically over time. This method aims to reduce the number of variables by aggregating the high correlation among variables into one category (the first factor) and the remaining variation into another category (the second factor orthogonal to the first factor; third and higher factors can be reached in the same way) that explains most of the variation. In other words, this method is used as a dimension reduction technique. Thus, it is possible to capture common movements in inflation without excluding a particular sub-item. Similar to other alternative indicators, the DFM indicator uses seasonally adjusted monthly price changes at the five-digit level of the CPI, and it follows the DFM approach of Doz et al. (2011).

**b. Performance Evaluation of Indicators**

There are some properties that the underlying inflation indicators should fulfill. These properties are (i) being an unbiased predictor of headline inflation, (ii) being less volatile than headline inflation and (iii) being able to predict (out-of-sample) inflation. In this section, we examine the extent to which these indicators fulfill these properties.<sup>3</sup> An analysis of the bias and relative volatility of the indicators monitored by the CBRT reveals that the lowest bias is observed in the DFM, B and C indicators (Chart 1). The long-run average of other indicators is slightly lower than the headline inflation. In other words, these indicators are somewhat biased. As expected, indicators for underlying inflation are less volatile than headline inflation (Chart 1). The lowest volatility is in median inflation, followed by the V\_1 indicator, which by definition excludes volatile items.

**Chart 1: Bias and Volatility of Underlying Inflation Indicators\***



Source: Authors' calculations.  
 \* The bias is the average contemporaneous difference vis-à-vis headline inflation. Volatility is the standard deviation of each measure divided by the standard deviation of headline inflation. Sample period is 2005:02-2024:09.

**Chart 2: Forecasting Performance of Underlying Inflation Indicators\***

	12-Month RRMSFE (2006:04-2017:12)	12-Month RRMSFE (2006:04-2024:09)
<b>B</b>	0.83	0.87
<b>C</b>	0.80	0.85
<b>SATRIM</b>	0.76	0.85
<b>V_1</b>	0.75	0.77
<b>Median</b>	0.78	0.71
<b>DFM</b>	0.69	0.75

Source: Authors' calculations.  
 \* 12-Month RRMSFE is calculated as the root mean squared forecast errors (RMSFE) of the seasonally adjusted last three-month annualized values of each indicator relative to 12-month-ahead annual headline inflation divided by the RMSFE of headline inflation.

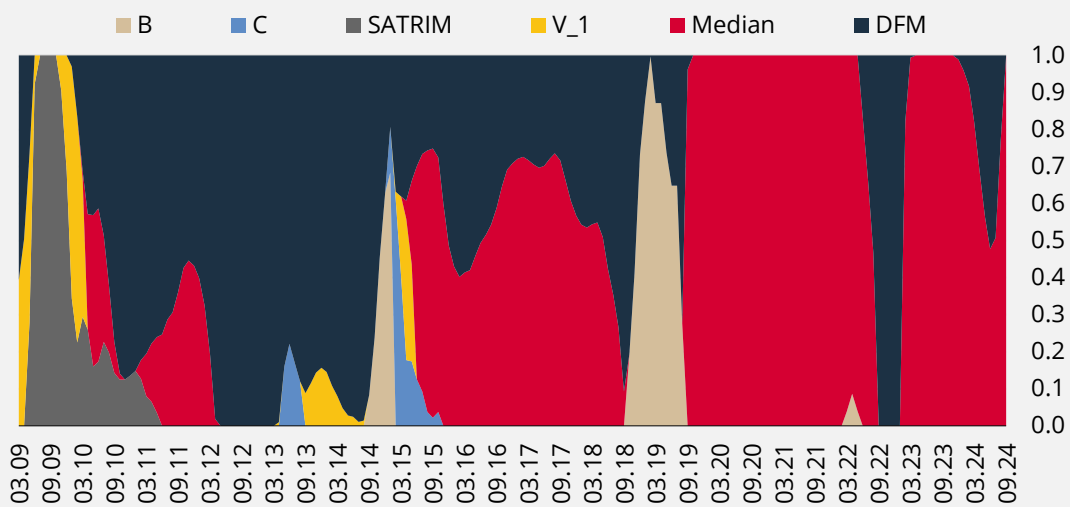
In order to evaluate the ability of indicators to signal the course of consumer inflation one year ahead, the predictive power of the last three-month (annualized) averages of the indicators for annual consumer inflation over the next 12 months was analyzed (Chart 2). This analysis was conducted for two different periods: (i) for the whole sample, and (ii) when consumer inflation was relatively mild. In the low-inflation period, the model-based indicator and distributional indicators (SATRIM, V\_1 and median) perform better than B and C in predicting consumer inflation. Considering the whole sample, the indicator that excludes volatile items (V\_1), the indicator based on the DFM and median inflation in particular stand out. Despite their low bias, indicators B and C have lower out-of-sample predictive

<sup>3</sup> The analysis is based on the approach in Bańbura et al. (2023).

power. In the analysis, median inflation stands out compared to the others in terms of both low volatility and high predictive power.<sup>4</sup>

In order to assess the change in the forecasting power of the indicators over time, the forecast combination that minimizes the RMSFE value one year later is analyzed. In this analysis, the optimal weights of the underlying inflation indicators that minimize the forecast error in a three-year sliding window were calculated (Chart 3). According to the findings, although the forecasting performance of indicators changes over time, the DFM indicator and median inflation tend to perform better. In particular, median inflation stands out among the underlying inflation indicators with its forecasting performance in recent years (Chart 3). The forecasting performance of other indicators, on the other hand, is cyclical. Another implication of the analysis is that indicators based on permanent exclusion such as B and C can exist in the optimal forecasting combination in a limited period, in other words, they perform poorly compared to other indicators in predicting 12-month-ahead consumer inflation throughout the sample.

**Chart 3: Underlying Inflation Measures in an Optimal Forecast Combination**  
(Weight Assigned to Minimize the 12-Monh-Ahead RMSFE over A Three-Year Rolling)



Source: Authors' calculations.

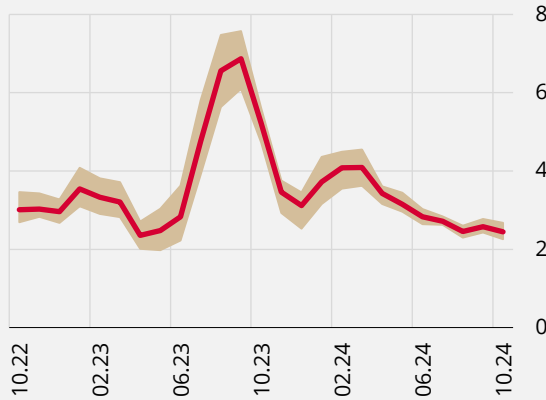
### c. Observations on the Recent Course of Underlying Inflation and Pricing Behavior

The analyses point out that the performance of indicators varies according to different criteria (although the median inflation indicator stands out) and that it is important to monitor different indicators together to identify the persistent part of inflation. Accordingly, an analysis of the six indicators monitored by the CBRT as a whole reveals that the underlying inflation declined from 2.8% at the end of the previous quarter to 2.6% in the third quarter and to 2.3% in October (Chart 4).

In the third quarter, there was some divergence between exclusion-based indicators such as B and C and other indicators. In August, exclusion-based indicators signaled a flat course in the underlying inflation, while others signaled a slowdown. This divergence was driven by the periodic high price increases in groups with a pronounced tendency to time-dependent price determination, such as education and transportation services, which experienced the back-to-school effect. When there are periodic high price increases in a small number of items with relatively high weights, indicators such as B and C, which are based on permanent exclusion from the index, are more adversely affected, and indicators based on sub-item distribution may give a healthier picture of the underlying inflation during such periods.

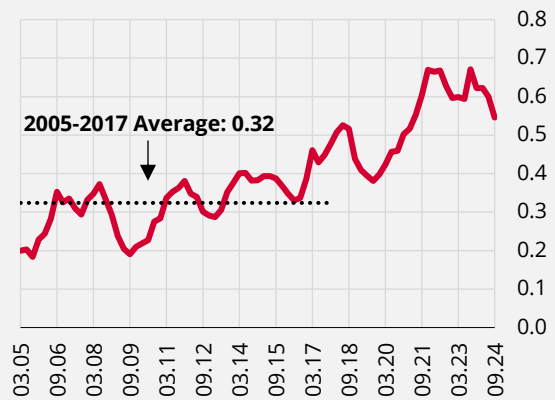
<sup>4</sup> In addition, Atuk and Özmen (2009a) also examined the performance of the underlying inflation indicators in tracking the inflation trend (based on 18-, 24- and 36-month central averages of CPI). Based on this approach, V\_1, median and DFM indicators perform better. Among these indicators, the median inflation indicator has the best performance.

**Chart 4: Underlying Inflation Indicators\***  
(Seasonally Adjusted, Monthly % Change, Three-Month Average)



Source: CBRT.  
\* Seasonally adjusted average of six different indicators: B, C, SATRIM, median inflation, DFM indicator and V\_1 indicator. Shaded area shows the maximum and minimum range.

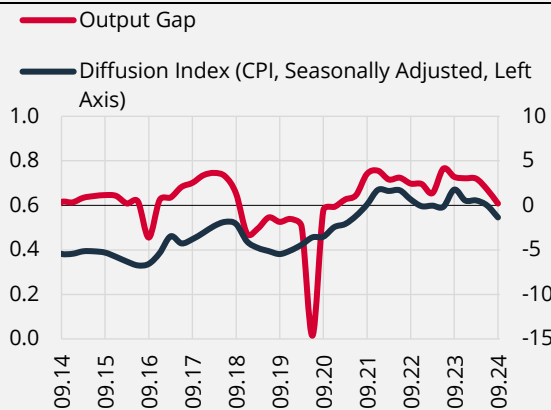
**Chart 5: CPI Diffusion Index\***  
(Seasonally Adjusted, Quarterly Average)



Source: CBRT.  
\* Diffusion index is calculated as the ratio of the number of items with increasing prices minus the number of items with decreasing prices to total number of items within a given month and then adjusted for seasonal effects.

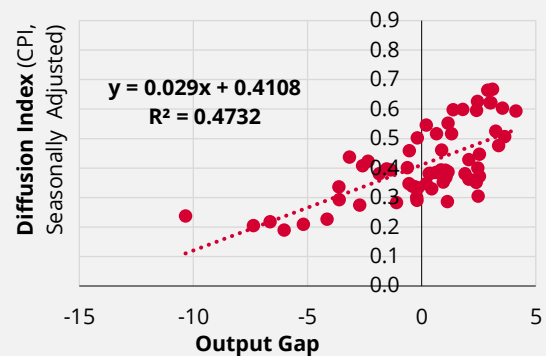
For the course of pricing behavior, the extent of price increases is as important as the size of price increases, and in this regard, besides the frequencies of price increases and decreases in micro data, diffusion indices are also used. The *diffusion index*, which is an indicator of how widespread price increases are, is calculated as the ratio of the difference between the number of items with rising prices and the number of items with falling prices to the total number of items. The seasonally adjusted diffusion index reached its highest value in the last quarter of 2021 and the following two quarters, and after reaching a similarly high level in the third quarter of 2023, when multiple shocks occurred simultaneously, it entered a steady downtrend with the monetary tightening (Chart 5). This was driven by the decline in the share of items with rising prices as well as the increase in the share of items with falling prices, which are subcomponents of the diffusion index. On the other hand, the current levels are significantly above past averages.

**Chart 6: Demand Conditions and the Diffusion of Price Increases in CPI**



Source: CBRT.

**Chart 7: Scatter Plot of Output Gap and CPI Diffusion Index\***



Source: CBRT.  
\* Sample Period: 2008Q2-2024Q3. 2020Q2 (Covid-19 period), 2021Q4 and 2023Q3 quarters, where supply-side effects are significant, are excluded from the sample.

Demand conditions affect not only the magnitude of the price increase but also its diffusion (Chart 6). In fact, there is a significant positive relationship between the output gap and the diffusion index (Chart 7). In cooling periods when the output gap takes negative values, the general diffusion of consumer price increases also decreases. In the current period, there is a slowdown in the diffusion index with the normalization in demand conditions (Chart 6). Analyses suggest that the diffusion of price increases will further weaken in the upcoming period as the output gap turns negative.

In sum, there is no precise way to define and measure underlying inflation. Therefore, different approaches may be used. The performance of indicators may vary according to different criteria and periods. By its nature, each indicator may respond differently to different economic conditions. Therefore, in order to make an accurate assessment of the medium-term course of inflation, it is important to monitor multiple indicators constructed by alternative methods together.

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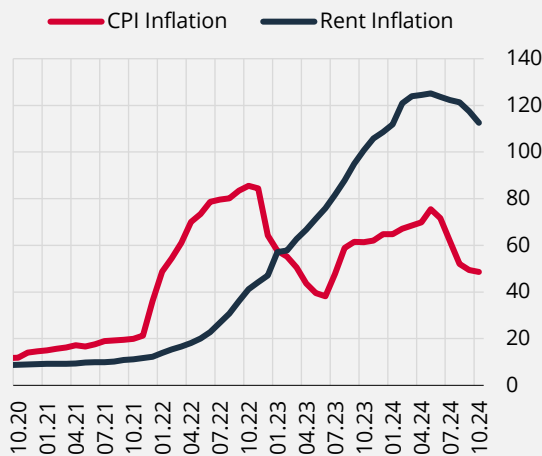
Doz, C., Giannone, D., & Reichlin, L. (2011). A Two-Step Estimator for Large Approximate Dynamic Factor Models Based on Kalman Filtering. *Journal of Econometrics*, 164(1), 188-205.

## Box 2.6

### Rent Inflation and RPS Leading Indicator

The rent index, which is calculated based on actual rents paid by tenants and holds a 5.06% weight in the CPI for 2024, has been higher than the CPI since the beginning of 2023 (Chart 1). The rental component has recorded the highest increase among main categories in CPI, thereby limiting the decline in inflation. In this Box, the structure and recent trajectory of rent inflation will be analyzed, the RPS, one of the leading indicators, will be presented and the course of rent inflation will be evaluated taking this indicator into consideration.

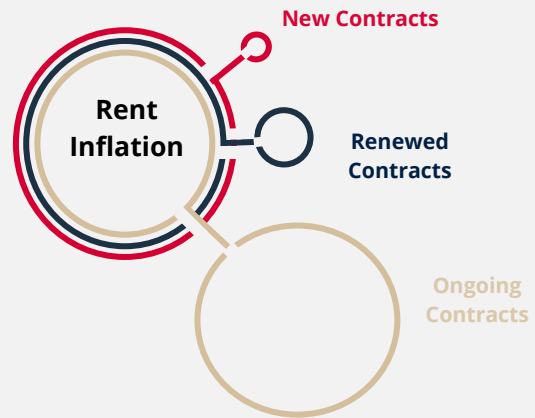
**Chart 1: CPI and Rent Inflation\***



Source: TURKSTAT.

\* CPI inflation and rent inflation represent the annual percentage changes in the CPI and in its sub-index for rent.

**Figure 1: Composition of Rent Inflation\***



Source: CBRT, TURKSTAT.

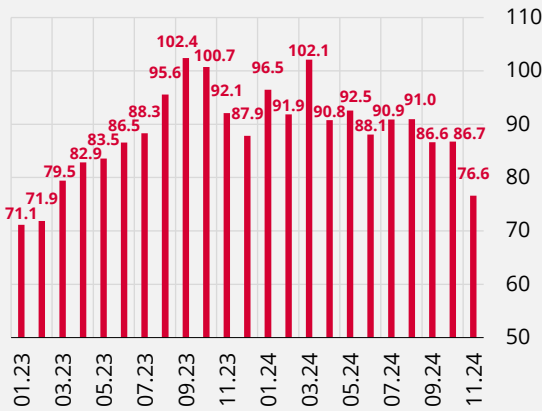
\* The sizes of the figures are proportional to the share of the respective component.

Rent inflation is determined by the price dynamics in three main categories: (i) new contracts (new tenant), (ii) renewed contracts (existing tenant with rent updates) and (iii) ongoing contracts (existing tenant without rent updates) (Figure 1). Since the ratio of new contracts to total contracts is minimal, price movements in new contracts have a limited impact on rent inflation. The tendency to index renewed contracts to past inflation and the low frequency of updates contribute to inertia in rent inflation. Prices and increase rates in new and renewed rental contracts may also be reflected in ongoing contracts as they serve as benchmarks in the future.

CBRT monitors a range of indicators with distinct features to track rent inflation and assess its future trajectory. One of these indicators is rental payments made via the RPS, which operates under the Electronic Funds Transfer (EFT) system for Turkish lira transfers between customers. RPS data allow for the calculation of increase rates in both new and renewed contracts, as well as for inferences about the renewal rate of ongoing contracts (Charts 2 and 3).

The price increase rate in new and renewed contracts remained within the 90-100% range until August 2024. Recently, the change in rental prices has shown a deceleration, reaching 76.6% as of the first seven days of November 2024 (Chart 2). The contract renewal rate typically peaks in January each year, with high levels in the third quarter, followed by lower levels in the last quarter (Chart 3). Similar seasonal effects are also observed in rent inflation reported by TURKSTAT.

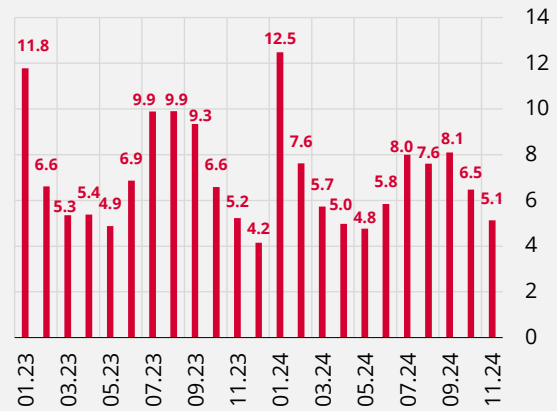
**Chart 2: RPS Rental Price Changes in New and Renewed Contracts\* (%)**



Source: CBRT.

\* Data covers the first seven days of November.

**Chart 3: RPS Contract Renewal Rate\* (%)**

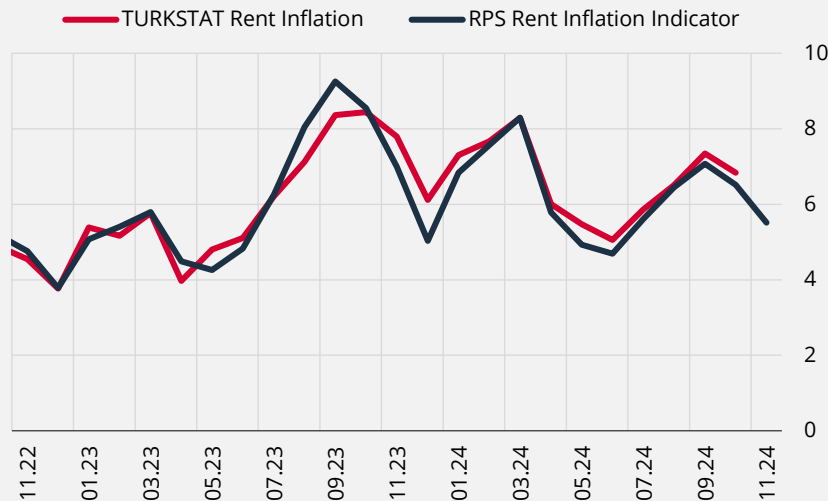


Source: CBRT.

\* The number of followed contracts varies monthly. Data covers the first seven days of November.

A leading indicator for monthly rent inflation in the CPI can be constructed by using the rental price change rate in new and renewed contracts and the renewal rate in ongoing contracts. The RPS rent inflation indicator provides insights into current rent inflation and serves as an input for short-term inflation forecasts. Due to differences in coverage and methodology, as it excludes certain transfer types such as cash payments, this indicator may diverge from TURKSTAT rent inflation. However, the high number of traceable rental transactions in the EFT system partially alleviates coverage-related issues. Indeed, as shown in Chart 4, this leading indicator, while occasionally diverging from TURKSTAT rent inflation, generally aligns closely in terms of level and trend (Chart 4).

**Chart 4: TURKSTAT Rent Inflation and RPS Rent Inflation Indicator\* (Three-Month Moving Average, Monthly % Change)**



Source: CBRT, TURKSTAT.

\* Calculated using RPS and includes new, renewed and ongoing contracts. Data covers the first seven days of November.

In sum, considering the downward trend in contract increase rates in the RPS leading indicator since March 2024 and the moderation of the contract renewal rate in the last quarter, rent inflation is expected to decelerate in the last quarter of 2024.

## 3. Medium-Term Projections

### 3.1 Current State, Short-Term Outlook and Assumptions

#### Changes in Key Forecast Variables

**Annual and quarterly growth rates declined in the second quarter of the year.** This decline implies weaker economic activity compared to the first quarter. In the second quarter, the contribution of private consumption to growth decreased further, while that of public consumption and total investments remained limited. Meanwhile, the continued positive contribution of net exports pointed to a balanced demand outlook in terms of growth composition. Indicators for the third quarter of the year suggest that domestic demand continued to decelerate and approached levels supportive of disinflation. On the other hand, backward-looking revisions were made in the national income calculations published by TURKSTAT during this period. These revisions indicated that the level of demand in the second quarter was higher than projected in the previous Inflation Report. Accordingly, output gap assumptions for the second and third quarters of 2024 were revised upwards based on revisions, realizations and leading indicators (Table 3.1.1).

**Consumer inflation fell to 48.6% in October, slightly above the forecast range presented in the previous Inflation Report.** Administered price hikes and tax revisions shaped the inflation outlook in the third quarter. With the mild course of global commodity prices and exchange rates, pressures driven by producer prices on consumer inflation eased further. Meanwhile, food prices, led by the fresh fruits and vegetables group, were influential in the October inflation reading (Table 3.1.1).

**In the third quarter of 2024, the underlying trend of inflation slowed yet remained above the projections of the previous Inflation Report.** Monthly price increases in services remained elevated in the third quarter. This was driven by adjustments in administered items and services groups with a high tendency for time-dependent price-setting and backward-indexation. However, excluding rents, monthly price increases in services displayed a gradual deceleration. Price increases in core goods were weak in this period owing to the mild course of exchange rates and the slowdown in domestic demand, remaining below those of other groups. In October, the underlying trend of inflation was higher than projected, albeit with a slowdown driven by both core goods and services. Despite the downtrend in 12- and 24-month-ahead inflation expectations, year-end inflation expectations for 2024 and 2025 remained above the forecast range presented in the previous Inflation Report. Moreover, the weaker-than-expected improvement in inflation expectations suggests that the level of inflation persistence may have picked up slightly.

**Table 3.1.1: Changes in Key Forecast Variables\***

	2024-II	2024-III
Output Gap	1.8	0.2
(%)	(1.5)	(-0.5)
Consumer Inflation**	61.8	48.6
(Annual % Change)	(61.8)	(45.6)
B-Index Inflation**	60.3	47.1
(Annual % Change)	(60.3)	(43.6)

\* Figures in parentheses denote values presented in the previous Inflation Report.

\*\* Denotes inflation in July for 2024-II and October for 2024-III.

#### Assumptions for Exogenous Variables

**The global growth outlook remained broadly unchanged compared to the previous reporting period.**

Leading indicators for global growth continued to rise slightly in the third quarter, driven by the services sector. While global PMI data for the manufacturing industry fell below the threshold value, those for the services sector remained above the threshold value, albeit weaker than the previous reporting period. While growth forecasts for 2024 have been revised upwards in advanced economies, more notably in the US, the growth outlook in Eastern Europe and the Middle East is projected to weaken somewhat. Growth forecasts for 2025 diverged across countries and were revised downwards for the euro area and upwards

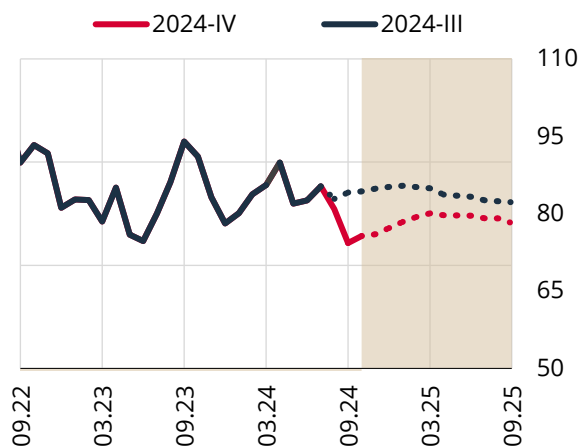


for the US, the UK and the United Arab Emirates while remaining flat for China. Against this background, annual growth assumptions in the export-weighted global growth index, based on Türkiye's trading partners, were left the same as the previous reporting period at 2.0% for 2024 and 2.4% for 2025 (Table 3.1.2).

**Central banks of advanced economies are expected to continue their rate cuts with a data-driven approach to ensure a sustained decline in inflation.** Starting the rate-cutting process in September as inflation kept declining, the Fed reduced rates again in November and signaled that, depending on the data, interest rates might also be lowered in its upcoming meetings. The ECB, which went ahead with rate cuts in September, stressed that future meetings would determine cuts based on the developments in inflation and economic activity. Emerging economies have been slightly more cautious in cutting policy rates due to the slowdown in the improvement in inflation. China, on the other hand, announced expansionary monetary and fiscal policies in order to allay concerns over deflation and achieve its growth target. Against this background, advanced and emerging economies are expected to continue to cut policy rates in the upcoming period. Given the current level of global inflation, stickiness and geopolitical risks, it is envisaged that the rate cuts will continue in a way to maintain monetary tightness and ensure a sustained decline in inflation.

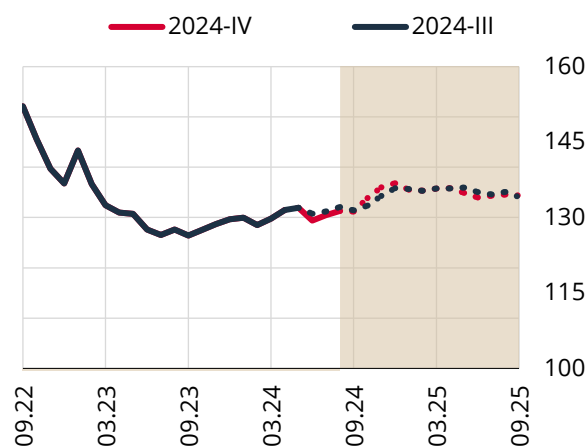
**Geopolitical risks, the global growth outlook, and supply-side factors continue to shape commodity prices.** Oil prices remained volatile in this reporting period. After falling in August and September, oil prices edged up in October yet remained below the levels projected in the previous Inflation Report. Although the OPEC+'s decision to cut production had an upward impact on prices, the weak course of demand outweighed this effect. Accordingly, the average oil price assumption for 2024 fell from USD 84.2 to USD 81.1 due to the realizations (Chart 3.1.1). Likewise, the oil price assumption for 2025 has been revised downwards. On the other hand, prices of industrial metals and agricultural commodities recorded significant increases in this period. Thus, the fall in energy commodity prices was offset by non-energy commodity prices, resulting in a minor revision in assumptions for import prices in general (Chart 3.1.2).

**Chart 3.1.1: Revisions in Oil Price Assumptions\* (USD/bbl)**



Source: Bloomberg, CBRT.  
\* Shaded area denotes the forecast period.

**Chart 3.1.2: Revisions in Import Price Assumptions\* (Index, 2015=100)**



Source: CBRT, TURKSTAT.  
\* Shaded area denotes the forecast period.

**The food price assumption for 2024 was revised upwards.** Annual food inflation stood at 43.7%, remaining below the headline inflation in the third quarter of 2024. In October, unprocessed food prices posted a strong increase due to the transition from field to greenhouse. Moreover, agricultural commodity price projections have been raised globally. Accordingly, the assumption for food price inflation was revised upwards to 41.8% and 22.5% for 2024 and 2025, respectively (Table 3.1.2).

**Table 3.1.2: Revisions in Assumptions\***

	2024	2025
Export-Weighted Global Growth Index (Annual Average % Change)	2.0 (2.0)	2.4 (2.4)
Oil Prices (Average, USD)	81.1 (84.2)	78.8 (82.9)
Import Prices (USD, Annual Average % Change)	0.8 (0.7)	2.8 (2.8)
Food Price Inflation (Year-End % Change)	41.8 (35.5)	22.5 (15.0)

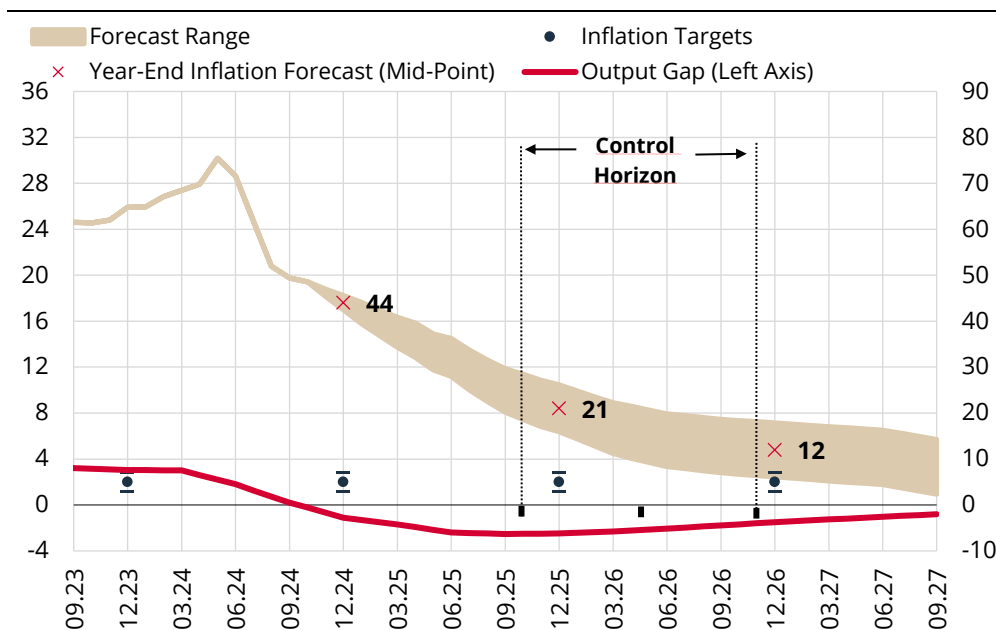
\* Figures in parentheses denote values presented in the previous Inflation Report.

**The forecasts are based on an outlook in which macroeconomic policies are determined in a coordinated manner focused on disinflation by adopting a medium-term perspective.** In this context, it is assumed that the contribution of fiscal policy to the rebalancing process in the economy will strengthen further, and that administered prices, borrowing and tax and income policies will be determined to support the disinflation process. In fact, the MTP for 2025-2027 indicates that fiscal policy will be supportive of disinflation in the upcoming period as the projected improvement in budget balances will be achieved through a reduction in primary expenditures rather than a rise in tax revenues (Box 2.4).

## 3.2 Medium-Term Outlook

**Year-end inflation forecasts for 2024, 2025 and 2026 have been revised to 44%, 21% and 12%, respectively.**

With 70% probability, inflation is projected to be between 42% and 46% (with a mid-point of 44%) at end-2024, between 16% and 26% (with a mid-point of 21%) at end-2025 and between 6% and 18% (with a mid-point of 12%) at end-2026. Inflation is then expected to stabilize at 5%, the medium-term inflation target (Chart 3.2.1). Medium-term forecasts are based on an outlook in which the tight monetary policy stance would be maintained until the inflation outlook displays a significant and sustained decline, and the coordination among economic policies would be strengthened.

**Chart 3.2.1: Inflation Forecasts\* (%)**

Source: CBRT, TURKSTAT.

\* Shaded area denotes the 70% confidence interval for the forecast.

**The revision in the end-2024 inflation forecast to 44% was driven by the forecast deviation following the inflation realizations in September and October and the limited improvement in the underlying trend and expectations.** In October, annual consumer inflation stood at 48.6%, 0.2 percentage points above the forecast range projected in the previous Report. The underlying trend of inflation continued to improve in this period, albeit at a slower-than-expected pace. Meanwhile, inflation inertia is expected to display a slightly weaker improvement in the upcoming period, due to items such as rent, which include structural issues in their pricing dynamics, and the slower-than-expected improvement in expectations. With the lagged effects of monetary tightening, the demand is expected to slow further and remain supportive of disinflation. The increase in the end-2024 inflation forecast was driven by the food price assumption and the revision in the underlying trend of inflation and initial conditions. In addition to these effects, the revision in the administered price assumptions and the reflections of the regulations on electricity pricing dynamics also played a role in the revised year-end inflation forecast for 2025 (Table 3.2.1).

**Table 3.2.1: Revisions in Year-End Inflation Forecasts for 2024 and 2025 and Sources of Revisions**

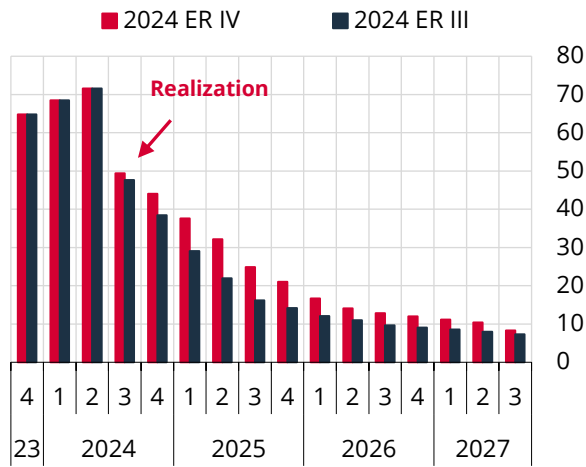
	2024	2025
Inflation Report 2024-III Forecast (%)	38	14
Inflation Report 2024-IV Forecast (%)	44	21
<b>Forecast Revision Compared to Inflation Report 2024-III</b>	6.0	7.0
<b>Sources of Forecast Revision (% Points)</b>		
Food Prices	1.6	1.9
TL-Denominated Import Prices	0.2	0.5
Output Gap	0.3	0.2
Administered Prices	-	0.9
Initial Conditions, Underlying Trend and Inflation Inertia	3.9	3.5

Source: CBRT.

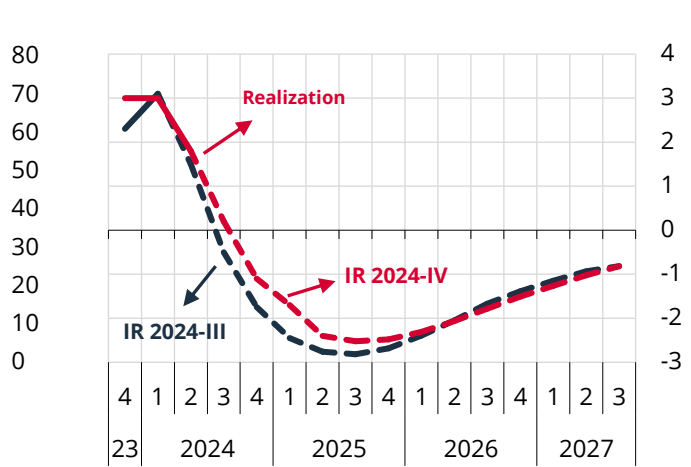
**The year-end inflation forecast for 2024 was revised upwards to 44%** (Chart 3.2.2). Revisions-and realizations-driven upward adjustment to output gap assumptions had an impact of 0.3 percentage points on the year-end inflation forecast (Chart 3.2.3). The revision from the TL-denominated import prices pushed forecasts up by 0.2 percentage points. Revised assumptions for food inflation pulled forecasts up by 1.6 percentage points (Table 3.2.1). The slower-than-expected decline in underlying inflation and expectations and the revision in initial conditions raised the end-2024 forecast by 3.9 points.

**The year-end inflation forecast for 2025 was revised upwards to 21%** (Chart 3.2.2). The revision in the output gap path had an impact of 0.2 percentage points on the year-end forecast for 2025 (Chart 3.2.3). Regulations on electricity pricing dynamics had an upward impact on consumer inflation when compared to the assumptions presented in the previous Inflation Report.<sup>1</sup> Administered price assumptions were also revised in line with the upward revision in the inflation forecast. These factors pushed the year-end inflation forecast upwards by 0.9 percentage points in total. Revisions to TL-denominated import price and food price assumptions added 0.5 and 1.9 percentage points to the inflation forecast, respectively (Table 3.2.1). The year-end forecast for 2025 was up by 3.5 percentage points, given the impact of the revision in the year-end forecast for 2024 on inflation inertia and the underlying trend.

<sup>1</sup> As part of the re-regulation of the End-Source Supply Tariff limits by the Energy Market Regulatory Authority, a change will be introduced in the electricity market as of February 2025. Accordingly, there will be no change in the electricity price for households with annual consumption below 5,000 kilowatt-hours (the majority of households), while the cost-based pricing system will be implemented for households with consumption above the relevant limit. With this implementation, the electricity price for high-consumption households will increase in February 2025, the month of transition. The electricity price for this group may fluctuate from month to month depending on the costs in the market. The regulation will also have implications for businesses.

**Chart 3.2.2: Inflation Forecast** (Quarter-End, Annual, %)

Source: CBRT, TURKSTAT.

**Chart 3.2.3: Output Gap Forecast (%)**

Source: CBRT.

**Forecasts are based on the assumption that uncertainty regarding global financial markets fades somewhat compared to the previous reporting period, and that the global growth outlook will remain consistent with past projections.** The fact that the Fed joined the group of major central banks initiating rate cuts, and that inflation and economic activity data in advanced economies came out in line with the disinflationary path underpinned the recovery in the global risk appetite. However, geopolitical developments and uncertainties arising from the US elections continue to cause the global risk appetite to fluctuate. Therefore, portfolio inflows towards emerging economies show fluctuations. In the current reporting period, the strong growth in CBRT reserves continued, and Türkiye's risk premium declined. The fact that the tight monetary policy stance will be maintained in Türkiye until sustained price stability is achieved will help mitigate the potential adverse effects of global financial market volatility on the country's risk premium.

**Forecasts rely on a monetary policy that will remain tight until a significant and sustained decline in the underlying trend of monthly inflation is observed, and inflation expectations converge to the projected forecast range.** Inflation expectations and pricing behavior are risk factors for the disinflation process, and the uncertainty regarding the pace of the improvement in inflation is high. Backed by financial policies to support and strengthen the monetary transmission and monetary policy communication that stresses a decisive tight stance, the convergence of inflation expectations to the Inflation Report forecasts in the short term and to the inflation targets in the medium term is critical to achieve a sustained decline in inflation. The CBRT evaluated that the monetary transmission mechanism will be supported by additional macroprudential measures, and sterilization tools will continue to be used effectively. Loan growth is predicted to remain consistent with the moderation in domestic demand. Moreover, the forecast is based on an outlook in which coordination among economic policies will be strengthened.

**The acceleration in the disinflation process in the third quarter is expected to continue into the last quarter of the year amid the slowdown in demand and tight financial conditions.** Demand conditions are estimated to pull inflation down in the last quarter. While core goods inflation remains low, the improvement in services inflation in October is expected to continue in the last quarter. Meanwhile, the time-dependent and backward-indexed pricing behavior, prevalent in the services sector, leads to significant inertia and a protracted impact of shocks on inflation. This outlook causes services inflation to weaken with a lag. In particular, due to its structural factors, the dynamics of the rent group differ from other services, causing them to exhibit high persistence.

**Along with the decline in headline inflation, inflation expectations across all sectors continue to improve gradually.** However, expectations remained above the forecast range, and the pace of improvement has not yet reached the desired levels. The convergence of inflation expectations to the Report's forecast range is critical for the cost of disinflation. The continued decline in inflation will contribute to the improvement in expectations. The supportive course of demand conditions to disinflation will become more pronounced in

the upcoming period as the tight stance continues, and the tightness in financial conditions is maintained, in view of the lagged effects of the monetary tightening. With the contribution of all these factors, the decline in the underlying trend of monthly inflation is projected to continue and decline steadily in the medium term. As producer price pressures diminish, the stickiness of services inflation eases and the tight monetary stance is maintained, the underlying trend of inflation will recede further to historical averages. The decisive monetary policy stance will support the fall in the underlying trend of inflation on the back of the moderation in domestic demand, the real appreciation of the Turkish lira and the improvement in inflation expectations.

### 3.3. Key Risks to Inflation Forecasts and Possible Impact Channels

**The outlook underlying the medium-term forecasts presented in the previous section is shaped by the assessments and assumptions of the Monetary Policy Committee.** However, the inflation outlook may be subject to various risks associated with these factors, leading to a divergence from the monetary policy stance projected in the baseline scenario. The risks that are identified in the baseline scenario and have the potential to change the outlook are listed below and summarized in Table 3.3.1.

**Inflation expectations and pricing behavior remain a risk factor for the disinflation process.** Inflation expectations of market participants, firms and consumers play an important role in pricing behavior, portfolio preferences and consumption/credit demand. High inflation expectations may pose an upside risk to the consumption trend and credit demand. Recently, expectations of both market participants and firms have declined, while the improvement in inflation expectations of households, which are highly sensitive to inflation realizations, has been stronger on the back of the decline in annual inflation (Box 3.1). In addition to the level, the sensitivity of expectations to short-term data surprises is also important. This necessitates keeping a cautious and decisive stance in monetary policy.

**The ongoing stickiness in services prices poses an upside risk to inflation forecasts.** The prevailing price-setting behavior in the services sector leads to significant inertia, a protracted impact of shocks on inflation and causes price increases in this sector to be inconsistent with the disinflationary path. Despite a slight deceleration compared to the previous quarter, price increases in the services sector remained robust in the third quarter. In this period, the highest price hike was observed in the rent subgroup. On the other hand, monthly rent inflation is expected to decelerate in the last quarter of the year as the rates of increase used as reference in contract renewals and contracts will decline. However, rent price dynamics show high inertia and also include structural factors. Therefore, rents remain a risk factor for the inflation forecast. Moreover, other subgroups with strong price increases were transport services due to adjustments in administered items and education services due to university fees. The ongoing stickiness in services inflation feeds upward pressures on consumer inflation.

**The course of unprocessed food prices poses a risk to inflation forecasts.** In the third quarter, the main contribution to the fall in annual consumer inflation came from food prices, which declined on the back of the unprocessed food subgroup. In this period, the fresh fruits and vegetables sub-item determined the decline in unprocessed food prices. However, the rise in unprocessed food prices in October due to the transition from field to greenhouse played a major role in the monthly increase in food prices. Besides, having risen recently, agricultural commodity prices can be volatile in general. In this respect, the volatility in food, particularly in unprocessed food prices, keeps downside and upside risks to inflation forecasts alive.

**The level of domestic demand and consumption and savings profiles of different income groups are critical for the pace of disinflation.** Indicators for the recent period suggest that domestic demand continued to moderate in the third quarter. Domestic demand conditions by goods and services indicate that demand for goods excluding automobiles may have increased slightly in the third quarter, while demand for services may have declined. On the other hand, the differing pace of the slowdown in consumption across different income groups is critical with respect to the effectiveness of the monetary policy transmission. In fact, the concentration of high credit card balances on the upper quantile of the income distribution emerges as a standout factor.<sup>2</sup> The tightening in financial conditions failing to reflect in the consumption and saving decisions of high-income groups may cause aggregate demand conditions not to remain disinflationary to the desired extent.

<sup>2</sup> For further details, see Bölükbaş, M., Çolak, M. S., & Ocakverdi, E. (2024). "Differentiation of Maximum Contractual Interest Rates for Personal Credit Cards Based on Balances", CBRT Blog.

***Volatility in commodity prices arising from geopolitical developments and supply-side factors poses upside risks to inflation forecasts.*** Lingering geopolitical tensions in Russia-Ukraine and the Middle East as well as OPEC+ member countries' output cut decisions cause upward supply pressures on oil prices to persist. Fluctuations also prevail in natural gas prices. Moreover, industrial and agricultural commodity prices have also increased significantly compared to the previous reporting period. The effects of these developments on transportation and input costs are monitored. Geopolitical developments may also affect risk perceptions towards Türkiye through foreign demand and export revenues.

***The coordination of monetary and fiscal policies is of utmost importance for the disinflation process.*** The incomes policy may affect inflation and expectations through the production cost and demand channels. Adjustments in administered prices and taxes that are not in line with the projected disinflation path may exert pressures on inflation. In order to achieve the projected disinflation path, it is vital to take into account the CBRT's inflation forecasts while setting the revaluation rate and the lump-sum SCT increase in early 2025, which are expected to have an impact on administered prices and tax items and to support the tight monetary policy stance with a prudent fiscal policy. Additionally, achieving the budget balance targets envisaged in the MTP by prioritizing expenditure reduction over revenue increase will underpin the disinflation process.

**Table 3.3.1: Key Risks to Inflation Forecasts and Possible Impact Channels\***

Risk	Evaluation of Risks Compared to the Baseline Scenario and Possible Effects on Inflation (↑   ↔   ↓)	Indicators Monitored
Inflation Expectations	<ul style="list-style-type: none"> <li>Despite the improvement in medium-term inflation expectations, the elevated level of expectations keeps upside risks to inflation forecasts alive.</li> </ul> <p style="text-align: right;">↑</p>	<ul style="list-style-type: none"> <li>Key inflation indicators</li> <li>Indicators for inflation expectations</li> <li>Sectoral inflation expectations</li> <li>Distribution of inflation expectations</li> <li>Inflation uncertainty indicators</li> <li>Survey and market pricing-based inflation and exchange rate expectations</li> </ul>
Inertia in services inflation	<ul style="list-style-type: none"> <li>The ongoing stickiness of services prices keeps upside risks to inflation alive.</li> </ul> <p style="text-align: right;">↑</p>	<ul style="list-style-type: none"> <li>Key inflation indicators</li> <li>Inertia in services inflation</li> </ul>
Food prices	<ul style="list-style-type: none"> <li>Volatility in unprocessed food prices keeps downside and upside risks to inflation forecasts alive.</li> </ul> <p style="text-align: right;">↔</p>	<ul style="list-style-type: none"> <li>Prices of fresh fruits and vegetables</li> <li>Indicators for climate change</li> </ul>
Demand conditions	<ul style="list-style-type: none"> <li>Indicators for the third quarter point to a continued slowdown in domestic demand, while the divergence between demand for services and goods draws attention.</li> <li>Tight financial conditions have a limited impact on the high-income group. This poses a demand-driven upside risk to inflation.</li> </ul> <p style="text-align: right;">↔</p> <p style="text-align: right;">↑</p>	<ul style="list-style-type: none"> <li>Domestic demand indicators</li> <li>Retail sales volume index and trade sales volume index</li> <li>Interviews with firms and survey data</li> <li>Credit card spending</li> <li>White goods and automobile sales</li> <li>Services production index</li> </ul>
Geopolitical developments and the course of commodity prices	<ul style="list-style-type: none"> <li>The ongoing geopolitical tensions in Russia-Ukraine and the Red Sea and the continued production cuts by OPEC+ countries pose upside risks to oil prices from the supply channel.</li> <li>The volatility in natural gas prices and the surge in industrial and agricultural commodity prices keep the risks to inflation forecasts alive.</li> <li>Oil and commodity prices are likely to remain volatile due to geopolitical risks.</li> </ul> <p style="text-align: right;">↑</p> <p style="text-align: right;">↑</p> <p style="text-align: right;">↑</p>	<ul style="list-style-type: none"> <li>Crude oil prices and demand-supply balance</li> <li>OPEC+ decisions</li> <li>Indicators for domestic energy market</li> <li>Administered prices</li> </ul>



Risks to the effectiveness of coordination between monetary and fiscal policies	<ul style="list-style-type: none"> <li>• Lack of coordination between monetary and fiscal policies may pose risks to inflation and the moderation in domestic demand. <span style="float: right;">↑</span></li> <li>• Introducing reforms in direct taxes and/or tax collection efficiency may reduce the need for indirect taxes, thereby having a downward impact on prices. <span style="float: right;">↓</span></li> <li>• The revaluation rate and the lump-sum SCT increase, which will be determined in early 2025, pose downside and upside risks on inflation forecasts. <span style="float: right;">↔</span></li> </ul>	<ul style="list-style-type: none"> <li>• Adjustments in administered prices and taxes</li> <li>• Developments in tax revenues and public expenditures</li> <li>• MTP and fiscal policy measures</li> <li>• Budget and public debt stock indicators</li> <li>• Structural budget balance forecasts</li> <li>• Share of direct taxes in total taxes</li> <li>• 2025 revaluation rate and lump-sum SCT increase</li> <li>• Minimum wage and public wage increases</li> </ul>
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\* Each risk row in the table indicates the possible channel and the direction for the change in inflation forecasts in case the mentioned risk materializes. The signs ↑, ↓ indicate that the risk to the inflation forecast is upside and downside, respectively. The ↔ sign is used when the net impact on the inflation forecast is not completely clear. The indicators through which the risk is monitored are also listed in the right column.

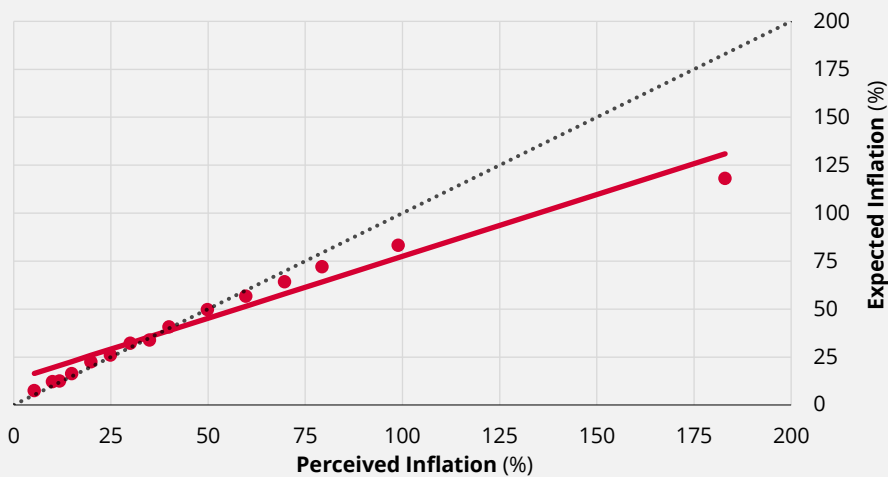
## Box 3.1

### Consumers' Perceived and Expected Inflation

Inflation expectations play a critical role in determining consumers' future decision-making processes. Consumers' predictions for future price changes can directly affect their decisions on consumption-savings, portfolio preferences, wage demands and labor force participation. Moreover, bringing forward or postponing consumption demand in response to changes in consumers' inflation expectations can increase or decrease inflationary pressure through changes in aggregate demand in the economy. In this respect, consumers' inflation expectations constitute an important input for central banks' decision-making processes and communication strategies in terms of the effectiveness of the monetary transmission mechanism.

Perceived inflation can be a major determinant of consumers' inflation expectations (Huber et al., 2023, Cavallo et al. 2017). Cavallo et al. show that there is a strong linear relationship between perceived and expected inflation and the coefficient of pass-through from perceived inflation to expected inflation is 0.78 for the US and 0.88 for Argentina. Perceived and expected inflation rates can be obtained by directly asking respondents through household surveys. This study analyzes the relationship between consumers' perceived and expected inflation in Türkiye using micro data from the Consumer Tendency Survey. In addition, this study asks how this relationship changes according to different demographic groups in comparison with earlier findings. Perceived and expected inflation rates were determined by using the responses of the Consumer Trend Survey participants to the questions "By what percentage do you think consumer prices increased/decreased in the last 12 months? Please give an estimated rate." and "By what percentage do you expect consumer prices to increase/decrease in the next 12 months? Please give an estimated rate." These analyses were prepared using monthly data from October 2014 to October 2024.

**Chart 1: Perceived and Expected Inflation\*<sup>1</sup>**



Source: CBRT, TURKSTAT.

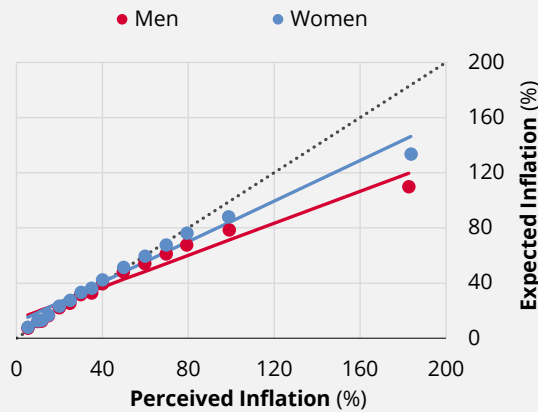
\* The chart presents the relationship between perceived and expected inflation in a bi-scatter representation using micro data of the Consumer Tendency Survey on a participant basis. The dashed line shows the 45-degree line, where perceived inflation and expected inflation take the same values. Plots above the line indicate that expected inflation is higher than perceived.

<sup>1</sup> The relationship seen on the graph corresponds to a correlation coefficient of 0.64. When controlled with the inflation rate of the previous month, the relationship continues, but the coefficient drops to 0.57.

In the literature, studies using survey-based indicators reveal that there may be biases in both perceived and expected inflation. In this context, it has been found that perceived inflation is generally higher than expected inflation for consumers (Biau et al., 2010, Arioli et al., 2017). In Türkiye, it is observed that consumers' perceived inflation is higher than expected inflation, yet there is a strong relationship between them (Chart 1). A one-unit increase in perceived inflation is associated with an increase of approximately 0.64 units in expected inflation. High perceived inflation leads inflation expectations to remain high, which in turn causes the inertia in inflation expectations to strengthen.

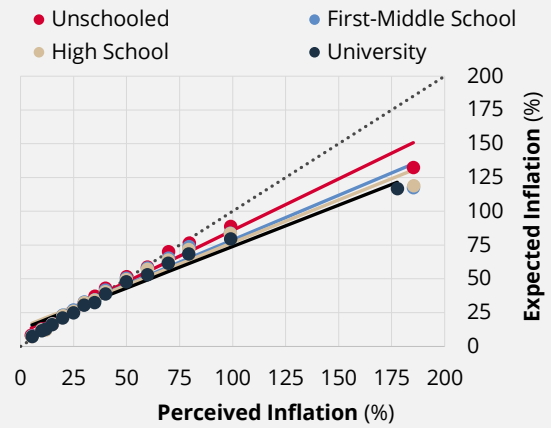
The pass-through from perceived inflation to expected inflation follows a heterogeneous course for different demographic groups. The charts below show the relationship between consumers' perceived inflation and expected inflation by gender, education, income and age groups. First, as presented in Chart 2, women form their expectations higher than men in terms of perceived inflation. The inflation expectations of less-educated groups are more sensitive to inflation perceptions than those of highly educated groups (Chart 3). An analysis of income groups reveals that low-income groups have the highest inflation expectations relative to perceived inflation (Chart 4). Across age groups, the 16-24 age group has the steepest curve, while the relationship between perceived inflation and inflation expectations is relatively weaker in older age groups (Chart 5).

**Chart 2: Perceived and Expected Inflation by Gender (%)**



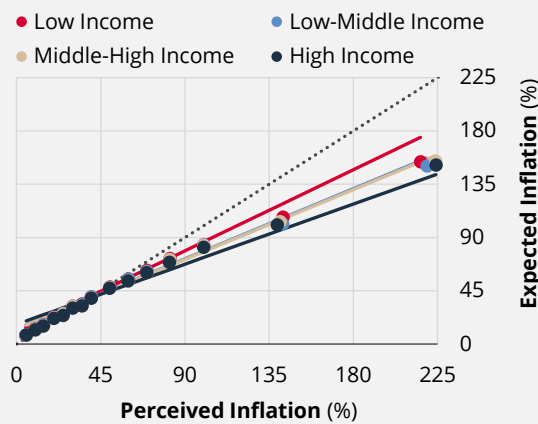
Source: CBRT, TURKSTAT.

**Chart 3: Perceived and Expected Inflation by Education Level (%)**



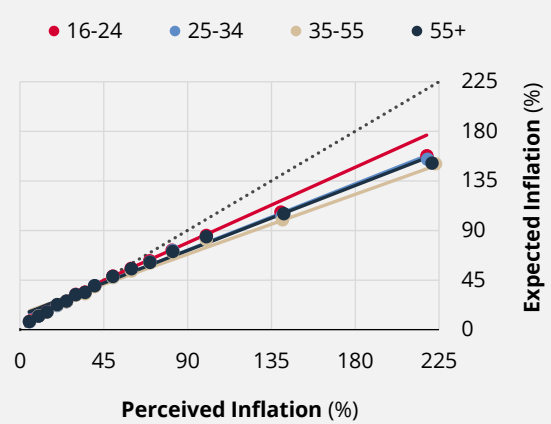
Source: CBRT, TURKSTAT.

**Chart 4: Perceived and Expected Inflation by Income Group (%)**



Source: CBRT, TURKSTAT.

**Chart 5: Perceived and Expected Inflation by Age Group (%)**



Source: CBRT, TURKSTAT.

The graphs above show that consumers' inflation expectations are related to their perceptions of past inflation. In this respect, it is important to understand what affects consumers' inflation perceptions. Studies in the literature explain the determinants of perceived inflation through the reasons why perceived inflation is higher than actual inflation for many countries. Consumers' shopping frequency and rapid changes in the prices of products in their shopping baskets (D'Acunto et al., 2019, De Fiore et al., 2022), the fact that prices of products they buy from the market have a higher weight in consumers' memories in a high inflation environment (Cavallo et al., 2017), and some consumers pay more attention to price changes in products that they consider special (Bruine de Bruin et al., 2011) are among the main factors determining perceived inflation.

An analysis of the correlations between perceived and expected inflation and CPI sub-item inflation in Türkiye reveals that perceived inflation has a higher correlation than expected inflation, except for the sub-items "clothing and footwear" and "education" (Table 1). However, the higher correlation between perceived inflation and inflation in "food and non-alcoholic beverages", "furnishings, household equipment, routine maintenance of the house", "transportation", "communication", "housing, water, electricity, gas and other fuels" and "health" sub-items indicates that, in line with the literature, changes in the prices of goods and services that are predominantly included in consumers' consumption baskets are effective on perceived inflation in Türkiye.

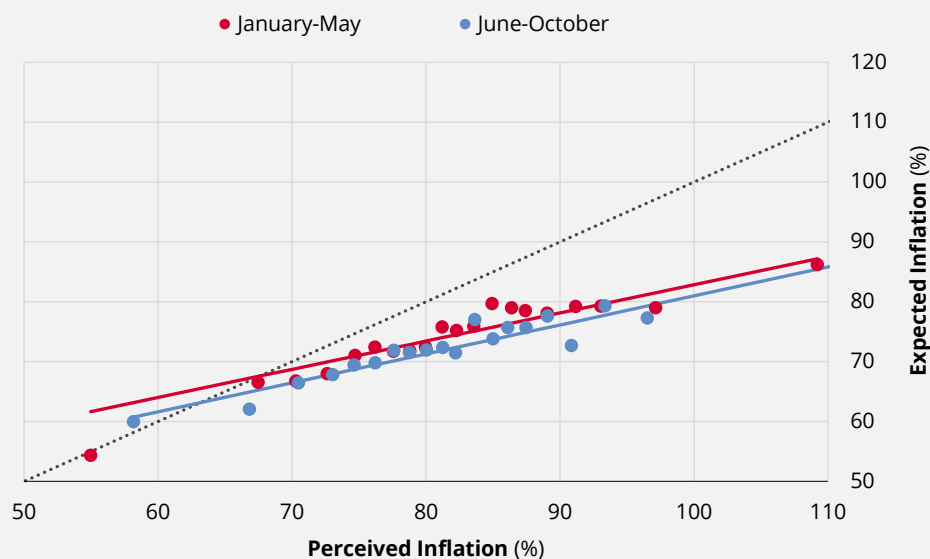
**Table 1: Correlation of Perceived and Expected Inflation with CPI Subgroups\***

	Weight in CPI	Perceived Inflation	Expected Inflation
CPI	100	0.869	0.849
Food and Non-alcoholic Beverages	24.98	0.883	0.857
Furnishings, Household Equipment, Routine Maintenance of the House	8.12	0.870	0.843
Hotels, Cafes and Restaurants	8.17	0.860	0.844
Recreation and Culture	3.33	0.850	0.831
Health	3.71	0.832	0.812
Communications	3.34	0.788	0.776
Transport	17.35	0.776	0.763
Housing, Water, Electricity, Gas and Other Fuels	14.20	0.760	0.738
Alcoholic Beverages and Tobacco	3.76	0.735	0.721
Clothing and Footwear	6.94	0.731	0.731
Education	1.80	0.655	0.664

Source: CBRT, TURKSTAT.

\* Data were calculated by panelizing the data.

In Chart 6, averages are taken for perceived and expected inflation in the time dimension with repeated cross-sections while controlling for the aforementioned demographic differences. In this framework, the relationship between perceived inflation and expected inflation is compared in the January-May period of 2024, when inflation was on the rise, and in the period from June, when the disinflation process started, until today. In the post-June period, consumers' expectations declined and the line showing the relationship between these variables shifted downwards. Moreover, compared to the same level of perceived inflation, consumers form lower expectations during the disinflation period and the transition from perceived inflation to expected inflation decreases.

**Chart 6: Perceived and Expected Inflation in the Disinflation Period\***

Source: CBRT, TURKSTAT.

\* Data were calculated by panelizing the data.

Inflation expectations are one of the most important channels determining the effectiveness of monetary policy. Significant deviations in consumers' inflation expectations from the targeted inflation reduce the effectiveness of monetary policy and make it difficult to achieve targeted inflation rates. Although the relationship between perceived inflation and expected inflation varies across demographic groups, consumers who perceive inflation to be high also form inflation expectations at high levels. It is observed that the disinflation process achieved through the recent tight monetary policy has positively affected consumers' perceptions of inflation and led to a decline in inflation expectations. In this context, the continuation of the decline in inflation is expected to contribute to the improvement in consumer inflation expectations.

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CENTRAL BANK OF THE REPUBLIC OF TÜRKİYE  
Head Office  
Hacı Bayram Mah., İstiklal Cd. 10 Ulus, 06050  
Ankara, Türkiye  
[www.tcmb.gov.tr](http://www.tcmb.gov.tr)  
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