INFLATION REPORT

2024-I
February 8, 2024

TÜRKİYE CUMHURİYET
MERKEZ BANKASI

Contents

Boxes

1.Overview

Consumer inflation stood at 64.8% at the end of 2023 and ended the year in line with the mid-point of the forecast range presented in the previous Inflation Report. This outlook was maintained in January as the inflation realization was in accordance with the projections. The underlying inflation, which decelerated from September through the reporting period, recorded a temporary increase in January. While the impact of the macroeconomic shocks that emerged in the middle of the year weakened in the last quarter of the year, exchange rates followed a relatively stable course. Commodity prices declined led by the energy group, and global supply conditions remained in line with their historical averages throughout the fourth quarter prior to the escalation of geopolitical problems in January. The effects of monetary tightening on financial conditions and domestic demand had positive implications for inflation expectations and price-setting behavior. Inflation expectations decreased, and the consensus around the central tendency grew stronger in the distribution of expectations. Against this background, price-setting behavior of firms also started to improve slightly, and the frequency of price changes in the monitored product groups decreased while the diffusion index for core goods, durable goods in particular, posted a decline. Although aggregate demand conditions continue to weaken on the projected path, they still feed into inflation. In the last quarter of the year, as the limits for free use of natural gas were exceeded due to seasonal conditions, prices included in the index rose as projected despite no change in consumer natural gas tariffs. Time-dependent pricing and backward-indexation behavior as well as the high wage sensitivity prevalent in the services sector caused the services inflation to persist in the last quarter of the year. Following these developments, the monthly price increase strengthened in January with temporary effects arising from the minimum wage, tax and administered price adjustments and the developments in services items with time-dependent pricing behavior.

Indicators of the underlying monthly inflation declined in the last quarter at a faster pace than forecasted in the previous Report but increased in January as expected. In the last quarter, seasonally adjusted monthly increases in core indicators, which had increased substantially in the third quarter of the year, fell below the course recorded in the first half of 2023. Alternative statistical indicators such as median inflation and SATRIM, and model-based indicators confirmed that the underlying monthly inflation slowed markedly in the last quarter. Three-month averages of seasonally adjusted core inflation indicated a more favorable inflation course than projected in the previous Inflation Report. In sum, the underlying inflation decelerated significantly in the last quarter of the year as the impact of monetary tightening started to kick in and cost-side pressures, which intensified in the third quarter, largely passed through to prices. Core goods prices were the main driver of the slowdown in core inflation indicators in this period. The deceleration in the underlying inflation was interrupted in January due to wage adjustments and the items with high time-dependent price-setting tendency. It is projected that the deceleration in the underlying inflation will prevail again starting from February, and underlying inflation in the first half of the year will converge to 2023Q4 readings.

Inflation is projected to be 36% at the end of 2024 and fall to 14% at the end of 2025. Consumer inflation was 64.8% in 2023, close to our forecast of 65% in the previous reporting period. Medium-term forecasts are based on an outlook that the CBRT's tight monetary stance, which reflects the CBRT's commitment to intermediate targets, affects price-setting behavior via monetary transmission channels. Under this monetary stance, previous Report's year-end forecasts were maintained. Balancing factors were effective in maintaining the year-end forecasts. The course of underlying trend of inflation and developments in oil and import prices have favorably affected year-end inflation forecast for 2024. On the other hand, due to higher-than-expected wage increases and earthquake-related public expenditures, the rebalancing of demand is expected to continue, but reaching the level projected in the previous Report a quarter later, and unit labor costs are expected to be higher. Commodity prices, oil in particular, and food prices with relatively higher volatility continue to pose uncertainty on forecasts.

It is projected that headline inflation will increase throughout the first half of 2024 and decline steadily as of the second half of the year. In addition to the policy rate hikes, quantitative tightening, selective credit tightening policies and simplification steps in the macroprudential framework affect financial conditions by reinforcing the monetary transmission. Domestic demand continues to rebalance amid slower consumer loan growth excluding credit cards and increased demand for Turkish lira savings instruments. However, with wage policy and earthquake-related public spending supporting demand, the rebalancing is envisaged to reach the level projected in the previous Report with a delay of a quarter. Medium-term projections are

based on an outlook in which the the tight monetary policy stance will be maintained until the inflation outlook displays a significant improvement, quantitative tightening and macroprudential policies to reduce volatility in credit supply and deposit rates will strengthen the monetary transmission, and the level of monetary tightness will be adjusted in case of a deterioration in the inflation outlook. This tight monetary policy stance is assessed to reinforce the rebalancing in domestic demand and the gradual improvement in the current account balance, albeit with a delay compared to the previous Report. Additionally, it is projected that decisive and sustained adherence to monetary tightening will lead to a slowdown in monthly inflation and an improvement in inflation expectations, which are highly sensitive to inflation realizations, thereby improving the underlying trend of inflation.

Economic activity displayed a limited quarter-on-quarter growth in the third quarter of 2023, and pointed to a start of rebalancing in domestic demand as a result of monetary tightening. In the third quarter, GDP increased by 5.9% on an annual basis, while quarterly growth decelerated and stood at 0.3%. On the expenditures side, final domestic demand decelerated amid the contraction in private consumption and remained almost flat on a quarterly basis, while net exports contributed positively to quarterly growth for the first time after four quarters. On the production side, the industrial sector value added became the main driver of quarterly growth.

Indicators for the last quarter of 2023 point to a slowdown in domestic demand on an annual basis. As of November, the retail sales volume index increased further in the last quarter on an annual basis, albeit at a slower pace, while it declined slightly on a quarterly basis. Card expenditures indicate that consumption demand rose further on a quarterly basis in the last quarter of the year, when discount campaigns intensified, and that the rate of increase slowed down on an annual basis. On the other hand, it is evaluated that wage revisions in January contribute to the resilience in demand. In fact, the Business Tendency Survey (BTS) data suggest that registered orders from domestic market increased in January again. Adjusted for seasonal and calendar effects, industrial production posted a quarterly decline of 1.3% in the last quarter as of November. Similarly, employment growth was also limited in this period. As of November, seasonally adjusted employment increased by 0.3% (80,000 people) on a quarterly basis. Meanwhile, the seasonally adjusted labor force participation rate fell by 0.2 percentage points to 53.0%. Thus, in the last quarter, unemployment rate decreased by 0.4 points quarter-on-quarter to 8.8%. High-frequency data suggest that demand in the labor market lost some strength in January.

Amid the robust course of services balance coupled with the fall in the foreign trade deficit, the current account deficit declined in the last quarter of 2023. Despite the deterioration in the primary balance, the current account deficit, adjusted for seasonal and calendar effects, declined in the last quarter on account of the narrowing foreign trade deficit as well as the strong contribution of the services balance. Meanwhile, in the second half of the year, which is marked by tight monetary policy implementation, reserves increased as net capital inflows hovered above the current account deficit. As of November, the surplus in the services balance remained high in the last quarter of 2023 due to the sustained high level of the surplus in the travel revenues balance adjusted for seasonal and calendar effects accompanied by the flat course of the transport revenues balance. In this quarter, the foreign trade deficit adjusted for seasonal and calendar effects narrowed due to the limited fall in imports and the rise in exports. Thanks to the adoption of measures and the tight monetary policy, imports of unprocessed gold decreased and exports of unprocessed gold increased. In the last quarter, the quantity of exports climbed up while the quantity of imports went down along with the decline in imports of unprocessed gold, and hence the foreign trade balance improved despite the fall in the terms of trade.

The downtrend in global headline inflation accelerated in the fourth quarter with the contribution of energy prices, while core inflation declined further. Accordingly, central banks of advanced economies have mostly completed their tightening process. In advanced economies, amid tighter global financial conditions, core inflation receded from the range of 4-5%, marked by a notable stickiness previously, to the 3.5-4% band. Meanwhile, core inflation also dropped across emerging economies compared to the previous reporting period. With the decline in core inflation, central banks in advanced economies have revised their communication stating that the current level of policy rates is sufficient for their inflation targets, while the timing and pace of rate cuts have gained importance. On the other hand, rate cuts continued in emerging economies amid further improvement in the inflation outlook. However, as inflation hovers above the inflation targets and labor market-driven inflationary risks remain brisk, central banks are likely to continue

to cut rates to ensure a sustained disinflation process, and monetary tightness is expected to be maintained on a global scale.

The global risk appetite improved in the reporting period, and the monetary tightening process supported the positive divergence of Türkiye's financial indicators from those of peer countries. With the pricing of the fact that the tightest period for global financial conditions had been left behind, the risk appetite towards emerging economies registered a recovery. Against this backdrop, risk premium indicators in emerging economies declined, while Türkiye's CDS premium recorded a higher fall than that of peer countries by declining to 325 basis points. Meanwhile, the exchange rate volatility of the Turkish lira decreased further, more markedly in longer maturities, and one-month and 12-month implied exchange rate volatility fell below 7% and 21%, respectively. On the back of monetary tightening and simplification steps, the CBRT's gross international reserves continued to increase and reached USD 137.2 billion as of 26 January. In the current reporting period, government domestic debt securities (GDDS) yields increased in shorter maturities in line with the higher policy rate but receded in medium and longer maturities.

Financial conditions tightened as a result of the monetary policy decisions. Regulations towards increasing the share of Turkish lira deposits, quantitative tightening decisions supporting the monetary tightening process and steps taken to simplify the macroprudential framework continue to strengthen the transmission mechanism and improve the funding composition of the banking system. It is observed that, commercial loan growth stabilized as a result of the tightening effects of monetary policy on the credit market, while strategic investments that will improve the current account balance continue to be supported. The annual growth rate of total loans adjusted for exchange rates decreased by 3.7 percentage points to 34.4% in the fourth quarter. The annual growth rate of consumer loans decreased to 39.7%. Credit cards displayed a more persistent outlook, reflecting the campaigns spurring demand yet its annual growth rate continued to decrease in the final quarter of the year. The balancing process in the growth of retail loans, which were buoyant amid wage hikes in late December and January, is closely monitored. In the current reporting period, the rise in demand for the Turkish lira supported the monetary policy transmission. Deposit rates rose significantly by an average of 6.28 percentage points across all maturities, and while the outflow from FX-protected deposits accelerated, the share of Turkish lira deposits increased by 5.39 percentage points to 42.9% compared to the previous reporting period.

1.1 Monetary Policy Decisions

The CBRT continued to strengthen the monetary tightening process that it started in June in order to bring high inflation under control and establish the disinflation course as soon as possible. The CBRT raised the policy rate from 35% to 45% in the November-January period, noting that inflationary pressures were alive due to domestic demand, stickiness in services prices and geopolitical risks. Moreover, the CBRT also assessed that the monetary tightening has started to be reflected on financial conditions, and domestic demand was moderating as projected. Meanwhile, it was stated that the external financing conditions, the current account balance and demand for Turkish lira-denominated assets contributed to exchange rate stability and the effectiveness of monetary policy. It was also highlighted that inflation expectations and pricing behavior started to show signs of improvement, and a decline in the underlying trend of monthly inflation was observed.

In line with the forward guidance that was initiated in November, the CBRT slowed down the pace of monetary tightening in December and noted in January that the level of monetary tightness required to establish the disinflation course was achieved. In November, the CBRT raised the policy rate from 35% to 40% and provided forward guidance that it would slow down the pace of rate hikes in the coming months. In December, the CBRT shared its anticipation with the public that the tightening cycle would be completed as soon as possible and slowed down the pace of monetary tightening by raising the policy rate to 42.5%. In January, the CBRT raised the policy rate by an additional 250 basis points to 45%, stating that the level of monetary tightening required for disinflation had been reached. However, taking into account the lagged impact of monetary tightening, the CBRT noted that the level of monetary tightness achieved would be maintained as long as needed. Moreover, it was stated that the current level of the policy rate would be maintained until there was a significant decline in the underlying trend of monthly inflation and inflation expectations converged to the projected forecast range. It was also noted that the stance of monetary policy would be reassessed if notable and persistent risks to inflation outlook emerged.

To support monetary tightening, the CBRT continues to take quantitative tightening decisions to eliminate excess Turkish lira liquidity. With these decisions, the policy rate, which is the main policy

instrument, affected monetary and financial conditions and expectations, while excess Turkish lira liquidity was stabilized, and the effectiveness of the monetary policy was enhanced. Moreover, the CBRT decided to hold Turkish lira deposit buying auctions as of 22 December 2023 to strengthen the monetary transmission mechanism and increase the diversification of the sterilization instruments. The amounts in deposit buying auctions held as of the mentioned date are adjusted according to liquidity projections, and excess Turkish lira liquidity is sterilized via one-week auctions. Meanwhile, the CBRT continued to make arrangements to strengthen its credit programs to mitigate the lagged effects of monetary tightening on strategic investments and the export potential. Moreover, in tandem with monetary tightening, with the arrangements towards increasing the share of Turkish lira deposits, the CBRT strengthened the transmission mechanism and improved the funding composition of the banking system.

The existing micro and macroprudential framework was continued to be simplified to increase the functioning of market mechanism and strengthen macro financial stability. The CBRT continues to phase out the practice of securities maintenance for FX liabilities. Accordingly, the securities maintenance ratio for FX liabilities was reduced from 5% to 4%. Moreover, the temporary practice of maintaining securities based on loan growth, which expired at end-2023, and the exemption of earthquake zone loans from the securities maintenance requirement were extended until June 2024. In line with the simplification process, the CBRT strengthens the monetary transmission mechanism through macroprudential policy against any potential excess volatility in credit supply and deposit rates. Accordingly, in order to strengthen the monetary transmission mechanism, increase the share of Turkish lira deposits and support the transition from FX-protected deposits to Turkish lira deposits, reserve requirements of eligible deposit banks maintained for their Turkish lira deposit and FX-protected deposit accounts with a maturity longer than one month are subject to remuneration every three months.

The CBRT implements selective credit policies in such a way to facilitate both access to credit and financing costs, also taking into account the macro financial balance. To sustain price stability, the CBRT continues to support technological transformation to improve the current account balance, strategic investments to contribute to supply continuity, and exports. The Advance Loans against Investment Commitment (ALAIC) program, which aims to utilize long-term and low-cost resources in areas that support macro financial stability, was continued to be implemented with its renewed structure that highlights its contribution to price stability as well as the technological value added and strategic nature of investments. Accordingly, taking into account the technology/strategy score of the firms' investment projects with a minimum total investment amount of TRY 1 billion was deemed eligible for allocation of ALAIC via intermediary banks, and the interest rate for loans, which would be extended with a maximum maturity of 10 years, was set between 30% and 15%, depending on the technology/strategy score as well as the ratio of external financing for the investment and the financial soundness assessment. The new ALAIC program was allocated an annual limit of TRY 100 billion and a total limit of TRY 300 billion over the course of three years. The CBRT took new actions to support exporters' access to finance and financing conditions. Accordingly, a cap was set for the total interest cost of rediscount credits for export and FX earning services, and the maximum discount rate for rediscount credits for export and FX-earning services was kept constant at 25.93%.

The CBRT provided funding mostly through currency swap transactions, and the share of Open Market Operations (OMO) in funding decreased significantly. In the current reporting period, overnight rates moved within the CBRT interest rate corridor depending on liquidity conditions in the market. The amount of currency swap transactions, which was TRY 1.59 trillion as of 31 October 2023, increased to TRY 1.78 trillion on 23 November 2023, before falling to TRY 1.45 trillion as of 2 February 2024. In the same period, net OMO funding remained in negative territory due to exchange rate difference payments to FX-protected deposits, the CBRT's FX transactions and government expenditures, and the amount of OMO sterilization has posted significant increases as of mid-December (Chart 1.1.2). As a matter of fact, on 2 February 2024, net OMO funding was TRY -122.1 billion, while TRY 118.1 billion of the temporary excess liquidity in the market was sterilized through one-week deposit auctions. The withdrawal of excess liquidity through Turkish lira deposit buying auctions held since 22 December ensured a gradual decline in the amount of overnight sterilization and was influential on the overnight repo rates to remain close to the CBRT's weighted funding rate (Chart1.1.1, Box 1.1).

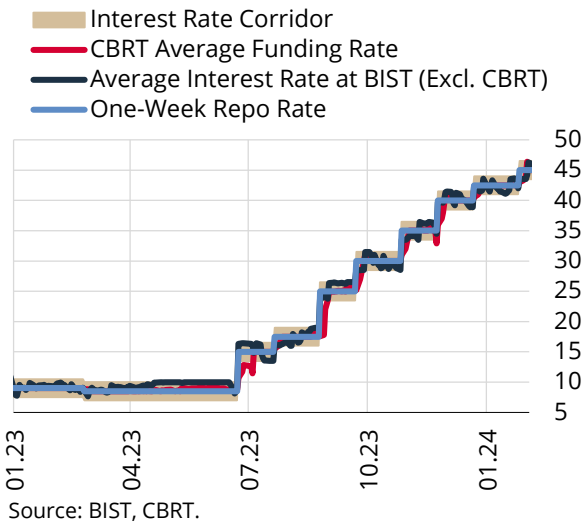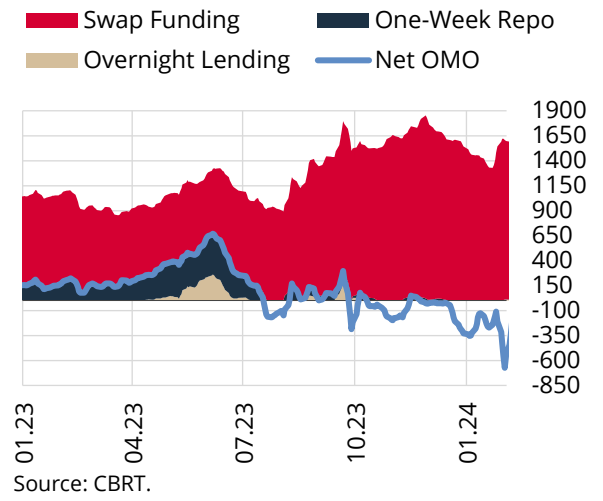**Chart 1.1.1: CBRT Rates and Short-Term Interest Rates** (%)

- Interest Rate Corridor
- CBRT Average Funding Rate
- Average Interest Rate at BIST (Excl. CBRT)
- One-Week Repo Rate

Source: BIST, CBRT.

Chart 1.1.2: CBRT OMO and Swap Transactions

(One-Week Moving Average, TRY Billion)

- Swap Funding
- Overnight Lending
- One-Week Repo
- Net OMO

Source: CBRT.

Box 1.1

Evaluation of Quantitative Tightening Steps

The CBRT started the monetary tightening process in the second half of 2023 to establish disinflation as soon as possible, to anchor inflation expectations and to control the deterioration in pricing behavior. Turkish lira liquidity developments are closely monitored to ensure the level of monetary tightness required for the permanent establishment of price stability, and monetary transmission is strengthened through quantitative tightening decisions.

Short-term market interest rates play an important role in the first stage of the monetary transmission mechanism. In the traditional inflation targeting regime, it is desirable for overnight market rates to be close to the policy rate to control long-term interest rates. For this purpose, central banks implement active liquidity management and take quantitative tightening steps when necessary. Central banks can ensure that market interest rates are in line with monetary policy through the decisions they make regarding the level of liquidity in the banking system (Ganley, 2002; Von Heideken and Sellin; 2014). In this context, the recent liquidity steps taken by the CBRT aim to increase the effectiveness of the monetary transmission mechanism.

As of the second half of 2023, due to exchange rate difference payments stemming from FX-protected accounts and FX transactions against Turkish lira, there has occasionally been an excess Turkish lira liquidity in the system, and the CBRT has become a net borrower in OMO. The CBRT has many policy tools to sterilize the excess liquidity that may occur in the market (Table 1). As a matter of fact, the excess liquidity has been sterilized by various tools to increase the effectiveness of the monetary transmission mechanism. In this context, a total of TRY 1 trillion was sterilized from the system with the increases in required reserve ratio made within the scope of quantitative tightening in July, September and November 2023 (Chart 1). The funding need of the system, which was TRY 926 billion in mid-July 2023 before the increase in required reserve ratio, reached TRY 1,269 trillion as of December 21, 2023 (Chart 2). Following the quantitative tightening steps taken regarding reserve requirements, the CBRT started to organize Turkish lira deposit buying auctions by increasing the variety of sterilization tools used to strengthen the monetary transmission mechanism, following the announcement made on 21 December 2023.

The CBRT continued the quantitative tightening process through the regulation made regarding the reserve requirements within the scope of its announcement dated 30 January 2024. While the required reserve ratios for FX-protected accounts were reduced, the additional reserve requirement ratio established in Turkish lira for FX accounts was increased. The net effect of the regulation was a tightening of TRY 125.8 billion.

Chart 1: Turkish Lira Required Reserve Level (TRY Billion)
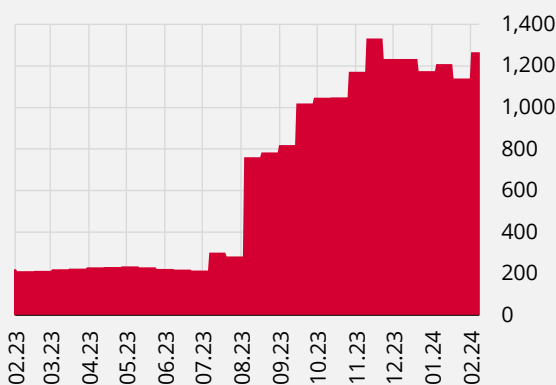
Source: CBRT.

Chart 2: Funding Need of the System and CBRT's Funding (TRY Billion)
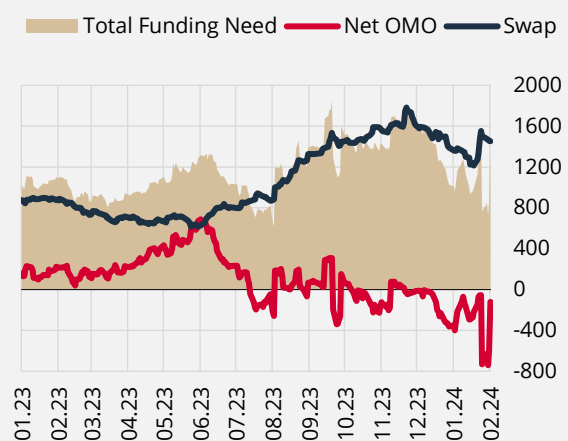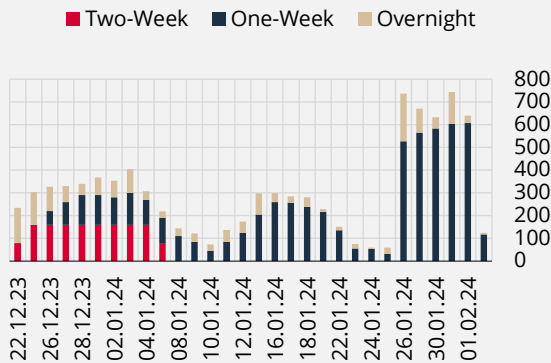

Source: CBRT.

Table 1: Sterilization Tools of the CBRT

	Policy Tool	Maturity	Effect	Frequency
Required Reserve Regulations	TL Denominated Required Reserve Facility for TL Denominated Liabilities	14 Days	Permanent	Two-Week Average
	TL Denominated Required Reserve Facility for Foreign Currency Denominated Deposits/Participation Funds	14 Days	Permanent	Two-Week Blocked
Market Operations	TL Deposit Buying Transactions in the CBRT Interbank Money Market	Overnight	Temporary	Daily
	Repo/Reverse Quotation Transactions against Lease Certificates	Overnight	Temporary	Daily
	Repo/Reverse Repo Transactions in BIST Repo Market	Overnight	Temporary	Daily
	TL Deposit Buying Auctions	Up to 91 days	Temporary	When necessary
	Reverse Repo Auctions	Up to 91 days	Temporary	When necessary
	Issuance of Liquidity Bills	Up to 91 days	Temporary	When necessary
	Outright Sales Transactions	-	Permanent	When necessary

Evaluation of Turkish Lira Deposit Buying Auctions

Since 22 December 2023, the CBRT has been sterilizing the excess liquidity in the system by conducting one and two-week Turkish lira deposit buying auctions in addition to its overnight sterilization. As temporary excess liquidity in the system has declined since this date, the amount of funds withdrawn through deposit buying auctions has also decreased and reached TRY 32 billion as of 25 January 2024. As a result of the calculation of required reserves maintained for Turkish lira liabilities on a two-week average basis, a significant increase in the excess liquidity level was observed on 26 January 2024 due to the change in the required reserve balances during this period, and while TRY 527 billion was sterilized through the deposit buying auctions on the said day, TRY 210 billion liquidity was withdrawn over the overnight maturity. As of 2 February, the level of excess liquidity decreased as the reserve requirement maintenance period started and the increase in required reserve ratio went into effect, and TRY 118.1 billion was withdrawn through deposit buying auctions, while TRY 6.5 billion was sterilized through the overnight term. Withdrawal of excess liquidity through TL deposit buying auctions with a term longer than overnight maturity has enabled the overnight sterilization amount to gradually decline, despite the increasing Turkish lira liquidity surplus in the system since mid-December (Chart 3). With the CBRT's overnight sterilization amount falling to reasonable levels, the overnight transaction volume at the BIST Repo-Reverse Repo Market, where the benchmark overnight repo rates are established, remained at plausible levels, thereby supporting the effective functioning of the money market.[1] In September, when the total OMO sterilization amount exceeded TRY 300 billion, BIST Repo-Reverse Repo Market overnight transaction volume declined gradually and reached TRY 28 billion on 28 September 2023. On the other hand, the average total OMO sterilization amount exceeded TRY 300 billion during the deposit buying auctions period, while BIST Repo-Reverse Repo Market overnight transaction volume was TRY 120 billion on average (Chart 4).

---

[1] Von Heideken and Sellin (2014) report that excess liquidity in the system causes banks to reduce their transactions in the overnight market and may negatively affect the functioning of money markets by reducing their incentives for effective liquidity management.

Chart 3: Total OMO Sterilization Amount (TRY Billion)

Source: CBRT.

Chart 4: Total OMO Sterilization and BIST Repo-Reverse Repo Market Overnight Transaction Volume (TRY Billion)
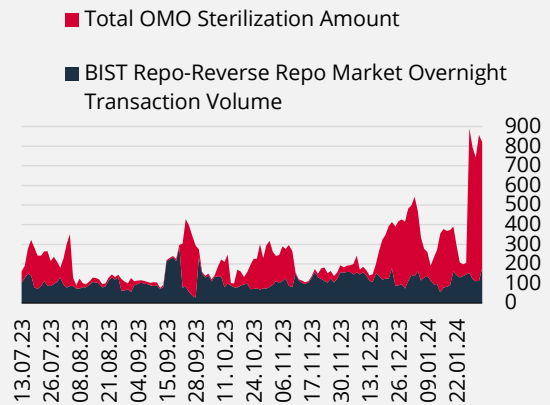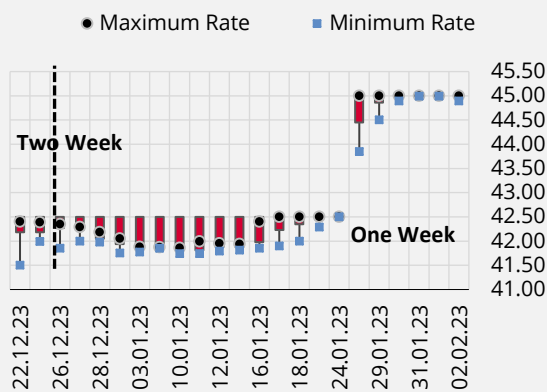

Source: BIST, CBRT.

The detailed analysis of the auctions shows that the auction bids are spread far apart in the first days of the one- and two-week auctions, whereas the bids converge to each other later on. The weighted average interest rates in deposit buying auctions were realized at levels close to the CBRT's policy rate (Chart 5).

Reducing the CBRT's overnight sterilization amount through OMO to reasonable levels had positive effects on BIST Repo-Reverse Repo Market transaction volumes and also improved the transmission of the CBRT's monetary policy stance to overnight interest rates. As a result of the withdrawal of excess liquidity through deposit buying auctions with a term longer than overnight maturity, BIST Repo-Reverse Repo Market overnight repo interest rates remained close to the CBRT's policy rate. Analyzing the days when net sterilization exceeded TRY 50 billion, it can be seen that deposit buying auctions significantly closed the gap between BIST overnight interest and the CBRT's policy rate (Chart 6).
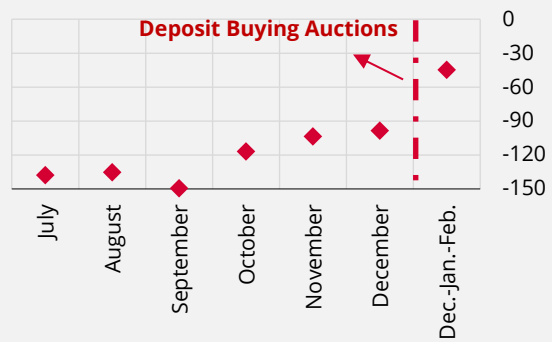
Chart 5: Bids Received for TL Deposit Buying Auctions* (%)

Source: CBRT.
* The end of the bars in the chart shows the CBRT policy rate, and the other end shows the average interest rate in the auction.

Chart 6: BIST Overnight Repo Rate and CBRT Policy Rate Difference* (% Points)

Source: BIST, CBRT.
* Days when the excess liquidity sterilized by OMO is over TRY 50 billion.

References

Ganley, J. (2002). Surplus Liquidity: Implications for Central Banks. Lectures, Centre for Central Banking Studies, Bank of England, number 3, April.

Von Heideken, Q., & Sellin, P. (2014). The Banking System's Liquidity Surplus and Interest Rate Formation. Sveriges Riksbank Economic Review, 3, 59-75.

2. Economic Outlook

2.1 Global Economy

Having become more pronounced in the third quarter, the weak global growth outlook persisted in the fourth quarter. While the impact of tighter global financial conditions on economic activity intensified, the services sector, which had driven economic growth in the first half of the year, continued to lose momentum. An analysis of global PMI indices reveals that the manufacturing industry was flat in emerging economies while remaining weak in advanced economies. In the services sector, PMI fell by 0.2 points each in advanced and emerging economies compared to the previous reporting period. Accordingly, the global composite PMI dropped by 0.1 points compared to the previous reporting period and stood at 50.8, right above the threshold value (Chart 2.1.1). Despite the deterioration in leading indicators, the global growth index weighted by the export shares of Türkiye's trading partners maintained its flat course compared to the previous reporting period. The index is projected to grow by 1.7% and 2.0% in 2023 and 2024, respectively. The growth forecasts for Türkiye's trading partners continued to be revised downwards, especially for 2024 (Table 2.1.1). Among advanced economies, the US diverged positively from the global outlook on the back of strong growth in the third and fourth quarters, but the outlook for the euro area remained weak. Despite a limited improvement in forecasts regarding China's economy, a growth rate below the historical average is projected for 2023 and 2024.

Chart 2.1.1: Global PMI Indices* (Level, Quarterly Average)
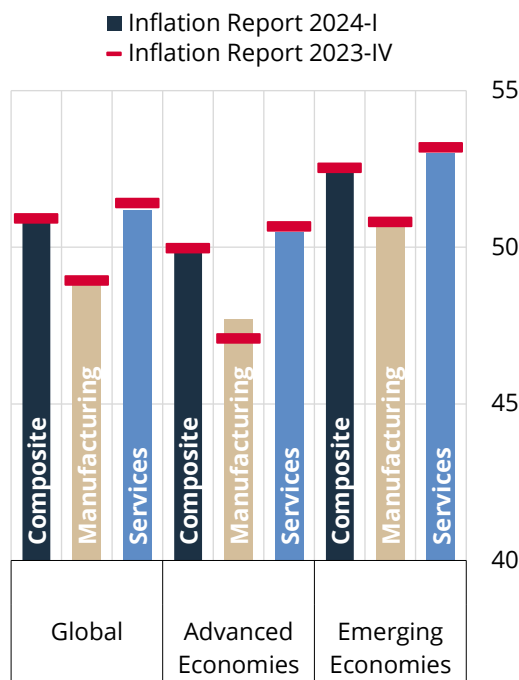
Source: S&P Global.

* July, August and September averages are used for Inflation Report 2023-IV, while October, November, December and January averages are used for Inflation Report 2024-I.

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

	2022	Forecasts for 2023		Forecasts for 2024	
		IR 2023-IV	IR 2024-I	IR 2023-IV	IR 2024-I
Euro Area	3.5	0.5	0.5	0.6	**0.5**
Germany	1.8	-0.4	**-0.3**	0.5	**0.3**
USA	2.1	2.2	**2.4**	0.9	**1.4**
UK	4	0.4	0.4	0.3	**0.2**
Italy	3.8	0.7	0.7	0.6	**0.5**
Iraq	8.8	1.1	**-0.5**	3.8	**3.7**
Spain	5.5	2.3	2.3	1.3	1.3
France	2.6	0.8	0.8	0.8	**0.7**
Netherlands	4.5	0.5	**0.2**	0.8	**0.5**
Israel	6.4	3.0	**1.9**	3.2	**1.6**
Russia	-2.1	1.7	**3.0**	1.4	**1.7**
UAE	7.2	3.0	**2.9**	4.2	4.2
Romania	4.8	2.3	**2.0**	3.4	**3.3**
Belgium	3.1	0.9	**1.4**	0.9	**1.0**
Poland	4.9	0.2	**0.5**	2.7	**2.9**
Egypt	6.6	4.1	**3.9**	3.9	**3.5**
Bulgaria	3.4	1.7	**1.8**	2.3	**2.1**
China	3.0	5.0	**5.2**	4.4	**4.6**

Source: Consensus Economics, S&P Global.

* IR stands for Inflation Report. Countries are ranked according to the size of their share in Türkiye's exports in 2021.

Commodity prices continue to be driven by the global growth outlook and composition, geopolitical risks, financial conditions and supply-side factors. Compared to the previous reporting period, the headline commodity index declined on the back of falling energy prices but still hovers above the average of the last decade. Energy commodity prices posted significant decreases compared to the previous reporting period. Geopolitical risks and the decisions by the OPEC+ member countries to maintain production cuts led to the continuation of upward supply-side pressures on oil prices, while the global growth outlook, levels of oil stocks and financial conditions pushed oil prices down (Zoom-In 2.1). Brent oil prices per barrel went down

by 10.8% compared to the previous reporting period but remained volatile. While natural gas prices also retreated, the decline in natural gas prices, which serve as a benchmark for Europe, was sharper on an annual basis due to the weaker economic outlook in the euro area. Industrial commodity prices, which have historically been on a path consistent with the global growth outlook and China's growth in particular, were on a slightly upward trend compared to the previous reporting period, despite significant year-on-year declines. Although agricultural commodity prices exhibit heterogeneity, the headline index for agricultural commodities receded by 3.1% compared to the previous reporting period (Table 2.1.2).

Table 2.1.2: Commodity Prices (%)

|	October 2023	November 2023	December 2023	January 2024	Annual	Compared to the Previous Reporting Period*
Headline Commodity Index	-3.7	-4.2	-4.4	0.9	-7.1	-7.6
Energy	-4.7	-7.3	-6.7	1.8	-6.3	-12.4
Agricultural Commodities	-1.2	1.0	-1.7	-3.4	-18.5	-3.1
Industrial Metals	-2.8	1.4	0.5	-0.1	-11.2	1.0
Precious Metals	-0.7	4.1	2.1	-0.4	10.1	2.7
Non-Energy	-2.1	0.7	-1.2	-0.4	-8.3	0.0
Brent Oil	-3.1	-8.7	-6.1	2.5	-1.9	-10.8
Natural Gas (USA)	16.7	-3.2	-16.6	7.5	-15.0	-40.1
Natural Gas (Europe)	27.5	-2.6	-21.0	-16.9	-44.5	-40.1
Coal	-12.6	-11.7	17.2	-10.8	-47.6	-2.7
Aluminum	0.3	0.5	-0.5	0.5	-8.7	-0.2
Copper	-3.3	3.2	3.6	-1.0	-5.9	4.1
Iron	-1.7	9.1	4.7	1.1	4.1	2.4
Wheat	-0.4	-1.8	9.0	-1.9	-20.2	6.1
Soy Beans	-3.1	4.8	-2.6	-6.0	-21.7	-8.9
Rice	-1.4	6.4	1.2	2.0	4.4	14.1
Corn	3.2	-4.1	0.2	-3.5	-33.7	-5.8
Cotton	-2.0	-7.6	2.2	3.0	3.5	9.2
Sugar	1.3	1.5	-18.9	1.5	10.8	-13.1

Source: Bloomberg.
* Denotes the percentage change between 2 February 2024 and 2 November 2023.

The downtrend in global headline inflation accelerated in the fourth quarter owing to energy prices, and core inflation also declined amid the restrictive effect of global financial conditions on demand.
Nevertheless, inflation hovered above the target levels. As the impact of tight monetary policy became more pronounced, core inflation in advanced economies, which had remained persistent in the 4-5% range, receded to the 3.5-4% range starting from the last quarter. On the other hand, core inflation outpaced headline inflation, particularly due to the persistence of services inflation. Monthly inflation data suggest that core inflation in advanced economies lost pace and followed a course more consistent with the targets (Chart 2.1.2). While inflation rates across emerging economies continued to converge towards the targeted levels in general, Russia diverged negatively. Although headline inflation has fallen to levels within the tolerance range in some countries, the majority of countries have observed price increases above their targets (Chart 2.1.3). Nevertheless, the global inflation outlook improved significantly, and inflation approached the targets from the peak levels reached in the second half of 2022. Meanwhile, the continued tightness in labor markets, despite some normalization, and the potential rise in energy prices continue to pose upside risks to the inflation outlook. The higher-than-expected inflation rates in December in the US, the euro area, and the UK support this outlook.
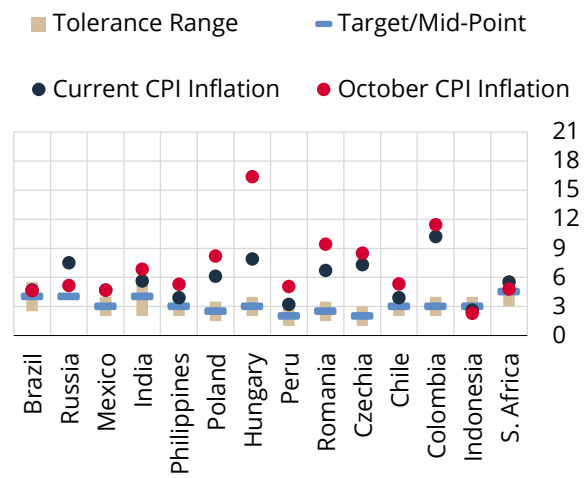
Chart 2.1.2: Core Inflation in Advanced Economies* (Three-Month Moving Average, Annualized, %)
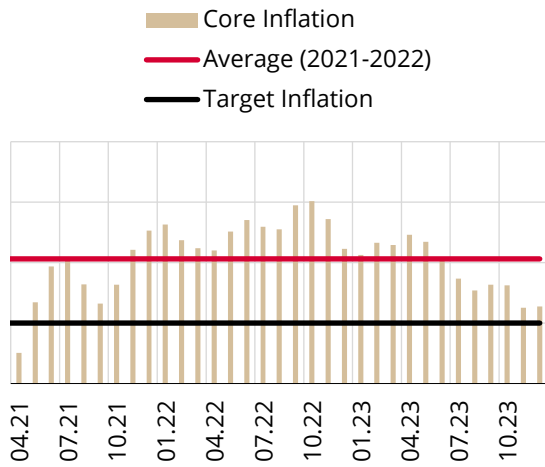
Source: Bloomberg, CBRT.
* Advanced economies include Canada, euro area, Japan, Israel, Norway, South Korea, Sweden, Switzerland, UK and USA.

Chart 2.1.3: Consumer Inflation in Emerging Economies (%)
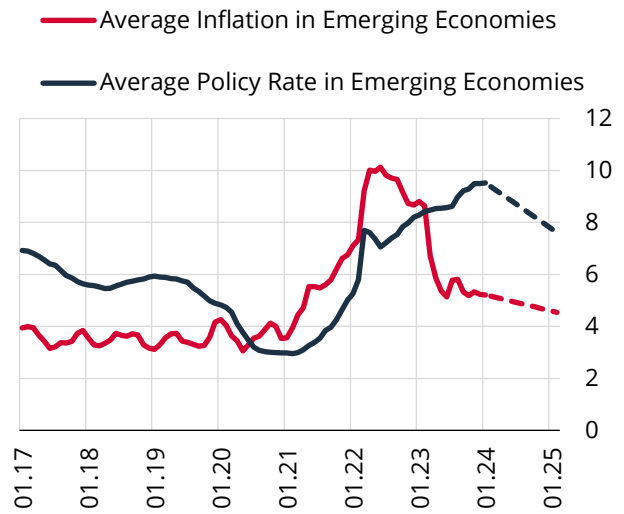

Source: Bloomberg.

The retreat in global inflation rates and the weak economic outlook strengthened expectations that the central banks of advanced economies might start rate cuts earlier. In the current reporting period, the central banks of advanced economies have largely completed their tightening processes amid the mild inflation outlook, leading financial markets to focus on the timing and pace of rate cuts. The US Federal Reserve (Fed) kept the policy rate unchanged at 5.5% in January, as in December, noting that the policy rate had reached its peak. Although the median expectations of the committee members point to three rate cuts for 2024, market pricing implies rate cuts beyond that. At its January meeting, the Fed reinforced its message that there would be no early and rapid rate cuts. Although this has shifted the Fed's futures-implied policy rate path slightly upwards, this path is observed to have moved significantly downwards compared to the previous Report (Chart 2.1.4). The ECB, which kept its policy rate unchanged at its December and January meetings, reiterated in its decision statement that monetary policy would be sufficiently tight, noting that inflation was on a downward trend but carried the risk of rising again. The ECB's downward revisions in both inflation and growth forecasts for 2024 strengthened expectations about rate cuts for the ECB, as it was for the Fed. However, data on market pricing may display volatility. The Reserve Bank of Australia and the Norges Bank of Norway raised their policy rates by 25 basis points each, emphasizing that it would take time to achieve their inflation targets in the current reporting period, while the central banks of other advanced economies kept their policy rates constant. On the other hand, interest rate cuts continue in emerging economies on the back of the ongoing improvement in the inflation outlook. In the current reporting period, Banco Central do Brazil (100 basis points), Central Reserve Bank of Peru (75 basis points), Central Bank of Colombia (50 basis points), Czech National Bank (25 basis points), Central Bank of Chile (175 basis points), and Magyar Nemzeti Bank (225 basis points) cut their policy rates. In this period, the Bank of Russia raised its policy rate by 100 basis points, pointing to rising inflationary pressures driven by the war. In the upcoming period, interest rate cuts are likely to spread across advanced and emerging economies in line with the fall in inflation. However, as inflation hovers above the target levels in many of these countries, central banks are expected to continue their rate cuts in a way to maintain monetary tightness and ensure a sustainable decline in inflation. Futures-implied policy rates suggest that policy rates in emerging economies will continue to be set above inflation (Chart 2.1.5).

Chart 2.1.4: Futures-Implied Fed Funds Rate
(Effective, %)
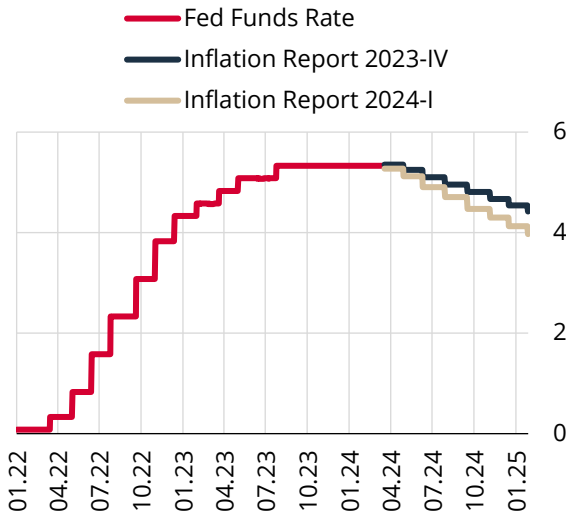
Source: Bloomberg.

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

Source: Bloomberg.
* Emerging economies include Brazil, Chile, Colombia, Czechia, Hungary, India, Indonesia, Mexico, Peru, Philippines, Poland, Romania, Russia, South Africa and Thailand.

The increased risk appetite due to the continued convergence of inflation rates to the targets in emerging economies and the strengthened expectations that the central banks of advanced economies would cut policy rates earlier and faster led to the resumption of portfolio inflows to emerging economies. The recovery in the global risk appetite led to the resumption of portfolio inflows to emerging markets, which recorded strong outflows in the August-October period. Accordingly, between 30 October 2023 and 2 February 2024, portfolio inflows to emerging economies excluding China totaled USD 55.1 billion, of which USD 16.6 billion was to bond markets and USD 38.5 billion to equity markets. In this period, in addition to risks such as low growth and the property crisis, China, for which the credit rating outlook was revised downwards, saw an outflow of USD 4.3 billion from equity markets (Chart 2.1.6).

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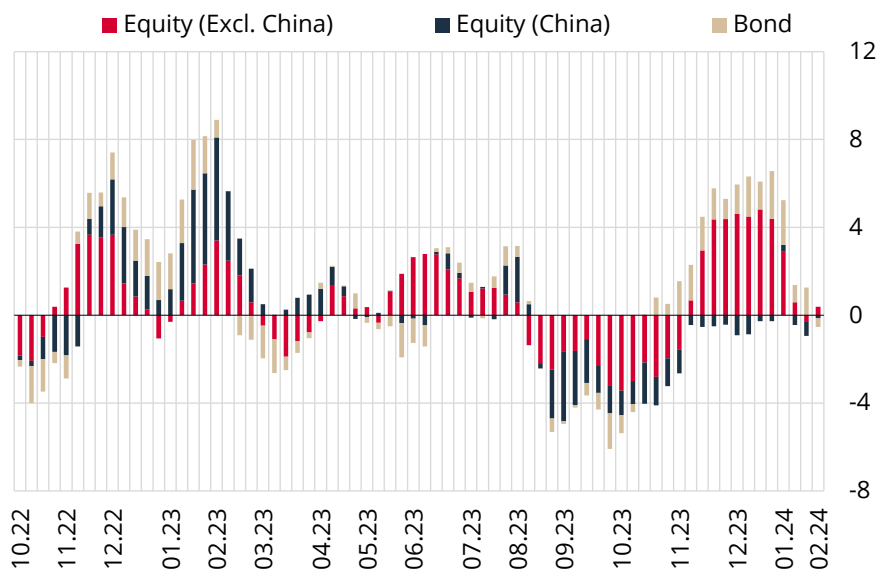

Source: IIF.

Zoom-In 2.1

Recent Outlook for Oil Prices

Although oil prices have recently followed a mild course, downside and upside risks to prices remain alive due to the global growth outlook, geopolitical developments and the decisions taken by OPEC+ members. The ongoing tensions in the Middle East and the decision by OPEC+ members to maintain production cuts keep exerting upward supply-side pressures on oil prices. However, the slowing pace of global oil consumption in line with the global growth outlook, high levels of oil stocks and financial conditions push oil prices down. As a matter of fact, Brent oil prices per barrel declined compared to the previous reporting period (Chart 1). Oil prices, which were trading around USD 90 per barrel in the previous reporting period, are trading around USD 80 per barrel in the current reporting period. Volatility indicators also show a decline, but they are still above the 2023Q3 readings (Chart 2).

Forecasts of international institutions and organizations converge while futures prices exhibit divergence (Table 1). Box 3.1 in Inflation Report 2023-IV stated that indicators signaled that the volatile course of oil prices would continue in the upcoming period due to geopolitical developments, and in this framework, the oil forecast paths of international institutions and organizations for 2024 recently diverged from each other, and forecasts moved in a broad range. However, although oil prices remained above the levels observed before the recent geopolitical developments, the volatility declined slightly, leading international institutions and organizations to converge in their oil price forecasts for 2024. A significant number of organizations forecast oil prices similar to the 2023 realization, averaging slightly above USD 80 per barrel, and expect global supply and demand to be balanced while forecasting a downward trend for 2025. However, forecasts derived from futures prices imply a sharper decline in oil prices.

Chart 1: Brent Oil Prices (USD/bbl, Five-Day Moving Average)
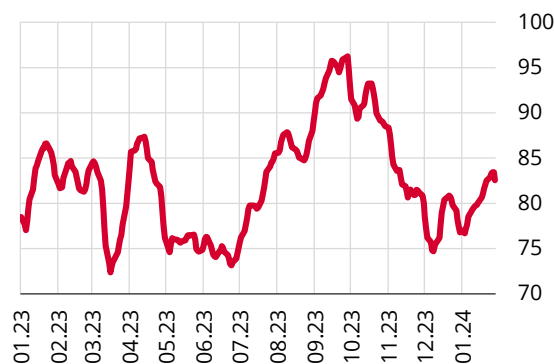
Source: Bloomberg.

Chart 2: Three-Month Implied Brent Oil Price Volatility (Five-Day Moving Average)

Source: Bloomberg.

**Table 1: Oil Price Forecasts*** (Annual Average)

	2024	2025
Consensus Forecasts	82.5	80.6
EIA	82.5	79.5
World Bank	81.0	79.0
ECB	80.1	76.5
Futures Prices	79.6	75.4
IMF	79.1	75.3

* Forecasts by Consensus, the EIA, the World Bank, the ECB, and futures prices denote Brent oil prices per barrel, while IMF forecasts show the average of Brent, Dubai and West Texas Intermediate oil forecasts. Consensus forecasts are taken from the Consensus Forecasts Bulletin for January 2024; EIA forecasts are taken from the Short-Term Energy Outlook Bulletin for January 2024; World Bank forecasts are taken from the Global Economic Prospects for January 2024; ECB forecasts are taken from the ECB's December 2023 macroeconomic projections; and IMF forecasts are taken from the World Economic Outlook for January 2024. Futures prices denote the average of two-week futures prices until 2 February 2024.

2.2 Financial Conditions

The end of rate hikes by central banks of advanced economies and the communication that their monetary policy is tight enough to ensure the convergence of inflation to the target have supported the global risk appetite. Following the December meeting, the Fed did not change the policy rate in January either, stating that the policy rate had reached the peak. This communication of the Fed coupled with the projections that rate cuts would start in 2024 pushed the global risk appetite upwards in the current reporting period. With the pricing of the tightest period for global financial conditions being left behind, risk appetite towards emerging economies recovered. Against this backdrop, risk premium indicators in emerging economies receded, while the fall in Türkiye's CDS premium was larger despite the volatility recorded in the current reporting period. The CDS premium, which rose to 392 basis points as of 1 November amid elevated geopolitical risks in the neighboring regions in October, trended downwards again with the monetary tightening process and dropped to 280 basis points in December. In January, however, Türkiye's CDS premium increased again to 325 basis points due also to the deteriorating global risk appetite (Chart 2.2.1). The Turkish equity market attracted foreign investors back in November, and net foreign inflows totaled USD 1.92 billion in the current reporting period. Meanwhile, the GDDS market, which displayed the visible effects of the monetary tightening and the simplification in the macroprudential framework, recorded net foreign inflows of USD 1.79 billion in the current reporting period (Chart 2.2.2).
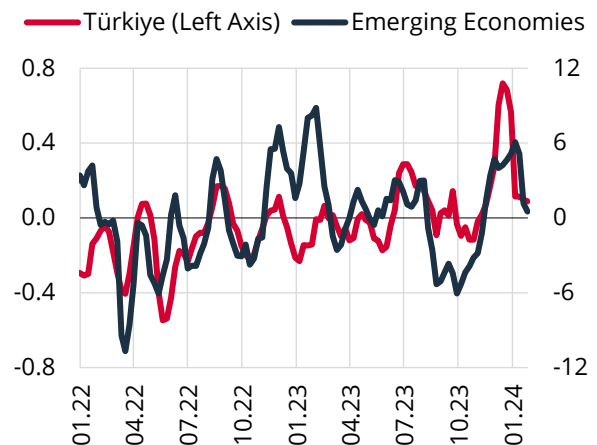
Chart 2.2.1: CDS Premiums in Türkiye and Emerging Economies* (Five-Year, Basis Points)
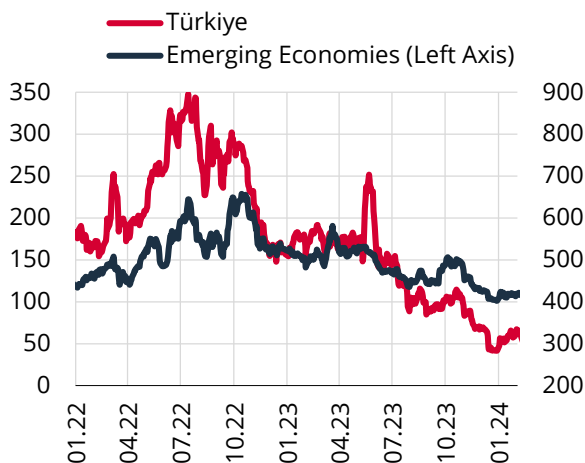
Source: Bloomberg.
* Emerging economies include Brazil, Chile, Colombia, Indonesia, Malaysia, Mexico, Philippines and South Africa.

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


Source: CBRT, IIF.
* Turkish data includes portfolio flows to equity and GDDS markets. Repo is excluded from the GDDS data.

The downtrend in the exchange rate volatility of the Turkish lira implied by options has continued in the current reporting period. In the current reporting period, emerging market currencies appreciated against the US dollar amid the improved global risk appetite, while the depreciation of the Turkish lira remained relatively limited. Meanwhile, the exchange rate volatility of the Turkish lira trended further downwards, more markedly in longer maturities. In the current reporting period, the one-month implied volatility of the Turkish lira fell below 7%, while the 12-month implied volatility stood below 21% (Charts 2.2.3 and 2.2.4). The difference between short and long-term volatilities suggests that the policies in effect continue to support exchange rate stability, yet risks to the long term are in place.
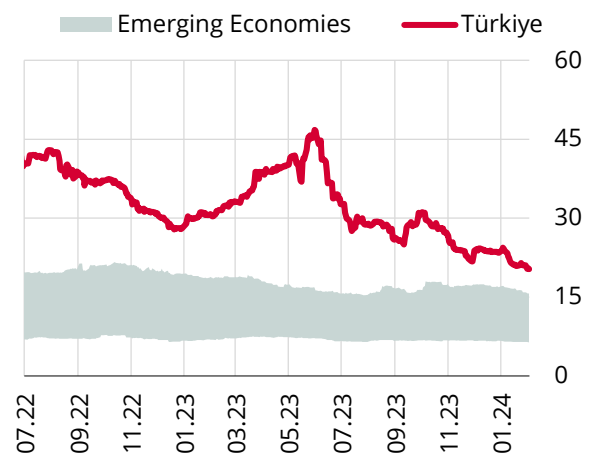
Chart 2.2.3: Implied FX Volatility by Options*
(Against USD, One-Month Maturity, %)
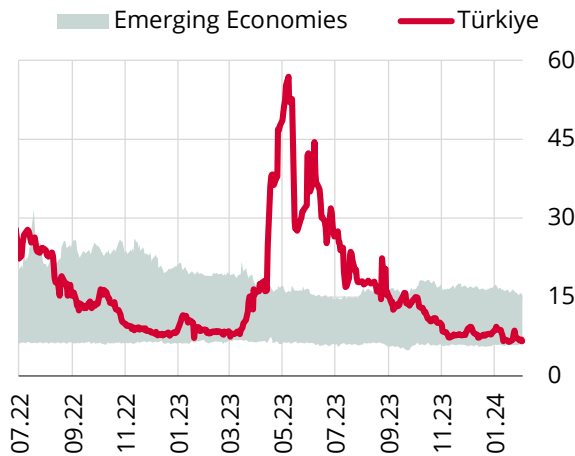
Source: Bloomberg.
* Emerging economies include Brazil, Chile, Colombia, Hungary, Indonesia, Malaysia, Mexico, Philippines, Poland, Romania and South Africa.

Chart 2.2.4: Implied FX Volatility by Options*
(Against USD, 12-Month Maturity %)

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

The CBRT's reserves remained on an upward trend thanks to the efforts towards monetary tightening and simplification. The CBRT's gross international reserves, which were USD 126.6 billion in the previous reporting period, rose to USD 137.2 billion as of 26 January (Chart 2.2.5).

Chart 2.2.5: CBRT's Gross International Reserves (Weekly, USD Billion)
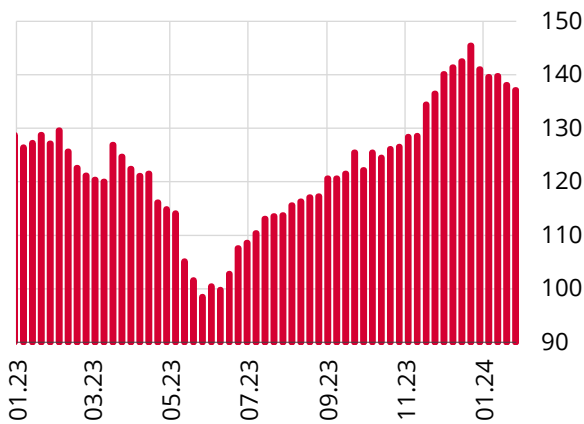
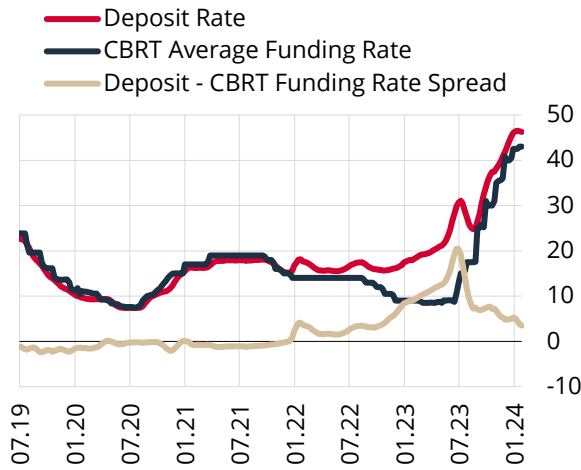Source: CBRT.

Chart 2.2.6: GDDS Yields (%)
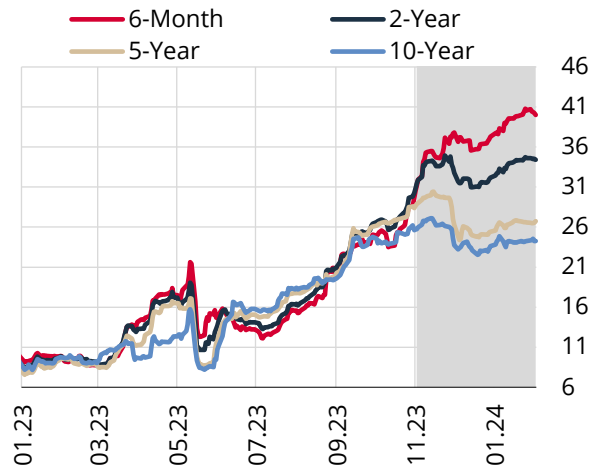
Source: Bloomberg.

In the current reporting period, in tandem with the higher policy rate, GDDS yields increased in short maturities, but declined in medium and long maturities (Chart 2.2.6). The slope of the GDDS yield curve, which turned to negative as medium and long-term yields fell below short-term yields, reflects that monetary tightening has become effective in anchoring market inflation expectations (Zoom-in 2.2).

Financial conditions tightened as a result of monetary policy decisions. Since the previous reporting period, deposit rates have risen further due to monetary and quantitative tightening as well as simplification decisions (Chart 2.2.7). In the current reporting period, the preference for Turkish lira deposits increased due to the rise in Turkish lira deposit rates, while the share of FX-protected deposits decreased (Charts 2.2.9 and 2.2.10). Although the rate of increase in the share of Turkish lira deposits slowed down in January, recent steps are expected to have a favorable effect on the attractiveness of Turkish lira deposits. Having surged in the previous reporting period amid the tightening process that started in June, Turkish lira commercial loan rates rose by 2.7 percentage points in the current reporting period and reached 53.5% as of January 26. In the same period, general purpose and housing loan rates
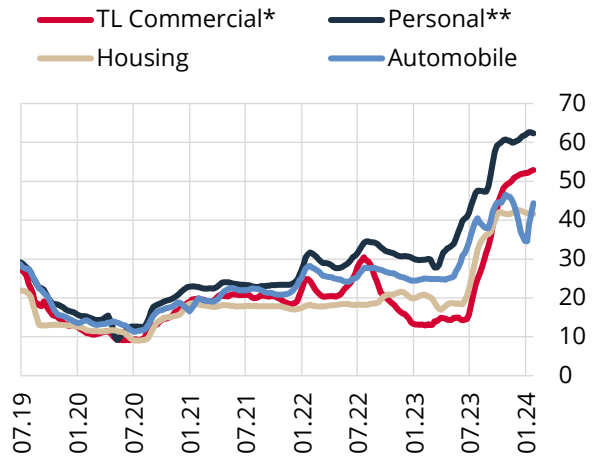
remained flat at 60.7% and 41.2%, respectively, while vehicle loan rates, which declined in December due to year-end campaigns, became 44.1% as of January 26, converging to the level of the previous reporting period.

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

Source: CBRT.

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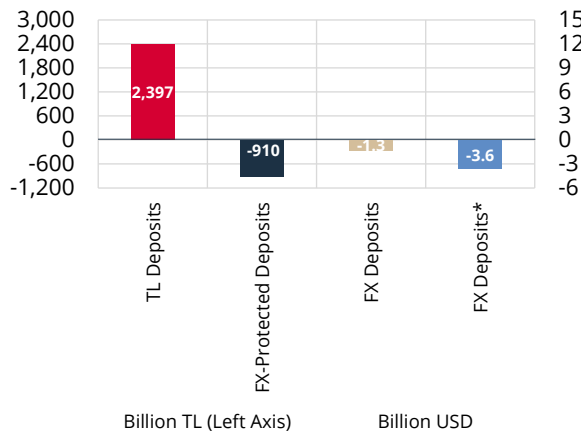(Flow, Four-Week Moving Average)

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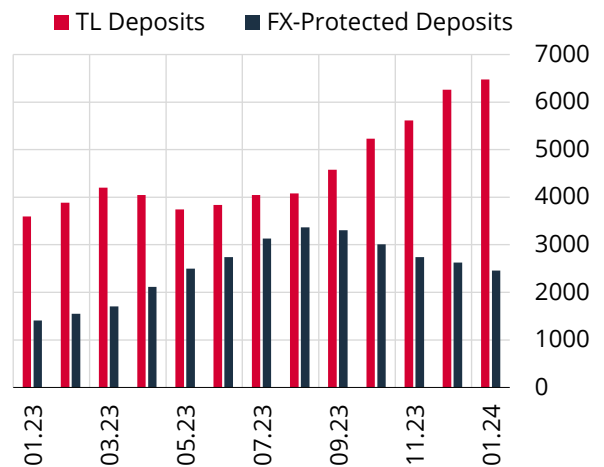** Excluding overdraft accounts.

Chart 2.2.9: Deposit Change
(25 August-26 January)

Source: CBRT.
* Adjusted for the parity and price effects.

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

Source: CBRT.

Chart 2.2.11: Loan Growth (13-Week Annualized Growth, Adjusted for Exchange Rates, %)
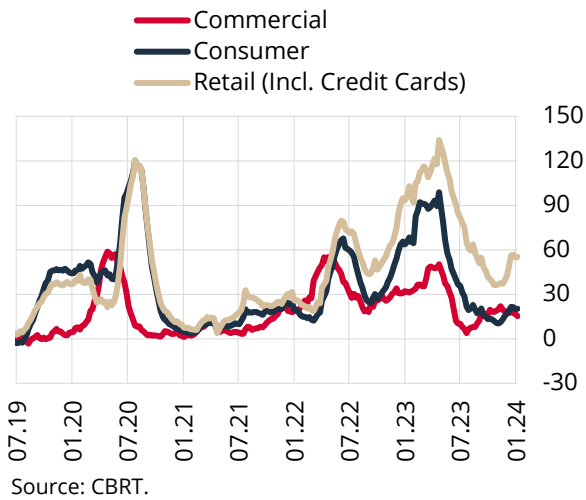

Source: CBRT.

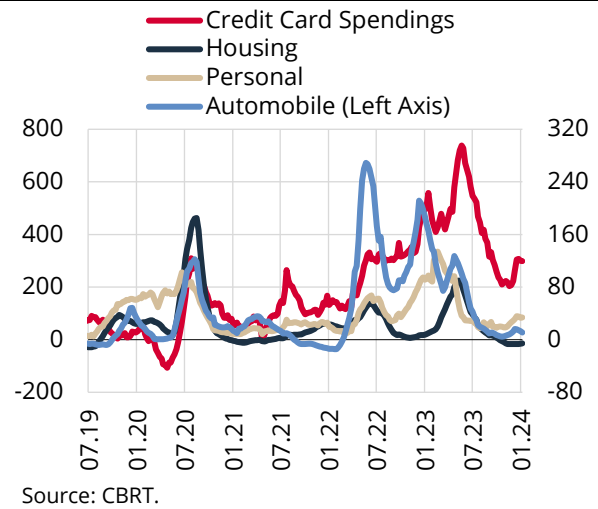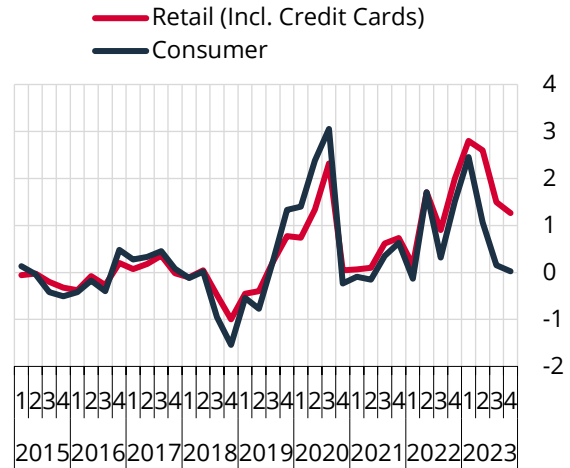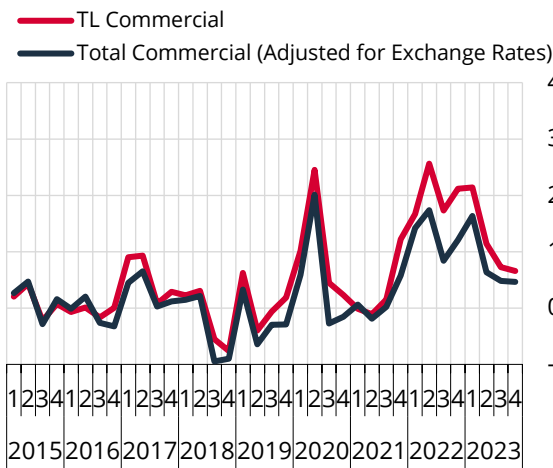**Chart 2.2.12: Retail Loan Growth** (13-Week Annualized Growth, %)

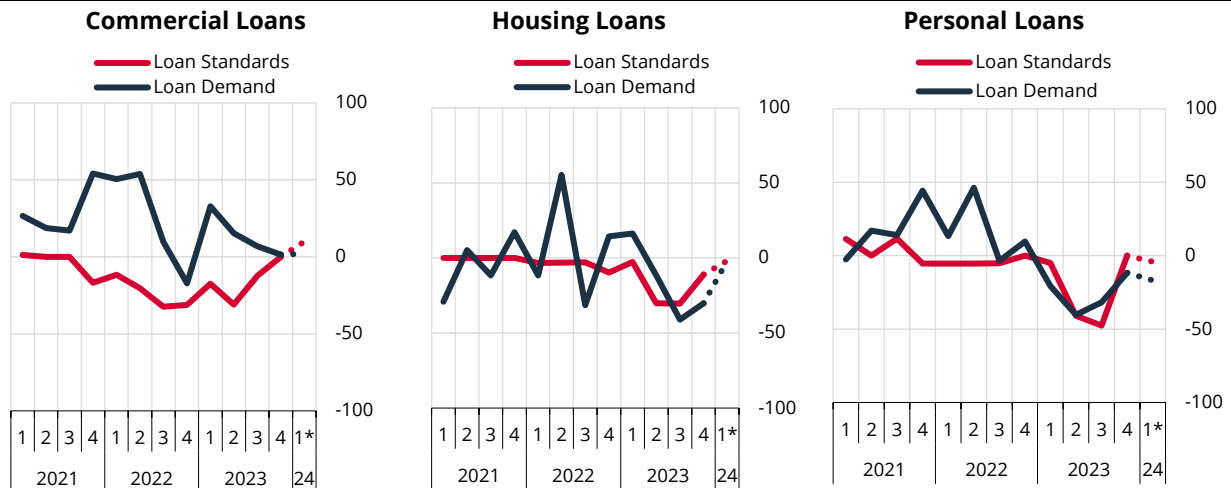Source: CBRT.

Chart 2.2.13: Credit Change* (Quarterly, 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 quarterly average is taken after weekly real changes are standardized.

Commercial loan growth is following a steady course, and the balancing process in retail loan growth is monitored closely. Balancing in the loan composition continues in tandem with the policy steps taken to simplify the current micro and macroprudential framework to enhance the functionality of market mechanisms and foster macro financial stability. The total commercial loan growth adjusted for exchange rate has remained flat since the previous reporting period. Campaigns to stimulate demand coupled with wage hikes kept retail loans brisk in late December and January. As of 26 January, the 13-week annualized growth rate was 15.2% in total commercial loans and 20.3% in consumer loans adjusted for the exchange rate effect (Chart 2.2.11). As of 26 January, the 13-week annualized growth rates of general-purpose and vehicle loans were 33.9% and 27.1%, respectively, while housing loan growth contracted further and stood at -5.9%. In the same period, the 13-week annualized growth rate of personal credit card balances was 119.3%. (Chart 2.2.12, Zoom-in 2.3). An analysis of real loan changes reveals that in the last quarter of 2023, consumer loans hovered above long-term averages, while total commercial loans converged to long-term averages (Chart 2.2.13). On the other hand, according to the Bank Loans Tendency Survey (BLTS), it is expected that while commercial loan demand will remain flat in the first quarter of 2024, the downward trend in housing loan demand will continue with a weaker pace, and the decline in general-purpose loan demand will grow stronger (Chart 2.2.14).

Chart 2.2.14: Loan Standards and Loan Demand*

Commercial Loans	Housing Loans	Personal Loans

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, show the direction of change in loan standards (loan demand). An index above zero indicates easing in loan standards (increase in loan demand).

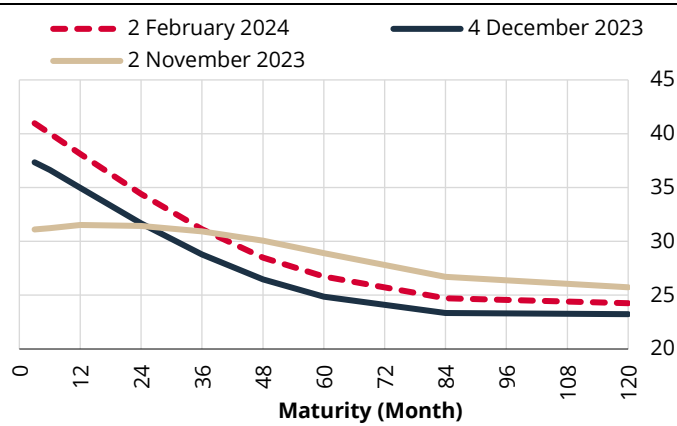# Zoom-in 2.2

Changes in the Yield Curve

As interest rates are closely related to all other financial variables, yield curves carry information about the current financial market conditions and future expectations for the economy. Short-term GDDS yields are expected to be closely associated with the current monetary policy rates, while long-term GDDS yields reflect current and future monetary policy expectations. In an environment where the monetary policy rate moves in tandem with key macro indicators, particularly inflation and growth, yield curves become a significant tool to interpret the markets' future expectations.

The simplification steps taken in the micro and macroprudential framework enhanced the ability for GDDS prices to be set within the market mechanism, while monetary tightening implemented in the meantime pushed GDDS yields upwards across all maturities. In 2023, between the publication dates of Inflation Reports No. III and IV, the one-year GDDS yield increased by around 16 points to 31.2%, while five-year and 10-year GDDS yields rose by 11.7 and 7.5 points to 28.9% and 25.7%, respectively. In the last quarter of the year, long-term GDDS yields started to fall despite the rate hikes, and the negative slope of the yield curve became more evident. As of 2 February, the one-year GDDS yield reached 38.1%, while the five and 10-year GDDS yields fell to 26.7% and 24.3%, respectively (Chart 1). This change in the shape of the yield curve reveals that market participants expect inflation and monetary policy rates to fall in the future. The appearance of disinflation on the yield curve reveals that the monetary policy transmission mechanism has been strengthened by the steps taken to this end.

Adoption of the disinflation process by all stakeholders in the economy is the key factor to ease the tight monetary policy trade-off. The fact that the GDDS market has a structure aligned with the monetary policy and macro indicators supports the domestic and external Turkish lira investment preferences and contributes to the disinflation process in turn. Enhancing the functionality of market mechanisms enables the monitoring of the inflation and monetary policy expectations of financial actors more accurately and strengthening of the monetary policy communication.

As the effects of monetary policy on the disinflation process become more pronounced, it is expected that the interest in the GDDS market will grow further, and the gains made through this channel will be sustained.

Chart 1: Treasury Bill Yield Curve (%)

Source: Bloomberg.

Zoom-in 2.3

Decomposition of Payment and Borrowing Motives for Personal Credit Card Expenditures

Monitoring credit card expenditures by decomposing payment and borrowing motives is important for analyzing the developments in household consumption demand. The use of credit cards as a payment instrument is gaining importance in the digitalizing economy. What is more, credit cards can also be considered as short-term borrowing instruments as they allow for cash advances and debt payments in instalments. While general-purpose and housing loans had the largest share in the growth composition of retail loans that are made up of consumer loans and credit card expenditures before 2020, the share of housing loans in retail loans declined after 2021, and personal credit cards gained importance (Chart 1). The 13-week retail loan growth of 11.6% in January 2024 largely stemmed from the contribution of 8.7 percentage points by personal credit card expenditures (Chart 2).

Chart 1: Retail Loan Composition (%, Share)
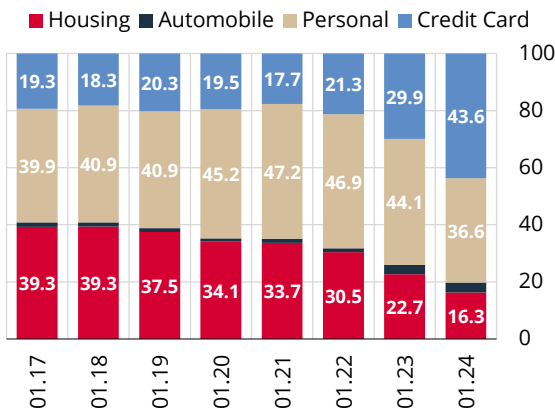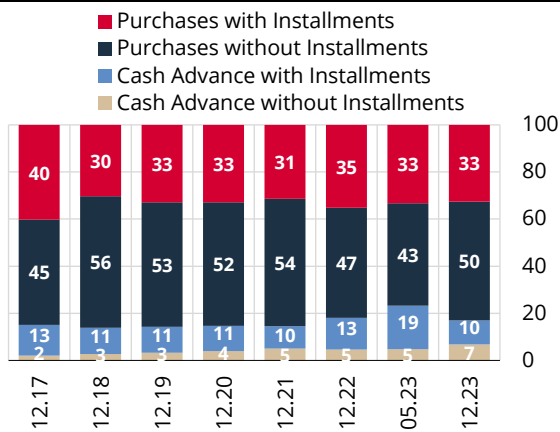

Source: CBRT.

Chart 2: Contributions to Retail Loan Growth (13-Week Total Contributions, %)
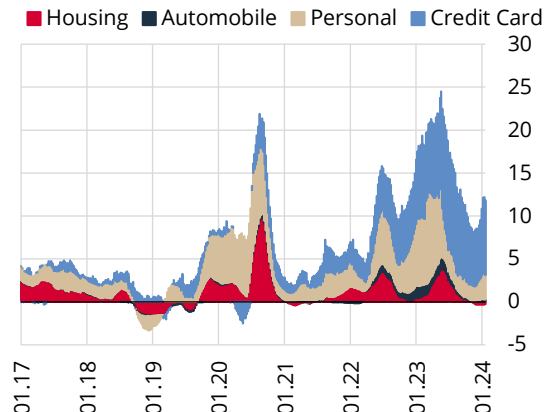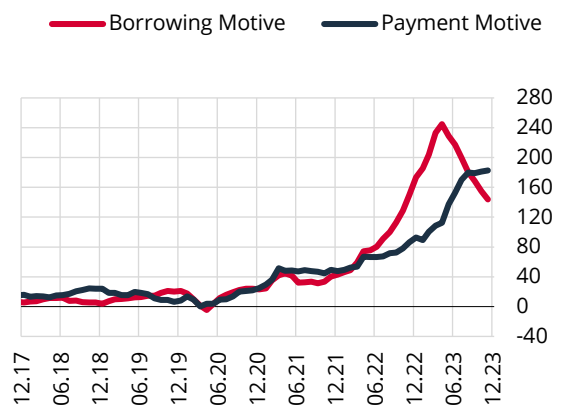

Source: CBRT.

The personal credit card balance is composed of the sum of four items: purchase of goods and services with/without installments and cash advances with/without installments. The share of cash advances with or without installments within total personal credit cards, which was 14.1% on average between 2017 and 2021, increased after the second half of 2022 due to the low interest rates on credit cards compared to deposit and general-purpose loans and hit a peak before the monetary tightening (Chart 3). Being shaped by price developments and financial deepening as well as the wider use of credit cards instead of cash, the share of credit card expenditures to purchase goods and services in total credit card expenditures has recently climbed to 83%. Meanwhile, as of the second half of 2022, the share of purchases of goods and services by installments in total purchases of goods and services increased due to the rising inflation, fell to its average level after the monetary tightening and recently stood at 39%.

Chart 3: Composition of Personal Credit Cards (%, Share)

Source: CBRT.

Chart 4: Annual Growth of Borrowing and Payment Motives for Personal Credit Cards (%)
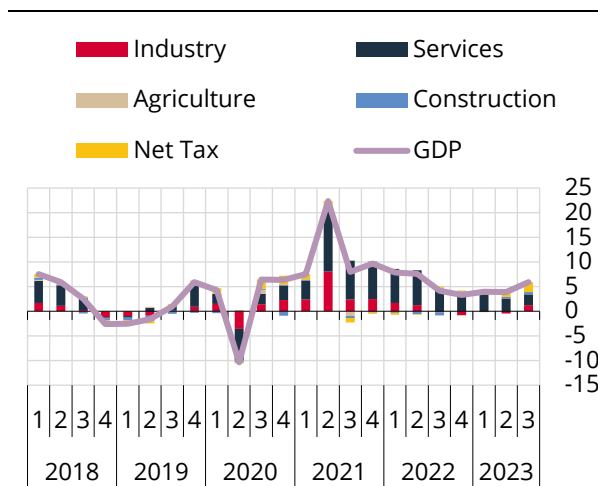

Source: CBRT.

Following the monetary tightening implemented in June, growth in credit card expenditures with a borrowing motive declined significantly. Cash advance balances of credit card expenditures with or without installments are closely related to the borrowing function of the credit card. Meanwhile, purchases of goods and services in installments also offer "borrowing" opportunities due to the term-payment function. On the other hand, purchase of goods and services without installments is generally associated with the payment motive of the credit card, yet it may also entail the borrowing motive as it allows the customer to postpone the payment for about one month. Due to data constraints, decomposition of credit card growth is based on the use of cards as instruments for motives of borrowing or payment. Here, it is assumed that total cash advance balances and purchases of goods and services in installments are led by the "borrowing instrument motive" and credit card expenditures for the purchase of goods and services without installments are driven by the "payment instrument" motive. Since June, credit card expenditure growth has weakened considerably due to monetary tightening and the resulting rise in the credit card interest rates. On the other hand, although the growth rate of credit card expenditures for payment motive has lost momentum, it remains well above the inflation rate (Chart 4).

2.3 Economic Activity

Supply and Demand Developments

Economic activity posted subdued quarter-on-quarter growth in the third quarter of 2023, indicating that the rebalancing in domestic demand has begun amid the effects of monetary tightening. In the third quarter, GDP increased by 5.9% year-on-year, while quarter-on-quarter growth slowed and stood at 0.3%. The services sector remained the main driver of annual growth on the production side in this period. The contribution of the industrial sector to annual growth turned positive after four quarters, while that of the construction sector increased further (Chart 2.3.1). Thus, the composition of growth on the production side displayed a more balanced outlook. On the expenditures side, the largest contribution to annual growth was from final domestic demand with 11.8 points. The majority of this contribution, amounting to 7.7 points, was driven by the increase in private consumption (Chart 2.3.2). Meanwhile, the contribution of private consumption to annual growth decreased due to the tightening in financial conditions. In this period, investments contributed 3.4 points to annual growth, with the largest contribution coming from machinery-equipment investments that carried their annual upward trend over into the sixteenth quarter. On a quarterly basis, final domestic demand slowed and became almost flat amid the contraction in private consumption, while net exports made a positive contribution to quarterly growth for the first time in four quarters. In sum, the composition of growth on the expenditures side displayed a more balanced outlook in the third quarter compared to previous quarters.

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)
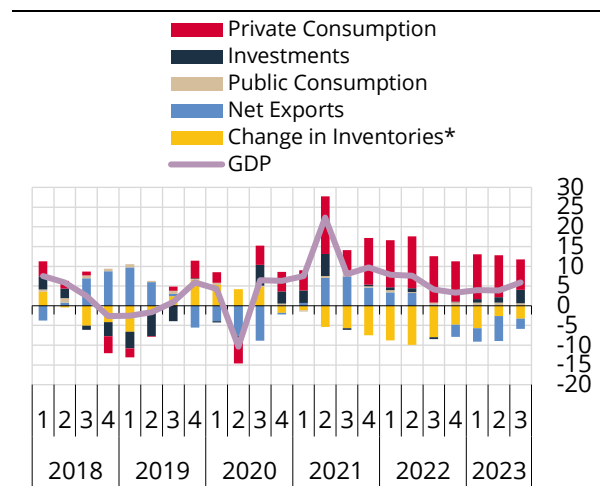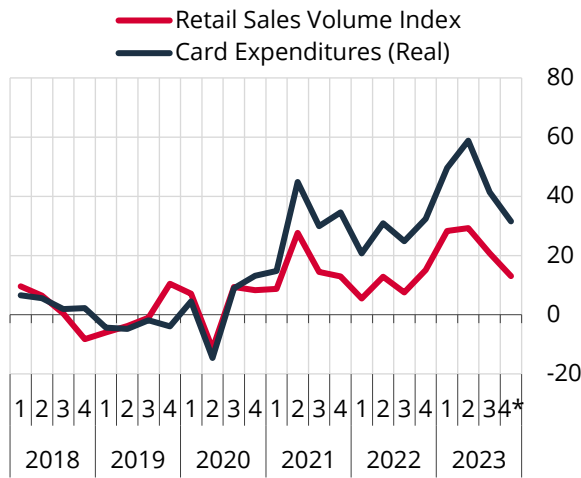

Source: CBRT, TURKSTAT.
* Includes changes in inventories and statistical discrepancy due to chain-linking.

Recent indicators and high-frequency data suggest that domestic economic activity continued to rebalance in the last quarter of 2023, while growth momentum slowed on an annual basis. The retail sales volume index sustained its increase on an annual basis in the fourth quarter as of November, albeit at a slower pace, while the index recorded a slight decline on a quarterly basis (Box 2.1). Card expenditures indicate that the quarterly increase in consumption demand continued in the fourth quarter amid intensified discount campaigns, while the annual rate of increase slowed down (Chart 2.3.3). In this period, white goods sales lost momentum on a quarterly basis, while automobile sales posted a slight increase driven by sales campaigns. Nevertheless, both automobile and white goods sales still hovered above their historical averages (Chart 2.3.4). In addition to the registered orders indicators of the BTS, field interviews also affirm the slowdown in domestic demand, which was more visible in the durable goods group despite the compensatory effects of price discounts and the demand brought forward in the last quarter (Box 2.2). On the other hand, January BTS data point to a slowdown in the deceleration in domestic demand on the back of the ongoing rebalancing brought about by the monetary tightening as well as with the contribution of the wage revisions made at the beginning of the year. Hence, manufacturing industry firms' registered domestic market orders posted an increase again in this period.

Chart 2.3.3: Consumption Indicators*
(Calendar Adjusted, Annual % Change, 2015=100)

Source: CBRT, TURKSTAT.
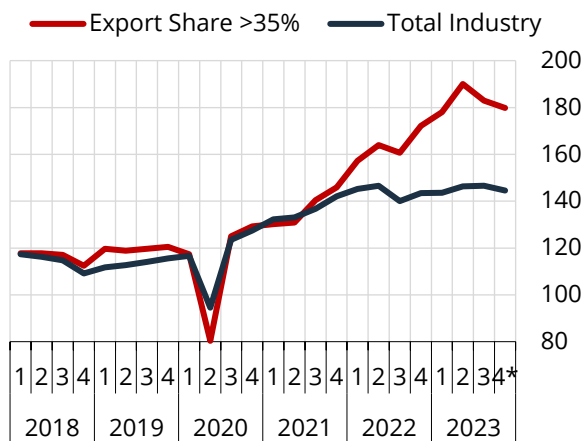* Average of October and November for retail sales volume index.

Chart 2.3.4: Sales of White Goods and Automobiles* (Thousand, Seasonally and Calendar Adjusted)
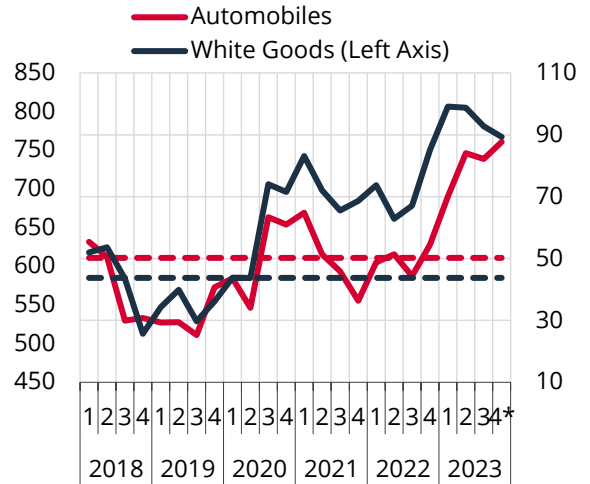
Source: CBRT, ODMD, TURKBESD.
* Average of October and November for white goods sales.
**Dashed lines show the average for the 2011-2019 period.

The ongoing weak foreign demand, coupled with the gradual slowdown in domestic demand, has a restraining impact on production indicators. As of November, in seasonally and calendar adjusted terms, industrial production dropped by 1.3% in the fourth quarter compared to the previous quarter (Chart 2.3.5). At 3.3%, the quarterly contraction in the manufacturing of consumption goods in this period was stronger than the overall contraction. Following the increase in November, the capacity utilization rate declined in December; however, it went up on a quarterly basis to 77.2% (Chart 2.3.6). In January, the capacity utilization rate was 76.4%, nearing its historical average.

Chart 2.3.5: Industrial Production Index
(Seasonally and Calendar Adjusted, 2015=100)

Source: TURKSTAT.
* Average of October and November.

Chart 2.3.6: Capacity Utilization Rate
(Seasonally and Calendar Adjusted, %)
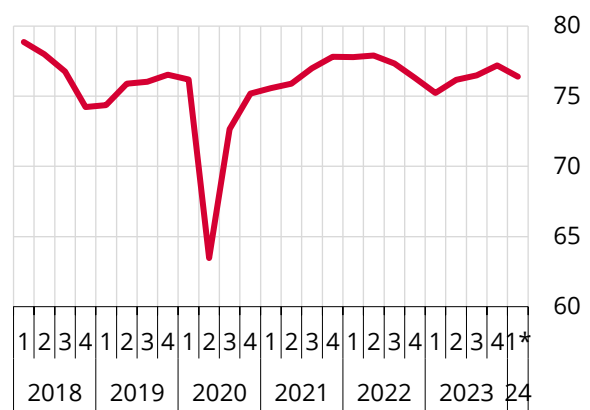
Source: CBRT.
* As of January.

Investment tendencies of manufacturing industry firms declined slightly in the last quarter of 2023 but displayed a nearly flat course in the first quarter of 2024 as of January (Chart 2.3.7). Indicators for the production of capital goods and foreign trade confirm the downward outlook for investments. As of November, production of capital goods excluding vehicles fell by 1.1% quarter-on-quarter, while imports thereof decreased by 3% quarter-on-quarter in the same period (Chart 2.3.8).

Chart 2.3.7: BTS Expectations for Fixed Capital Investment Spending and Employment (Up-Down, Seasonally Adjusted, %)
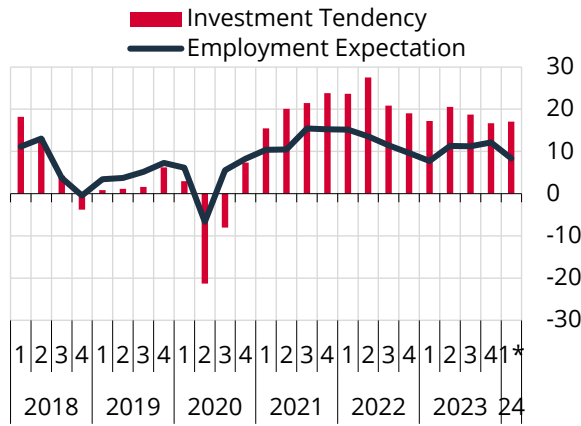
Source: CBRT.
* As of January.

Chart 2.3.8: Production and Import Quantity Indices of Capital Goods Excluding Vehicles (Seasonally Adjusted, 2015=100)
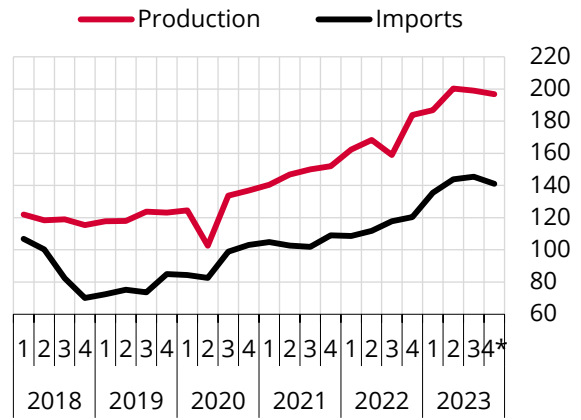
Source: CBRT, TURKSTAT.
* Average of October and November.

Labor Market Developments

Employment increased moderately in the last quarter. As of November, seasonally adjusted employment grew by 0.3% (80,000 people) on a quarterly basis. Meanwhile, the seasonally adjusted labor force participation rate inched down by 0.2 points to 53.0% (Chart 2.3.9). Thus, the unemployment rate decreased by 0.4 points to 8.8% in the fourth quarter of the year compared to the previous quarter. In this period, population growth had an upward effect of 0.16 points on the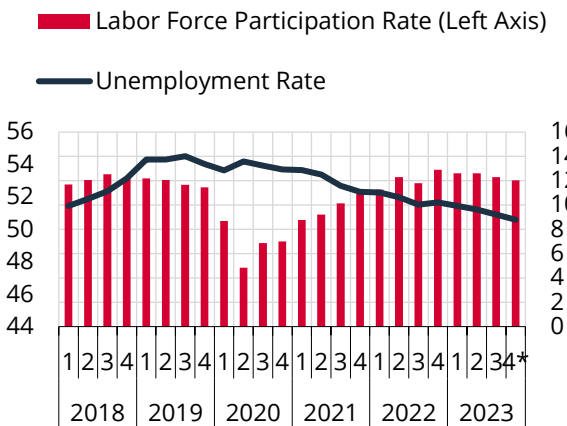 unemployment rate, whereas the increase in employment and the fall in the participation rate had a downward effect of 0.23 points and 0.35 points, respectively. Accordingly, the unemployment rate posted a decline on a quarterly basis (Charts 2.3.10 and 2.3.11).

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

Source: TURKSTAT.
* Average of October and November.

Chart 2.3.10: Contributions to Change in Total Unemployment Rate (Seasonally Adjusted, % Points)
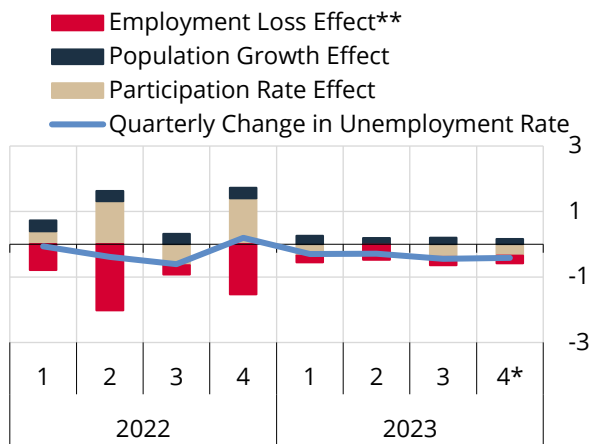
Source: CBRT, TURKSTAT.
* Average of October and November.
** Negative value of the employment loss effect indicates an increase in employment.

High-frequency data suggest that demand has slightly weakened in the labor market. As of January, new job postings edged slightly below the previous year's readings. Survey data for manufacturing industry firms indicate that the employment outlook of firms has deteriorated somewhat, while employment expectations for the next three months remain strong, albeit with a slight decline (Chart 2.3.12).

Chart 2.3.11: Total Employment (Seasonally Adjusted, Million People)
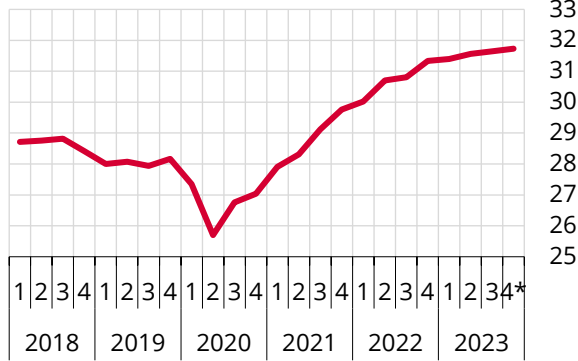
Chart 2.3.12: Employment Outlook and Expectation in the Industrial Sector** (Seasonally Adjusted, Up-Down)
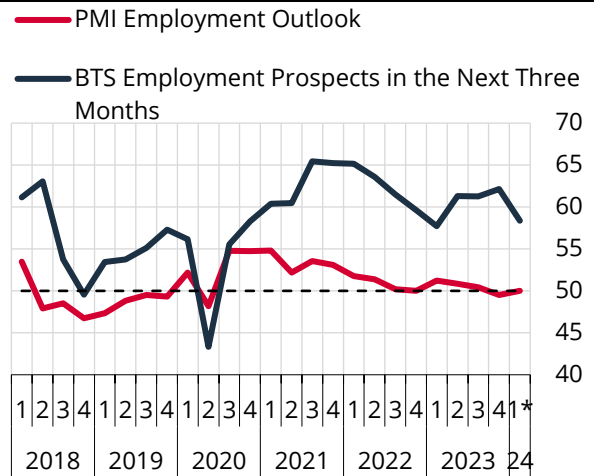
The increase in real terms in the non-farm gross wage and payroll index slowed down further in the third quarter of the year (Chart 2.3.13). Likewise, the quarterly increase tendency in the seasonally adjusted real earnings index observed across sectors lost momentum in the third quarter and turned negative for the industrial sector (Chart 2.3.14). The gross minimum wage was set at TRY 20,002 and the net minimum wage at TRY 17,002 for 2024. Thus, the minimum wage increase rate was approximately 49.0% compared to the last quarter of 2023 and approximately 100% compared to January of the previous year.

Chart 2.3.13: Non-Farm Gross Wage and Payroll Index (Seasonally Adjusted, Quarterly % Change)
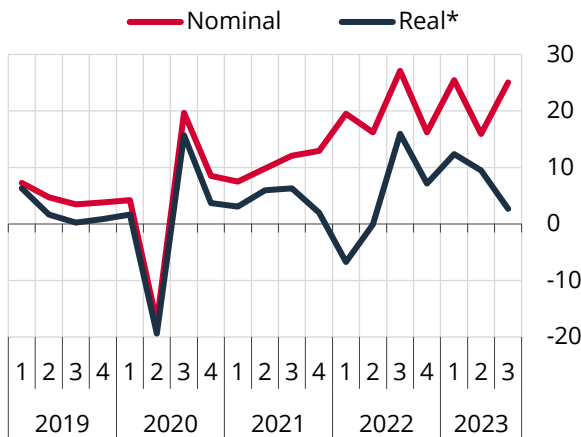
Chart 2.3.14: Non-Farm Hourly Earnings Index* (Seasonally Adjusted, Quarterly % Change, Real)
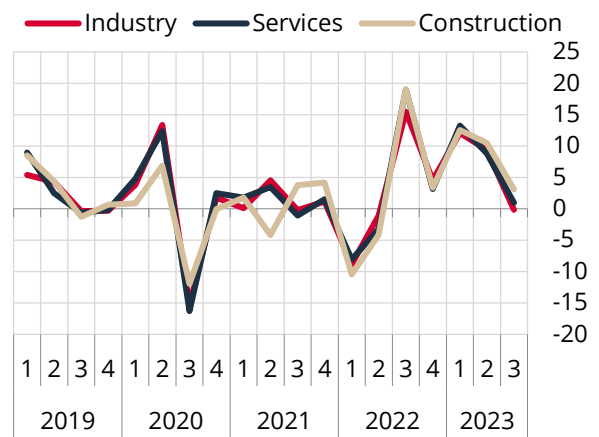
Foreign Trade and Balance of Payments Outlook

Exports increased in the fourth quarter of 2023, while imports edged down. Seasonally and calendar adjusted exports, which remained virtually unchanged in the third quarter, picked up in the last quarter of the year despite weak demand conditions in major export markets (Chart 2.3.15). In this quarter, unprocessed gold contributed significantly to export growth, with vehicles, chemical products, mineral fuels, and food also making positive contributions. Exports to the Middle East and Africa increased in the last quarter, while exports to other regions, particularly Europe, declined (Zoom-In 2.4). Amid the

rebalancing in domestic demand on the back of the monetary tightening that has been reflected in financial conditions, the import bill excluding gold and energy decreased in the third quarter and remained almost flat in the last quarter (Chart 2.3.16). Meanwhile, imports excluding unprocessed gold increased in the last quarter in line with the quarterly rise observed in energy imports. Once unprocessed gold imports, which dropped significantly, are included, total value of imports was slightly down in the last quarter. Accordingly, the seasonally and calendar adjusted foreign trade deficit narrowed further in the last quarter of the year. The provisional data on foreign trade point to a relatively flat course of the foreign trade balance in January compared to the previous month.

Chart 2.3.15: Exports (Seasonally and Calendar Adjusted, USD Billion)
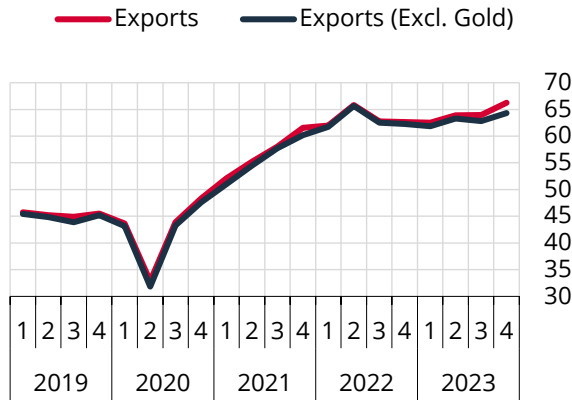
Source: CBRT, TURKSTAT.

Chart 2.3.16: Imports (Seasonally and Calendar Adjusted, USD Billion)
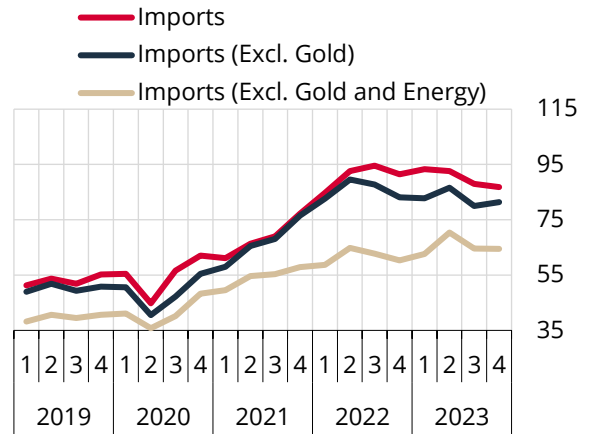
Source: CBRT, TURKSTAT.

In the last quarter, in which the terms of trade declined, the export quantity index increased while the import quantity index decreased. According to the foreign trade unit value indices for the last quarter, calculated using the October and November averages, export prices were slightly down, while import prices were slightly up (Chart 2.3.17). Thus, the terms of trade decreased, adversely affecting the foreign trade balance. However, seasonally and calendar adjusted exports and imports, calculated using the October-November averages, increased and decreased, respectively, thereby improving the foreign trade balance (Chart 2.3.18). On the back of the gold foreign trade measures and monetary tightening, unprocessed gold stood as the main driver of the rise in exports and the fall in imports in the last quarter. High-frequency data suggest that the decline in gold imports persisted in December.

Chart 2.3.17: Foreign Trade Unit Value Indices (2015=100)
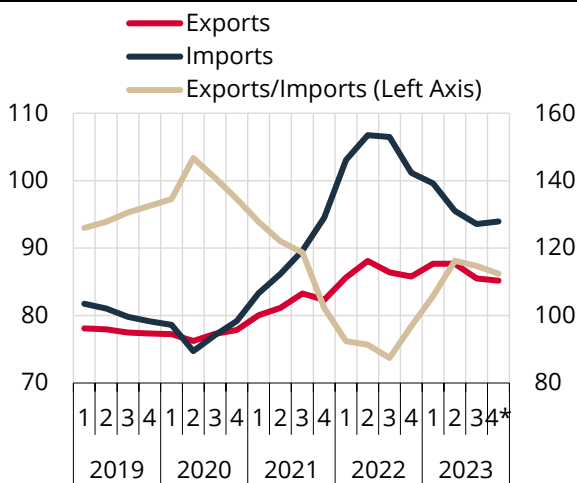
Source: TURKSTAT.
* Average of October and November.

Chart 2.3.18: Foreign Trade Quantity Indices (Seasonally Adjusted, 2015=100)
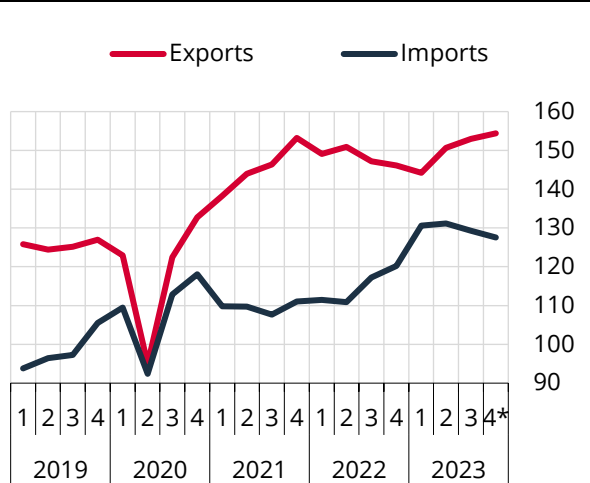
Source: CBRT, TURKSTAT.
* Average of October and November.

The services balance maintained its strong outlook, backed by travel revenues. As of November, the services balance surplus sustained its robust performance in the last quarter of 2023 as the surplus in the seasonally and calendar adjusted travel revenue balance remained high, and the transportation revenue

balance followed a flat course (Chart 2.3.19). Despite the new regional geopolitical issues that emerged in the last quarter, the rise in the number of seasonally and calendar adjusted foreign visitors proved to be the main driver of the increase in travel revenues (Chart 2.3.20). Leading indicators suggest that the number of visitors will remain relatively high in December and continue to contribute positively to the travel revenue balance.

Chart 2.3.19: Services Balance (Seasonally and Calendar Adjusted, USD Billion)
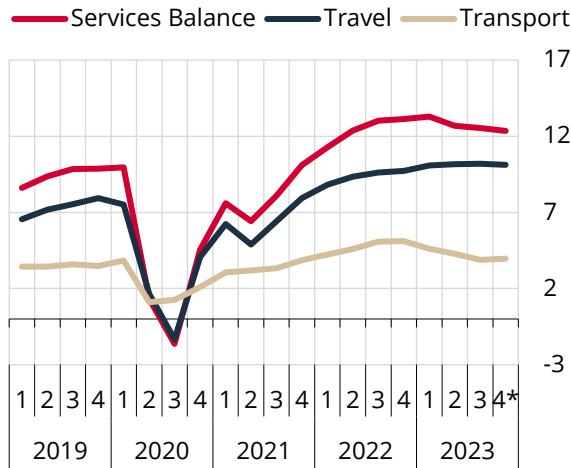
Source: CBRT.
* Average of October and November.

Chart 2.3.20: Number of Foreign Visitors (Seasonally and Calendar Adjusted, Million People)
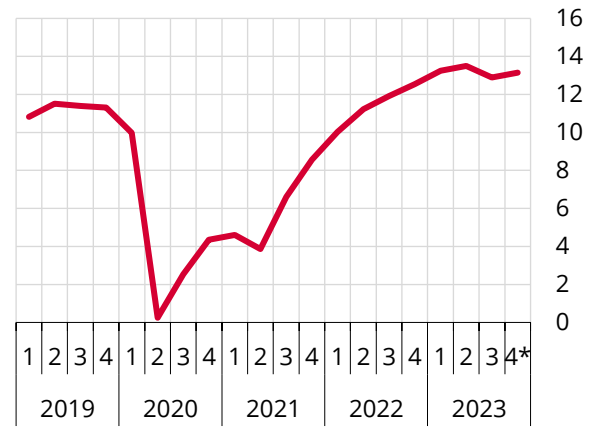
Source: CBRT.
* Average of October and November.

The current account deficit narrowed in the last quarter amid the fall in the foreign trade deficit and the strong course of the services balance. Despite the deterioration in the primary income balance, the seasonally and calendar adjusted current account deficit narrowed in the last quarter compared to the previous quarter due to the decline in the foreign trade deficit and the strong contribution of the services balance (Chart 2.3.21). The balance of payments-defined foreign trade balance improved in this quarter as seasonally and calendar adjusted exports increased and imports decreased. While the gold foreign trade deficit narrowed, the energy foreign trade deficit widened due to the rise in imports. The current account surplus excluding gold and energy declined quarter-on-quarter amid the deterioration in the primary income balance. Moreover, the normalization trend in loans in the last quarter contributed to the narrowing of the current account deficit by alleviating demand-driven upward pressures.

Chart 2.3.21: Current Account Balance
(Seasonally and Calendar Adjusted, USD Billion)
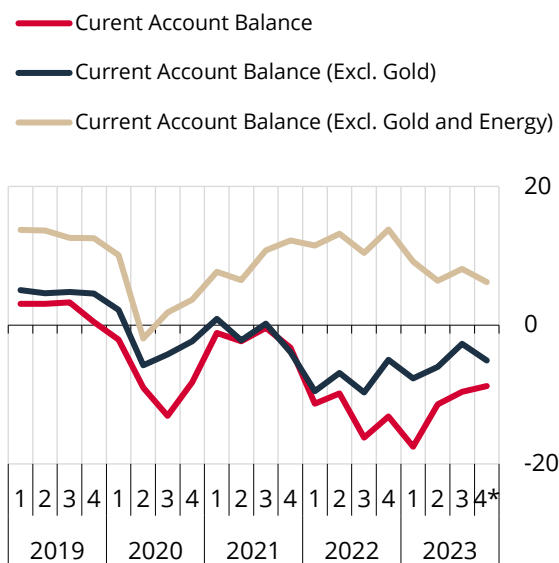
Source: CBRT.
* Average of October and November.

Chart 2.3.22: Financing of the Current Account Deficit (USD Billion)
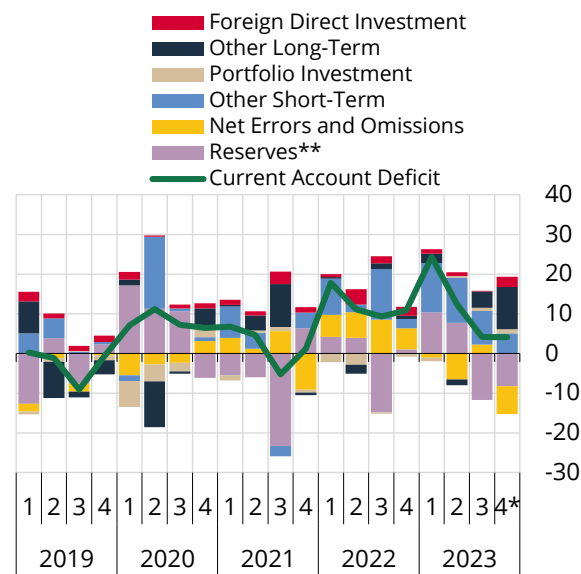
Source: CBRT.
* Average of October and November.
** Denotes the CBRT reserves plus the cash and deposits at banks abroad. A negative value indicates an increase in reserves.

Reserve build-up continued in the last quarter on the back of the narrowing current account deficit and net capital inflows. The net capital inflows that exceeded the current account deficit in the second half of the year, when tight monetary policy was implemented, were instrumental in the increase in reserves (Chart 2.3.22). As of November, the capital inflows in the last quarter of 2023, mainly through long-term loans and Eurobond issuances, more than offset both the current account deficit and net errors and omissions-driven outflows, and led to a significant rise in reserves. December data indicate that reserves continued to increase in the last month of the year as well.

Public Finance Developments

The central government budget had a more favorable outlook in 2023 compared to the Medium-Term Program (MTP) projections, which mainly stemmed from revenues rather than expenditures.
Consequently, the ratio of expenditures to the MTP realization forecast was 100.3%, while that of revenues was 105.7%. In 2023, the budget deficit was TRY 1,375.0 billion, and the primary deficit was TRY 700.4 billion. The budget deficit-to-GDP ratio, which was forecast at 6.4% in the MTP, is estimated to stand at 5.4% (Zoom-In 2.5). The annual rate of increase in primary expenditures and interest expenditures was 124.6% and 117.0%, respectively. The earthquake-related expenditures in February played an important role in the rise in primary expenditures, and the ratio of the earthquake-related expenditures to GDP was announced to be 3.7% (TRY 950 billion). Moreover, the adjustments made in the salaries of civil servants and pensioners as well as the EYT (early retirement package) regulation, which entered into force in 2023, stood out as factors pushing up primary expenditures. Meanwhile, tax revenues and non-tax revenues increased by 91.2% and 58.9%, respectively. The contribution of revenues to the budget was mainly driven by restructuring revenues and the revenue-raising measures introduced in July. However, the relatively limited increase in non-tax revenues was mainly led by the fact that the CBRT's dividend and reserve fund transfers, which were TRY 54.3 billion in 2022, have amounted to TRY 40 billion this year.

Zoom-In 2.4
Global Growth Outlook and Exports

In 2024, the global growth outlook is expected to remain weak, with the euro area in particular projected to grow below potential in 2024 as it did in 2023. The growth outlook has weakened since the second half of 2023 as global monetary policies' effects on demand have become more evident and the services sector, as the driver of economic activity in particular, has lost momentum. Even though a gradual normalization in monetary policies is expected, global financial conditions are projected to remain tight, and the weak growth outlook is expected to persist in 2024 in order to drive inflation to converge with target rates. On the other hand, geopolitical risks remain alive, with the Chinese economy faced with issues such as the deflation threat, low consumer confidence, and particularly the risks related to the real estate market. This has an adverse impact on the euro area's growth outlook through foreign demand. Accordingly, many economies are projected to grow below potential in 2024. The export-weighted global growth index, an important indicator for Türkiye's foreign demand outlook, is forecast to grow by approximately 2% throughout the year, remaining below the pre-pandemic 10-year average of 2.5%. Meanwhile, the growth rate for the euro area is expected to be lower than the overall index (Chart 1).

Chart 1: Export-Weighted Growth Index
(Average Annual Change, %)
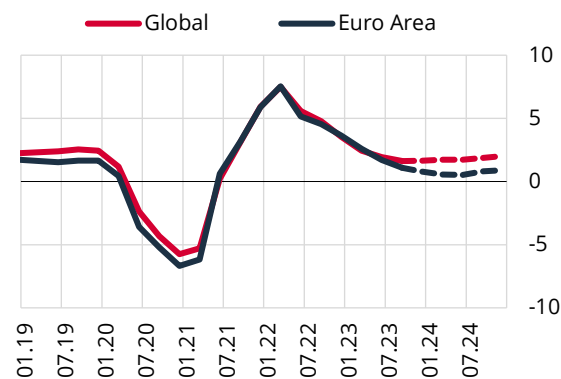
Source: Consensus Economics, S&P Global.

Chart 2: Foreign Demand Elasticity of Exports (%)
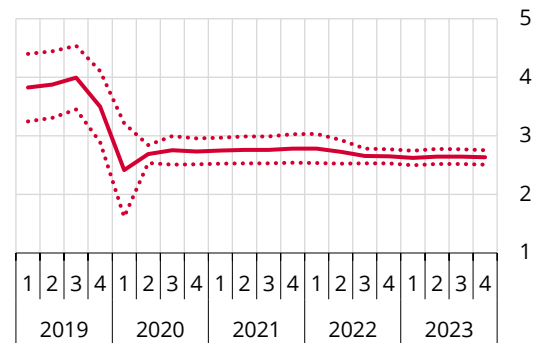
Source: CBRT calculations.

However, the dynamism of the exporting sectors in changing their orientations mitigates the adverse effects of the economic downturn on our exports, in particular in European countries, our largest trading partners. Research conducted within the CBRT on the determinants of the export performance in Türkiye reveals that the main determinant of exports is foreign demand, which denotes the income level of exporting countries. The real exchange rate, on the other hand, which denotes relative prices, has a more limited effect. Foreign demand elasticity estimates obtained with the sliding window method through the export demand function, which is estimated with a standard error correction model, point to a decline in the sensitivity of exports to foreign demand during and after the pandemic (Chart 2). This decline is attributed to the transformation in exports achieved through product and market diversification, coupled with other factors that emerged in the same period. The global supply problems faced during the pandemic were instrumental in increasing Türkiye's share in global trade, owing to its advantageous location. Moreover, expanding its diversity of products and countries in exports further eased Türkiye's vulnerability to external shocks. Despite the significant deterioration in the global growth outlook since the second half of 2022, the ongoing flat course of exports supports this finding. Accordingly, exports have become more resilient to the projected weakness in foreign demand in the upcoming period compared to the pre-pandemic period, backed by exports becoming more broad-based in recent years and the targeted credit programs implemented by the CBRT.

Zoom-In 2.5

2023 Budget Realizations and Public Fiscal Stance Under the Medium-Term Program

The central government budget posted a budget deficit of TRY 1,375 and a primary deficit of TRY 700.4 billion in 2023 (Table 1). The budget balance-to-GDP ratio, which was forecast at -6.4% in the MTP, is estimated to be -5.4% (Table 2).

The more favorable budget realization compared to the MTP forecast stems from revenues rather than expenditures. In comparison to the MTP realization forecast, expenditures stood at 100.3%, while revenues were at 105.7% (Table 1). The contribution of revenues to the budget was mainly driven by restructuring revenues and the revenue-raising measures introduced in July. However, the relatively limited increase in non-tax revenues was mostly due to the fact that the CBRT's dividend and reserve fund transfers amounted to TRY 40 billion this year from TRY 54.3 billion in 2022.

The earthquakes in February had a major role in shaping the primary expenditures. In July, a supplementary budget was issued to meet the resource needs stemming from earthquake-related expenditures. The 2023 budget includes earthquake-related expenditures amounting to TRY 950 billion (3.7% relative to GDP). The budget balance-to-GDP ratio excluding earthquake-related expenditures is more favorable at -1.7%. In addition to the adjustments made in the salaries of civil servants and pensioners, the EYT (early retirement package) regulation's entry into force in 2023 has also been instrumental in the increase in primary expenditures. Consequently, the budget balance-to-GDP ratio went up from -1% in 2022 to -5.4% in 2023 (Table 2).

Table 1: Central Government Budget Aggregates

	2022 Realizations (TRY Billion)	2023 Realizations (TRY Billion)	2023 Budget Targets[1,2] (TRY Billion)	2023 MTP Realization Forecast (TRY Billion)	Annual Increase (%)	Realizations-to-MTP Realization Forecast (%)
Expenditures	**2,942.7**	**6,585.5**	**5,589.1**	**6,562.6**	**123.8**	**100.3**
Primary Expenditures	**2,631.8**	**5,910.8**	**4,942.9**	**5,916.5**	**124.6**	**99.9**
Personnel Expenditures	615.3	1,324.5	952.3	1,326.5	115.3	99.8
Social Security Institution Government Contributions	96.9	185.7	150.4	183.2	91.7	101.4
Goods and Services Procurement Expenditures	257.7	452.9	419.4	471.0	75.8	96.2
Current Transfers	1,126.4	2,373.6	1,940.9	2.501.6	110.7	94.9
Capital Expenditures	276.9	543.0	383.3	538.8	96.1	100.8
Capital Transfers	48.8	858.1	521.0	685.1	1657.5	125.3
Lending	209.9	173.0	410.4	210.4	-17.6	82.2
Interest Expenditures	**310.9**	**674.6**	**646.1**	**646.1**	**117.0**	**104.4**
Revenues	**2,800.1**	**5,210.5**	**4,929.7**	**4,929.7**	**86.1**	**105.7**
Taxes/Tax Revenues	2,353.4	4,500.9	4,270.7	4,270.7	91.2	105.4
Non-Tax Revenues	446.7	709.6	659.0	659.0	58.9	107.7
Budget Balance	**-142.7**	**-1,375.0**	**-659.4**	**-1,633.0**	**-**	**84.2**
Primary Balance	**168.2**	**-700.4**	**-13.3**	**-986.8**	**-**	**71.0**

Source: Ministry of Treasury and Finance.

The MTP has set the budget deficit-to-GDP ratio for 2024 at 6.4%. The ratio of budget revenues to national income is stated to be 20.5%, while budget expenditures to be 26.9% (Table 2). The earthquake-related expenditures will be the main determinant of budget expenditures in 2024. The program allocates TRY 1,028 billion for earthquake-related expenditures, which corresponds to 2.5% of the GDP realization forecast specified in the program. Accordingly, the budget deficit-to-GDP ratio excluding earthquake-related expenditures is set to remain below 4% (3.9%).

The MTP forecast horizon of 2024-2026 aims to gradually restore fiscal discipline and adopts an outlook in which fiscal adjustment is to be achieved through savings in primary public expenditures. Thus, the budget deficit-to-GDP is forecast to decline to 2.9% by the end-2026 from 6.4% in 2024. The ratio of primary expenditures to national income is targeted to be 23.9% in 2024, with the following two years targeted to be 20.6% and 19.9%, respectively. Tax revenues are estimated to stabilize at 18.0% (Table 2). The projected improvement in the budget balance, set to be achieved through a reduction in primary expenditures rather than an increase in tax revenues, indicates that the fiscal policy will support the fight against inflation. The success of the disinflation process depends on the coordination of monetary and fiscal policies.

Table 2: 2023 Realizations and MTP (2024-2026) **Forecasts of Central Government Budget** (% of GDP)

	2022 Realizations	2023 Realizations[3]	2023 MTP Realization Forecast	2024 MTP	2025 MTP	2026 MTP
Expenditures	**19.6**	**25.8**	**25.8**	**26.9**	**24.0**	**23.5**
Primary Expenditures	17.5	23.2	23.2	23.9	20.6	19.9
Interest Expenditures	2.1	2.6	2.5	3.0	3.4	3.6
Revenues	**18.7**	**20.4**	**19.3**	**20.5**	**20.6**	**20.6**
Taxes/Tax Revenues	15.7	17.7	16.8	18.0	18.0	18.0
Non-Tax Revenues	3.0	2.8	2.6	2.5	2.6	2.6
Budget Balance	**-1.0**	**-5.4**	**-6.4**	**-6.4**	**-3.4**	**-2.9**
Primary Balance	**1.1**	**-2.7**	**-3.9**	**-3.4**	**0.0**	**0.7**

Source: Ministry of Treasury and Finance.

2.4 Inflation

Consumer inflation rose by 3.24 points in the last quarter of 2023 to 64.77%, ending the year at a level close to the mid-point of the forecast range presented in the previous Inflation Report. This course close to the mid-point of the forecast range was also maintained in January. Significant cost increases led by the combination of multiple shocks in the third quarter were largely reflected on final prices (Zoom-in 2.6). USD-based commodity prices receded in the last quarter, especially in the energy group. Supply conditions were milder, except for the geopolitical developments in January, and exchange rates followed a stable course. Against this background, producer prices-driven pressures weakened. Despite the favorable course of international energy prices, as the limit for free use of natural gas was exceeded amid seasonal conditions, domestic energy prices recorded an upsurge on a quarterly basis in line with projections. Due also to the effects of monetary tightening on domestic demand, the underlying inflation decelerated more than projected in the previous report, and inflation expectations as well as the distribution of expectations improved (Box 2.1). In this period, the

---

[1] Budget targets are the sum of the budget forecasts presented in the initial budget and the supplementary budget.
[2] The 2023 primary expenditure appropriation includes the reserve appropriation item amounting to TRY 165.2 billion.
[3] The 2023Q4 GDP realizations are to be published on 29 February 2024. Figures presented here are calculated using the nominal GDP realization forecast in the MTP.

contribution of subgroups to annual inflation exhibited an increase in energy and services sectors, and almost a flat course in other subgroups (Table 2.4.1, Charts 2.4.1 and 2.4.2).

Consumer inflation rose in January in line with the forecasts in the previous Inflation Report. Despite the dampening effect of monetary and financial conditions, demand is still at an inflationary level as of early 2024. This is mainly due to wage hikes, which will be effective primarily in the first quarter of the year through the demand channel in addition to the cost channel. In recent years, the demand effect of wage increases has become increasingly more apparent due to the notable impact of the biannual revision of the minimum wage. Accordingly, the minimum wage will be revised once in 2024, which will contribute to the effectiveness of monetary tightening in the second quarter of the year. In addition to wages, monthly inflation increased temporarily in January due to time-dependent pricing items, in line with the forecasts in the previous Report. This increase is expected to slow down from February onwards, and the underlying trend is expected to converge to the values in the last quarter of 2023 in the first half of the year (Box 2.3).
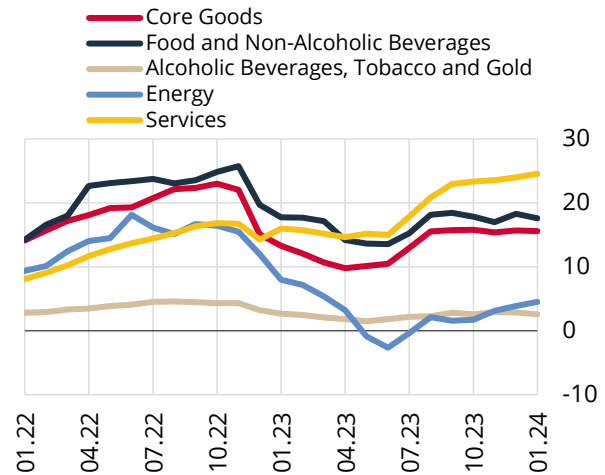
Chart 2.4.1: CPI, D-PPI, B Index and C Index*
(Annual % Change)
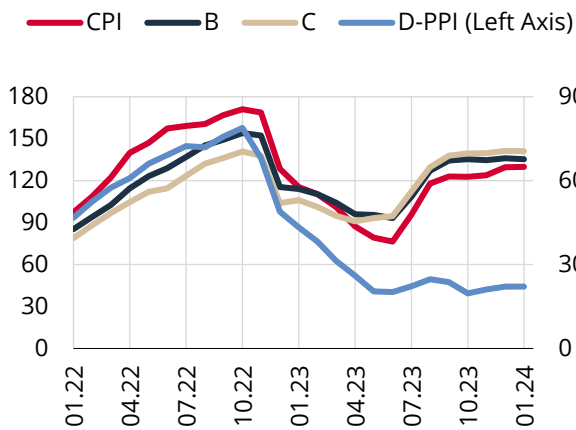
Source: TURKSTAT.
* B index: CPI excluding unprocessed food, energy, alcoholic beverages-tobacco and gold. C index: CPI excluding food and non-alcoholic beverages, energy, alcohol-tobacco and gold.

Chart 2.4.2: Contributions to Annual CPI
(% Points)

Source: CBRT, TURKSTAT.

In the last quarter, indicators for the underlying trend of inflation lost momentum. In the last quarter of 2023, seasonally adjusted monthly increases in the B and C indices, which posted a significant upsurge in the third quarter, remained below the trend in the first half of 2023 (Chart 2.4.3). The seasonally adjusted average monthly increases in the B and C indices were 2.8% and 3.0%, respectively in the fourth quarter (5.3% and 4.9% in September). Alternative indicators such as median inflation, SATRIM and dynamic factor-based indicators also displayed a similar trend and confirmed this outlook (Chart 2.4.4). The rate of increase in core indicators was more favorable than projected in the previous Report. An analysis of the subcategories of the B index reveals that monthly price increases declined in all subcategories in the last quarter, while the slowdown in core goods stood out (Chart 2.4.5). In this period, the quarterly price increase in processed food remained relatively strong, albeit at a slower pace compared to the previous quarter. Likewise, the services group, which has a strong tendency for inertia, was another subcategory which remained strong albeit decelerating from the previous quarter, with a quarterly price hike of 12.10%. Among services subcategories, transport prices recorded the most notable deceleration in line with the developments in fuel prices, while the performance of the restaurants-hotels subcategory was shaped by the slowdown in catering services prices as well as the quarterly decline in the prices of accommodation services. Quarterly inflation in the other services subcategory lost considerable momentum compared to the previous quarter with the completion of the effects of education services. On the other hand, despite the slowdown in the rate of increase in rents, the uptrend in annual terms continued (Box 2.4). Moreover, in communication services with contractual price rigidities, price increases remained strong on account of internet and phone call charges (Table 2.4.1). Against this background, the contribution of services to annual consumer inflation rose by 1.04 points to 23.99 points quarter-on-quarter (Chart 2.4.2). Thus, the largest contributor of consumer inflation across the year was the services group (Chart 2.4.1). In January, monthly services inflation rose significantly due to the impacts of wage adjustments on labor-

intensive services items, with the minimum wage in the lead, accompanied by the effects of items with high tendency for time-dependent price setting and regulated services items (Box 2.3 and Zoom-in 2.7). In the last quarter, the main driver of the slowdown in core inflation indicators was the price developments in core goods (Table 2.4.1). Due to the course of automobile prices, durable goods recorded the lowest quarterly increase (3.89%) since September 2021. In this period, prices in furniture and white goods registered quite weak increments (Table 2.4.1). The last quarter was marked by campaigns introduced by firms in the durable goods sector to deplete their inventories. In January, price hikes were seen in durable goods and other core goods subcategories that were fueled by cost increases.

Chart 2.4.3: B and C Indices (Seasonally Adjusted, Monthly % Change)
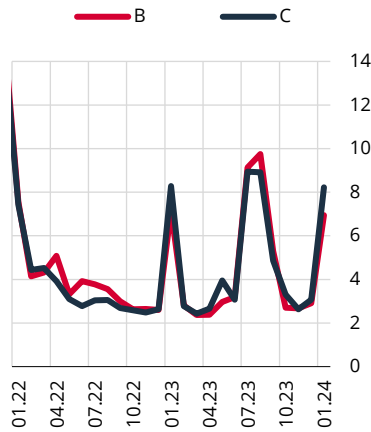
Chart 2.4.4: Main Inflation Indicators SATRIM* and Median** (Monthly % Change)

Chart 2.4.5: Subgroups of B Index (Seasonally Adjusted, Monthly % Change)

Source: CBRT, TURKSTAT.
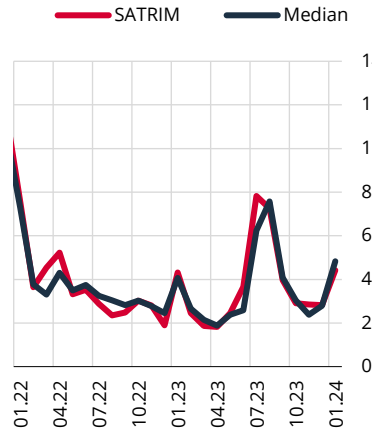
Source: CBRT, TURKSTAT.
* SATRIM: Seasonally adjusted trimmed mean inflation.
** Median: Median monthly inflation of seasonally adjusted five-digit sub-price indices.
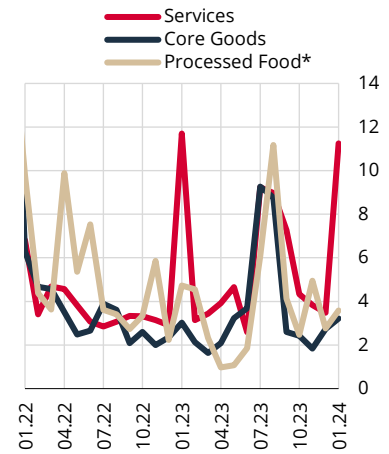
Source: CBRT, TURKSTAT.
* No seasonality detected for processed food.

In the last quarter, despite the positive effect of international oil prices, energy prices posted an increase as higher consumption drove usage above the limits for free natural gas (Chart 2.4.6, Table 2.4.1). Domestic energy prices soared by 17.08% in the last quarter, in line with the developments in natural gas prices (Table 2.4.1). The international Brent crude oil price, which was USD 94 on average in September, ended December around at USD 78 on average. Despite this favorable course, oil prices remain a potential risk factor for inflation as they may exhibit volatility caused by sensitivity to geopolitical developments (Zoom-in 2.8). Meanwhile, exchange rates followed a relatively moderate course compared to past periods. Following these developments, fuel prices fell by 5.32%. On the other hand, the prices of natural gas, the first 25 cubic meters of which are provided free of charge, increased in October due to the increase in consumption, and the effect of natural gas on annual consumer inflation in the last quarter was 2.36 points in total. The upward trend in energy commodity prices, which started in July, ended in October, and prices in the last quarter registered a decline. Butane prices diverged from this picture with a slight increase in the last quarter (Chart 2.4.7). In line with global energy prices, bottled gas prices slowed down in this period, while municipal water prices increased further. Due to the natural gas item, the contribution of the energy group to annual consumer inflation increased by 2.33 points quarter-on-quarter to 3.90 points (Charts 2.4.6 and 2.4.2). Annual energy inflation climbed to 27.19% as of December, yet lagged considerably behind other main groups. In January, monthly energy inflation still shows effects stemming from the natural gas arrangement, while the automatic lump-sum tax rise shaped fuel and bottled gas items, and the group's annual inflation climbed further.

Chart 2.4.6: Energy Prices (Annual % Change)
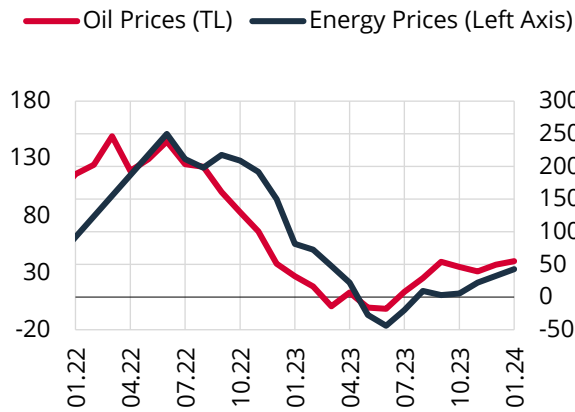
Source: Bloomberg, CBRT, TURKSTAT.

Chart 2.4.7: Energy Commodity Prices* (USD, Euro)
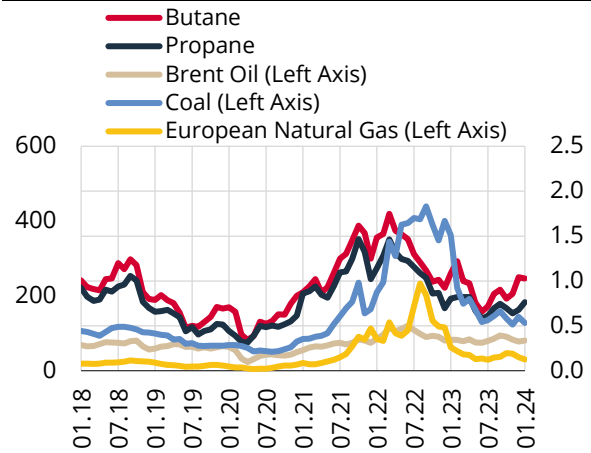
Source: Bloomberg.
* Brent oil per barrel, coal per ton, butane and propane per gallon. European natural gas prices are in euro and per MWh.

Table 2.4.1: Consumer Prices

	Quarterly % Change (Seasonally Adjusted)				Annual % Change			
	2023				2023			
	I	II	III	IV	I	II	III	IV
CPI	**11.82**	**5.97**	**26.27**	**10.05**	**50.51**	**38.21**	**61.53**	**64.77**
B	**12.79**	**8.78**	**26.12**	**8.52**	**52.11**	**46.63**	**67.22**	**68.02**
C	**13.99**	**9.99**	**24.42**	**9.28**	**47.36**	**47.33**	**68.93**	**70.64**
1. Goods	8.39	5.33	24.80	9.04	47.10	30.92	52.39	55.46
Energy*	**2.63**	**-20.84**	**33.71**	**17.08**	**35.66**	**-16.52**	**10.25**	**27.19**
Food and Non-Alcoholic Beverages	**13.64**	**12.40**	**22.25**	**10.10**	**67.89**	**53.92**	**75.14**	**72.01**
Unprocessed Food	17.49	21.54	23.36	8.51	65.94	68.44	96.17	91.23
Fresh Fruits and Vegetables	6.27	28.60	35.12	-1.83	35.72	57.49	102.46	81.29
Processed Food*	12.04	3.96	22.81	10.50	71.68	43.36	59.95	58.05
Core Goods	**6.93**	**9.27**	**21.93**	**7.15**	**36.58**	**36.69**	**53.23**	**52.81**
Clothing and Footwear	3.82	6.70	15.22	7.95	16.26	20.04	31.36	39.74
Durable Goods (excl. gold)	9.33	13.72	24.41	3.89	40.21	43.30	65.61	60.70
Furniture	13.56	4.10	21.93	7.76	63.26	37.52	62.08	55.21
Automobile	8.48	17.15	29.11	3.87	31.93	46.61	72.91	72.24
Electrical and Non-electrical Appliances*	5.75	7.56	22.01	6.56	41.05	42.53	57.63	47.89
Other Durable Goods*	8.63	6.51	23.07	9.30	40.96	36.33	53.37	55.64
Other Core Goods*	7.85	4.13	22.69	9.17	44.48	37.75	50.10	50.42
Alcoholic Beverages, Tobacco Products and Gold*	**10.37**	**12.25**	**26.24**	**9.45**	**41.00**	**40.14**	**67.19**	**71.18**
2. Services	**19.17**	**11.58**	**27.68**	**12.10**	**59.93**	**59.45**	**86.46**	**90.66**
Rent	18.99	17.51	24.06	20.15	62.76	75.91	95.03	108.58
Restaurants and Hotels	21.85	13.73	24.07	12.17	70.73	67.22	92.48	93.24
Transport	10.67	3.77	60.11	4.75	57.12	36.25	95.97	92.44
Communication	12.06	14.93	13.34	12.02	35.87	43.84	55.04	63.92
Other Services	19.41	8.93	25.64	13.38	57.08	57.42	81.64	85.20

Source: CBRT, TURKSTAT.
* No seasonality detected.

Annual food prices hovered further above headline inflation on an annual basis. Annual inflation in food and non-alcoholic beverages declined in October and November after surging in the third quarter, but increased again in December. Although annual inflation in this group declined quarter-on-quarter, food inflation ended the year above headline inflation at 72.01% in an environment of falling global food prices (Chart 2.4.8). Seasonally adjusted data pointed to a fall of 1.83% in the prices of fresh fruits and vegetables in the last quarter following an upsurge in the previous two quarters. After a correction in October and November due to vegetable prices, inflation in fresh fruits and vegetables increased significantly in December, led again by vegetable prices. Annual inflation in food excluding fresh fruits and vegetables followed a flat course (Table 2.4.1, Chart 2.4.8). In this period, prices of canned vegetable products and pulses increased considerably above their historical averages (Chart 2.4.9). The impact of the recent rise in carcass meat prices, particularly lamb, appeared in red meat prices, and these increases were reflected simultaneously in prices of processed meat products. The Meat and Milk Board announced on 26 December that it would sell slaughter cattle to companies operating in the red meat industry (producing delicatessen products) within the scope of its duty to stabilize and regulate red meat markets. Olive oil prices, which accelerated in the second half of the year also due to external demand, maintained an uptrend in the last quarter despite the measures taken for exports. In this period, coffee, tea, cocoa and nuts stood out with price hikes above historical trends, while price increases in the bread and cereals group lost pace in the last quarter of the year. The strong uptrend in food prices continued in January, led by the unprocessed food subcategory.

Chart 2.4.8: Food Prices (Annual % Change)
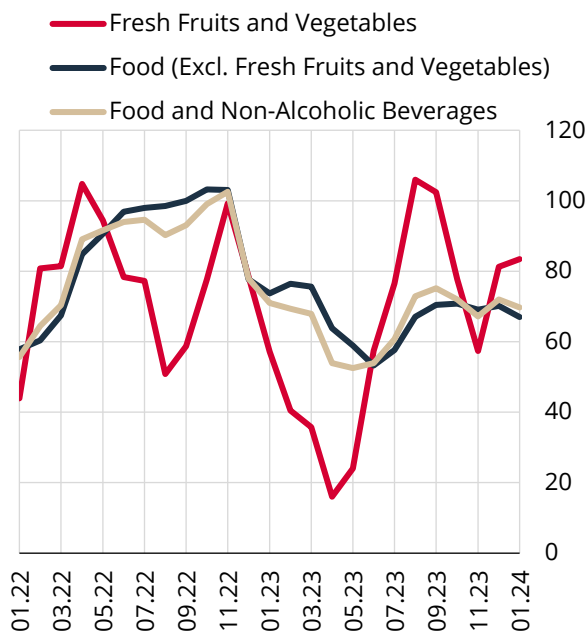
Source: CBRT, TURKSTAT.

Chart 2.4.9: Food Prices by Sub-Items*
(2023Q4 % Deviation of Change from Historical Average, Sorted)
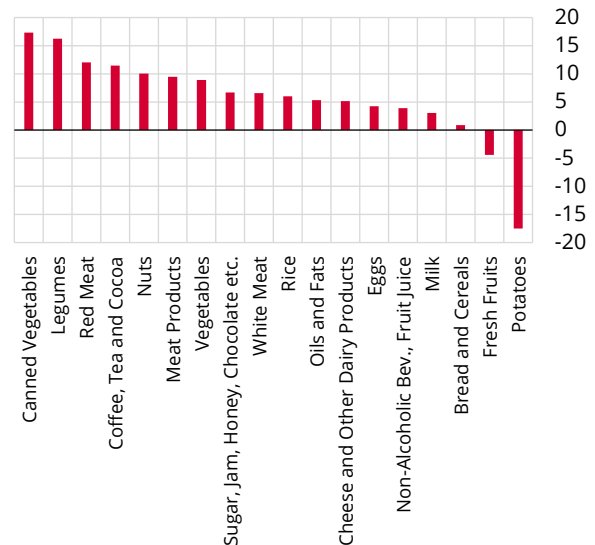
Source: CBRT, TURKSTAT.
* Denotes the difference between the 2023Q4 quarterly percentage change and the historical average (fourth quarter average of the 2012-2021 period).

Prices of tobacco prices increased further in the last quarter of the year. In the fourth quarter, prices of alcoholic beverages remained relatively unchanged, while price increases in tobacco prices (10.02%) imposed by producer firms pushed prices of alcoholic beverages and tobacco up by 9.28%, and annual inflation rose by 4.10 points to 71.26%. In January, the D-PPI rise of the second half of 2023, which drove the lump-sum tax upward, led to higher prices across the group. Alcoholic beverages registered notable price hikes, while the tax reform in tobacco prices limited price increases to some extent (Zoom- in 2.8).

Drivers of Inflation

The relatively stable course of the Turkish lira affected consumer inflation positively. The exchange rate increases observed in the middle of the year were replaced by a milder course in the following period. This course became more evident in the last quarter of the year, and the rise in the currency basket remained rather limited compared to the previous quarters at 8.82% (Chart 2.4.10). Exchange rate developments subdued the price increases in items with high exchange rate sensitivity, durable goods in particular, and contributed to the fall in the underlying inflation.

Chart 2.4.10: Currency Basket*
(Quarterly % Change)
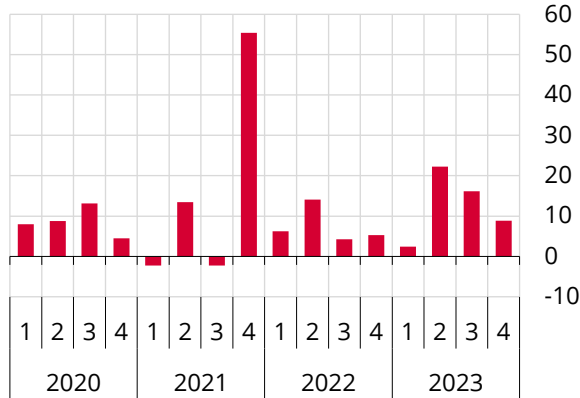
Source: CBRT.
* USD and euro have equal weights. Calculations are based on the average exchange rate in the last month of the relevant quarter.

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.

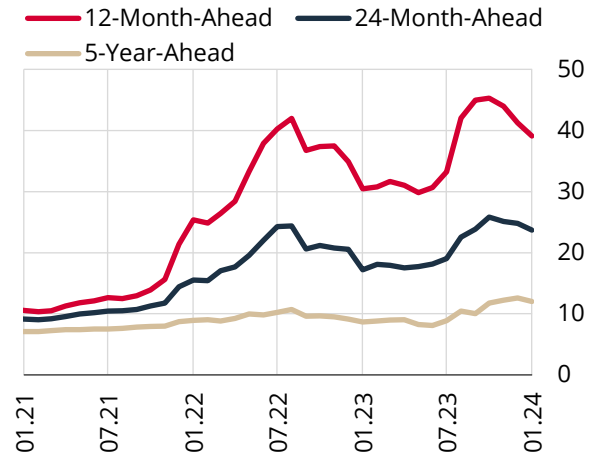***Inflation expectations declined in the last quarter of the year, and the consensus around the central tendency strengthened in the distribution of expectations.*** Results of the Survey of Market Participants indicated a downward revision in inflation expectations in the last quarter of the year, more visibly for shorter terms. Continued monetary tightening steps, the relatively stable course of the Turkish lira, and the weakened underlying inflation brought about a fall in inflation expectations. According to the survey results in January, the 12-month-ahead inflation expectation decreased by 6.19 points over the previous reporting period to 39.09%, while the 24-month-ahead inflation expectations receded 2.13 points to 23.69%. On the other hand, the five-year-ahead inflation expectation was revised slightly upwards by 0.25 points to 12.01% (Chart 2.4.11). The distribution of 12-month-ahead CPI inflation expectations shifted left in line with the revisions, while the consensus around the central tendency strengthened compared to the previous reporting period (Chart 2.4.12). In fact, the course of standard deviation and coefficient of variation of inflation expectations indicated a decline in the uncertainty regarding expectations. In this period, price-setting behavior also started to improve slightly. As the shocks that emerged in mid-2023 weakened, the frequency of price changes by firms decreased. While this weakening was more evident in the core goods sector, the impact of shocks continued to extend over time in the services sector as a characteristic of the price-setting behavior in this sector. In line with these developments, the CPI diffusion index fell in the last three months of the year, while diffusion index of services sector remained relatively flat (Chart 2.4.13). It is projected that the diffusion indices will be high in the early months of 2024 following the minimum wage hike and tax and administered price adjustments, but will decline in the core goods sector and continue to decrease moderately in the services sector in the subsequent period.

Chart 2.4.12: Distribution of Survey of Market Participants* (12-Month-Ahead CPI Expectations)

October 2023 — January 2024
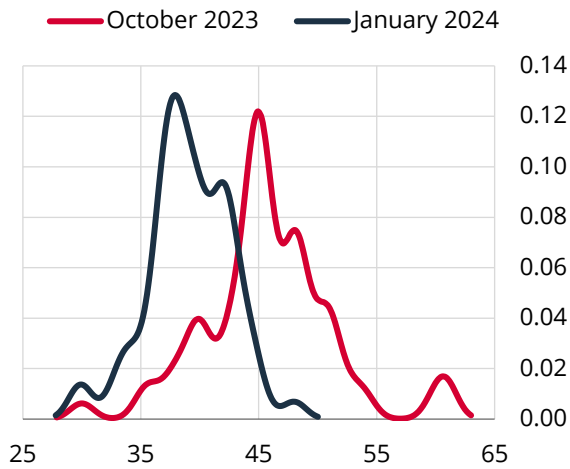
Source: CBRT.

Chart 2.4.13: Diffusion Indices of CPI and Services Sector* (Seasonally Adjusted, Monthly)

CPI — Services
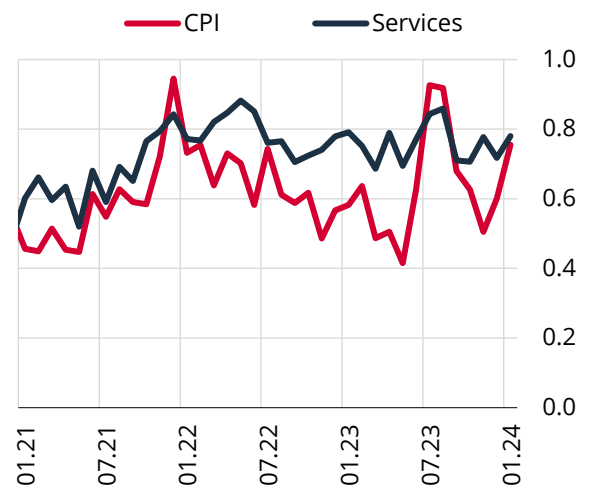
Source: CBRT, TURKSTAT.
* Calculated as the ratio of the difference between the number of items with increasing prices and the number of items with decreasing prices to the total number of items.

Global commodity prices decreased significantly, led by energy items. Having posted a substantial rise in the third quarter of 2023, global energy prices fell in the following period. While increases registered in the third quarter spread across the group, crude oil prices declined in the final quarter, and other items diverged from each other. Despite the sharp price movements in the energy group, the moderate downward course of prices was maintained in the industrial metal and agriculture groups, with their indices following a mild course in the last three-month period (Chart 2.4.14). In addition to the positive outlook of global commodity prices, global supply conditions remained consistent with their historical tendencies in the last quarter of the year. However, in January, escalated geopolitical problems led to longer lead times once again and to an increase in freight charges. Accordingly, the import unit value index rose slightly on the back of investment goods despite the almost flat course of intermediate goods, suggesting that there was no significant change in global cost pressures in the last quarter of the year (Chart 2.4.15).

Chart 2.4.14: Commodity Price Indices (Quarterly % Change)

Energy — Industrial Metal
Agriculture
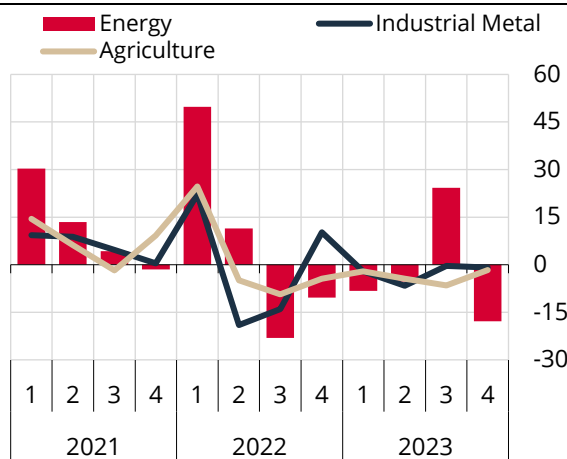
Source: Goldman Sachs.

Chart 2.4.15: Import Unit Value Index* (2019Q4=100, USD)
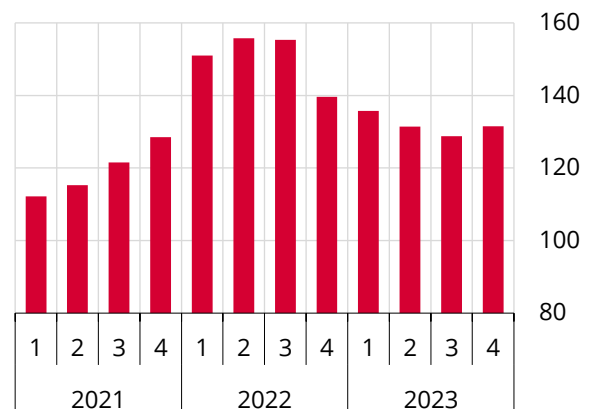
Source: TURKSTAT.
* Quarterly data denotes the last month of the respective period. As of November for 2023Q4.

The weakening of the underlying producer inflation was interrupted in January. Nominal wages rose over the previous quarter following the second increase in the minimum wage in July 2023, pushing up the real unit wages as well (Chart 2.4.16). The nominal wage hike is estimated to have weakened and real unit wages to have increased, albeit at a slower pace, in the last quarter of the year. On the other hand, real unit wages are expected to surge in the first quarter of 2024 due to the minimum wage hike in January. While macroeconomic shocks that emerged in mid-2023 lost strength in the last quarter of the year, wage pressures continued despite having moderated. In October, the rise in electricity and natural gas tariffs for firms elevated the cost pressures, whereas the favorable course of global conditions helped contain external cost pressures. As a result of these developments, the underlying producer price inflation decelerated in the last quarter of the year (Chart 2.4.17). As of January, the minimum wage adjustment, the rise in fuel prices as well as higher freight charges and longer lead times driven by geopolitical problems amplified the cost pressures, and the underlying producer price inflation increased.

Chart 2.4.16: Real Unit Wage per Hour Worked* and Real Minimum Wage**
(2015=100)
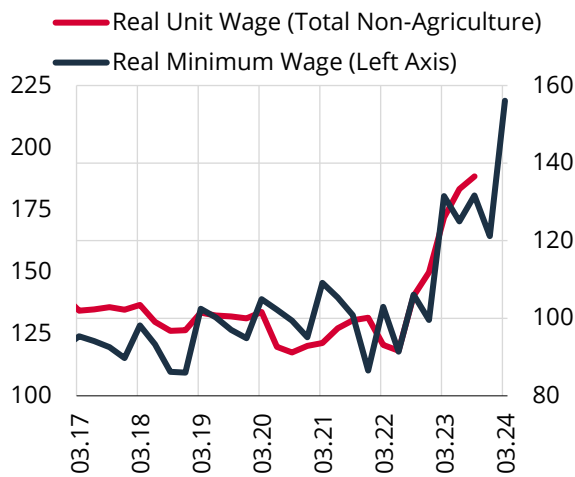
Source: CBRT, TURKSTAT.
* Deflated by the CPI. Real wage per hour worked/productivity. Value added and seasonally adjusted.
** Deflated by the seasonally adjusted CPI. Forecast is used for the 2024Q1 inflation data.

Chart 2.4.17: Manufacturing Prices Excluding Petroleum and Base Metals
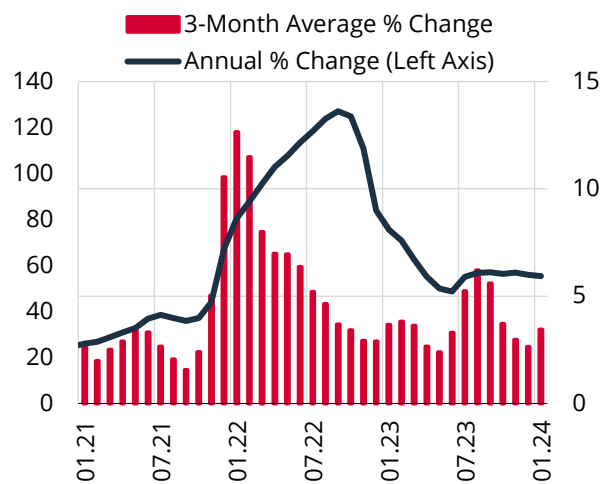
Source: CBRT, TURKSTAT.

Demand conditions continued to weaken in the last quarter of the year but still remained inflationary. The base indicator obtained from output gap series monitored by the CBRT decreased slightly in the third quarter of 2023. The real wage that increased in parallel to the minimum wage adjustment, the employment outlook and strong tourism expenditures were the leading factors supporting aggregate demand. On the other hand, the tightening in monetary policy reined in domestic demand, thereby aligning aggregate demand conditions with the disinflationary path (Box 2.1). Leading indicators suggest that a similar situation prevailed in the last quarter of the year, and that the output gap will be closed further (Chart 2.4.18). While the output gap narrowed due to the below-potential growth in the second half of the year, the increased divergence between alternative output gap indicators heightened the forecast uncertainty (Box 3.1). Temporary campaigns by firms to deplete their stocks in the last quarter complicated the readings of the supply and demand balance. In this period, ongoing restrictive monetary policy measures also had their impact on loans. In the last three-month period, loans followed a flat course slightly above their historical averages (Chart 2.4.19). While corporate loans have been on a mild track moderately above their historical averages, consumer loans excluding credit cards remain in tandem with their historical averages (Chart 2.2.11). Output gap indicators suggest that aggregate demand conditions have developed in line with projections and turned less inflationary since the previous reporting period. As the lagged effects of monetary policy kick in, the course observed in the second half of the year is expected to be maintained.

Chart 2.4.18: Output Gap* (%)
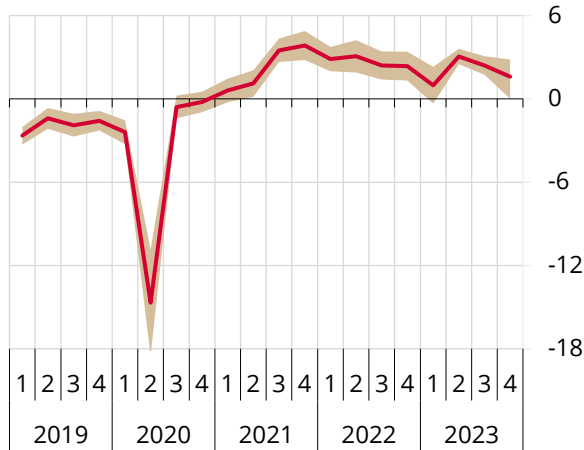
Source: CBRT.
* Displayed with 95% confidence interval, which is computed based on eight output gap indicators calculated with different methods.

Chart 2.4.19: Total Credit Change*
(13-Week Average, Real, Standard 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.

Despite having weakened, the impact of taxes and administered prices, which had pushed headline inflation considerably upwards in the third quarter of the year, remained high in the last quarter. Among administered price items, natural gas was the most significant item in the last quarter of the year. Despite no change in consumer natural gas tariffs, the limits for free use of natural gas were exceeded due to increased consumption, and prices included in the index rose markedly. The natural gas item is estimated to have driven up annual consumer inflation by 2.36 points in the last quarter of the year and by 0.35 points in January. Besides, consumer inflation was indirectly affected by the increases made in industrial and commercial electricity tariffs as well as natural gas tariffs for industries and electricity producers in October. The rise in municipal water prices, which lost some pace over the last three months of the year, gained strength again in January. The upward revision of the euro reference price in mid-December caused pharmaceutical prices to increase, with half of its effect carried over into January. Strong price increases were observed in administered items as of January. As the producer price inflation from the second half of 2023 was reflected on lump-sum Special Consumption Tax (SCT), fuel and bottled gas prices rose. The minimum wage adjustment and the hikes in fuel prices started to affect urban transportation items. While taxes and charges that increased at the revaluation rate have a limited direct effect on consumer price inflation, they may have indirect effects through inflation expectations. In January, the high rates of increases in Turkish Medical Association and Turkish Dental Association tariffs started to affect health services inflation unfavorably. Milk and dairy product prices are expected to increase at an even stronger rate in the first quarter of the year following the rise in the reference price of raw milk. On the other hand, prices of tobacco products, which saw firm-driven increases in November, rose in January due to taxes, while the amendment in the tax structure limited a further rise. Through this amendment, the ad valorem SCT was lowered, and the specific SCT was increased (Zoom-In 2.7). The specific SCT set by the new regulation enabled firms to make more limited price hikes compared to the previous regulation. As a result, increases due to producer prices and the specific tax will have a smaller inflationary impact compared to the previous period.

Zoom-In 2.6

Main Macro Drivers of Inflation in 2023

Annual consumer price inflation was 64.8% at the end of 2023, consistent with the forecasts in the previous Report. In 2023, the high course of inflation was driven by exchange rate, wage developments, demand conditions, time-dependent pricing behavior, fuel prices, and tax adjustments (Table 1). In 2024, the rebalancing in domestic demand and the stable course of the Turkish lira are estimated to be the main drivers of the projected decline in inflation.

Table 1: Decomposition of Annual CPI Inflation (Points)

	June 2023	September 2023	December 2023
Exchange Rate	15.7	19.4	20.3
Fuel (Excl. Exchange Rate)	-1.0	3.7	4.9
Time-Dependent Pricing Behavior	0.3	10.3	8.7
Tax (Excl. Fuel)	1.1	3.9	4.6
Import Prices (Excl. Fuel)	-0.1	-2.3	-0.8
Wage	8.1	8.8	9.4
Demand	10.4	10.2	9.2
Unprocessed Food, Alcohol-Tobacco (Excl. Tax and Fuel)	7.5	8.4	7.9
Other*	-3.7	-0.9	0.5
CPI (%)	**38.2**	**61.5**	**64.8**

Source: CBRT, TURKSTAT.
* Other includes constant term, error term and exogenous effects not included in tax, such as the 25 cubic meters of natural gas subsidy to households.

After a substantial rise in the third quarter of the year, inflation was on a mild track in the last quarter. The most significant contribution to the 26.6 points of increase in inflation in the second half of the year came from the change in time-dependent pricing behavior driven by the depreciation of the Turkish lira and from the rise in fuel prices, followed by exchange rates and tax adjustments, respectively. CBRT models that consider the pricing behavior during periods of large shocks were used to decompose inflation.[4] The findings show that the exchange rate effect reached 19.4 points in the third quarter and 20.3 points at the end of the year after following a mild course in the last quarter. In the third quarter, fuel prices recorded high rates of increases due to the rise in Brent crude oil prices and lump-sum taxes. Fuel prices (excluding the exchange rate effect) had a downward impact by 1.0 point on annual consumer inflation in June, whereas they had an upward impact of 3.7 points in September, and the total impact reached 4.9 points in the last quarter as the indirect effects also kicked in. With multiple shocks (exchange rate, wage, tax, oil prices, etc.) emerging within a short period of time, effects that were expected to extend over time were rapidly reflected on prices, while the impact of the deterioration in time-dependent pricing behavior driven mainly by the depreciation of the Turkish lira was 10.3 points as of September. Some part of the impact likely to be observed on inflation is assessed to have been brought forward in the last quarter, while the total impact from this channel was calculated at 8.7 points at the end of the year. Coupled with the effect of various tax egulations[5] introduced after July to counterbalance the additional financing need due to the earthquake, the tax item had an impact of 3.9 points on annual inflation in the third quarter and 4.6 points by the end of the year. Together with the tax increase effects (direct and indirect) on fuel prices,

---

[4] Inflation Report 2023-IV, Box 2.2, Macro Components of Consumer Inflation.
[5] Inflation Report 2023-III, Zoom-In 2.2, Impact of Tax and Administered Price Adjustments on Inflation.

the total impact of taxes reached 9.1 points at the end of the year. According to estimations, the effect of wages increased by 1.3 points from June to 9.4 points at the end of the year. Model results indicate that the demand-driven effect from credit and output gap decreased by 1.2 points from June to 9.2 points in 2023. With an impact of -0.8 points over the year, import prices were supportive of the inflation outlook parallel to the fall in commodity prices. Excluding fuel and tax-related increases, the total impact of unprocessed food and alcohol-tobacco prices on consumer price inflation rose in the third quarter, whereas it declined by 0.5 points to 7.9 points in the last quarter of the year. Driven largely by the mechanical effect of the exit from the free provision of 25 cubic meters of natural gas, 3.8 points of the rise in inflation stemmed from the other item in the second half of the year.

The rebalancing in domestic demand and the stable course of the Turkish lira will be the main drivers of the projected fall in inflation in 2024. While the CPI components outside the control of monetary policy, such as unprocessed food, alcohol-tobacco and taxes, are expected to make a smaller contribution to inflation in 2024, contributions of possible hikes in domestic energy prices and temporal effects driven by the free use of natural gas are projected to increase. Accordingly, the rebalancing in domestic demand underpinned by the monetary stance and the stable course of the Turkish lira bolstered by growing demand for Turkish lira financial assets are estimated to be the main drivers of the expected decline in the inflation path in 2024.

Zoom-In 2.7

Services Inflation from An Alternative Perspective: Regulated Services and Market Services

Services inflation rose significantly in 2023, exceeding the headline inflation, and was the main group that made the largest contribution to annual inflation. In this framework, two new indicators have been constructed to monitor price dynamics in the services sector from different perspectives. In the services sector, which is one of the two main components of core inflation and had a weight of 26.46%[6] in the CPI in 2023, prices are highly sensitive to domestic developments. Time-dependent pricing behavior and backward-indexation tendency are prevalent in the services sector in which aggregate demand conditions play an important role, and also the labor-intensive structure of this sector feeds into inertia (particularly at times of high and frequent wage increases). As the services sector includes sub-items with significant backward-indexation behavior that are subject to regulation, such as health, education, transportation, postal and various public services (notary services, court procedures, etc.), it becomes even more important to monitor price developments in this group separately. For this reason, in this study, services price developments are classified and analyzed under two separate groups as "regulated services" and "market services".

"Regulated services" refer to services items, the prices of which are determined, approved or regulated by private sector or public/public-affiliate institutions (municipalities, professional organizations, etc.). On the other hand, prices of the other services items (to be referred to as "market services") are determined freely on the market. In this context, first, services items in the CPI have been classified based on whether they are subject to regulation or not, and two separate price indices have been composed – one with items subject to regulation and the other with the remaining items.[7]

---

[6] This ratio increased to 27.85% in 2024.

[7] Regulated services include transportation (railway, highway and bridge tolls, and urban passenger transport under the responsibility of municipalities, etc.), various health services (main hospital services, medical specialist fees, dentistry fees, etc., which are determined by the Turkish Medical Association, Turkish Dental Association and Communiqué on Healthcare Practices), education services (private education institutions including preschool, primary, secondary, precollege, etc., which are subject to the regulation of the Ministry of National Education), postal services, insurance services (Turkish Catastrophe Insurance Pool, traffic insurance, etc.), various public services (court procedures, notary, etc.), and games of chance.

Regulated services account for approximately 25% (their weight was 6.63% in 2023) and market services 75% (their weight is 19.83%) of total services.[8] A breakdown of services inflation reveals that there has been a partial divergence between the inflation of regulated services and the inflation of market services recently (Chart 1). While the average annual growth rates of the two indices were very close to each other in the 2004-2022 period, they diverged slightly in 2023. At the end of the year, annual inflation in regulated services stood at 81%, whereas it was higher at 94% in market services. In January, annual inflation was 77.2% in regulated services and almost flat at 94% in market services.

Chart 1: Indices of Services, Regulated Services, and Market Services (Annual % Change)
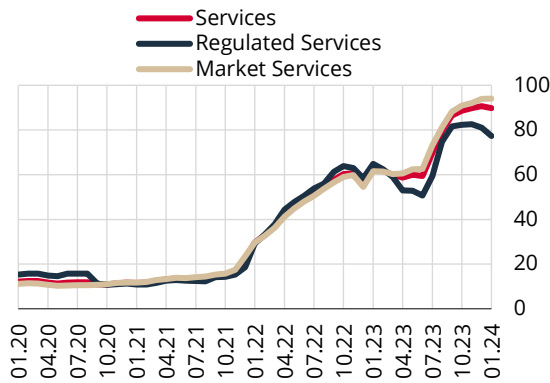
Source: TURKSTAT.

Chart 2: Indices of Services, Regulated Services, and Market Services (Seasonally Adjusted, Monthly % Change)
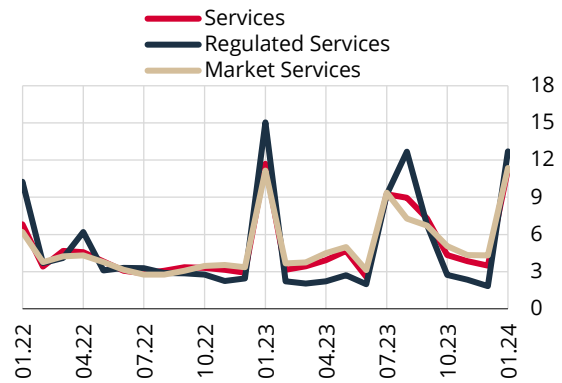
Source: TURKSTAT.

Regulated services are more volatile and subside more rapidly after a shock. When we analyze the seasonally adjusted monthly price developments, we see that prices of regulated services subside more rapidly after posting a large increase. In the last quarter, price increases in regulated services decelerated to relatively low levels, while the large monthly increase in the services group was rather driven by market services. Typically, regulated services increase at higher rates in January (Chart 2).

A closer look at the developments shows that the time-dependent pricing tendency is more salient in regulated services, and the seasonal structure of services stem predominantly from this group. Analyzing monthly price changes by years to track the movements within the year, we observe that (i) regulated services are the main driver of the large increases in services prices in January, (ii) price increases in regulated services are more evident periodically in January and September (due to health, transportation, communication, postal, and revaluation-driven services items, etc.), and they may decelerate rapidly in periods following large increases, (iii) volatility in market services inflation is more limited, and this group is an important driver of the inertia in services inflation as the monthly levels reached over the year are generally maintained.

---

[8] In 2024, the weight of regulated services is 6.86%, and the weight of market services is 20.99%.

Chart 3: Prices of Regulated Services and Market Services (Monthly % Change)

| 2022 | 2023* |
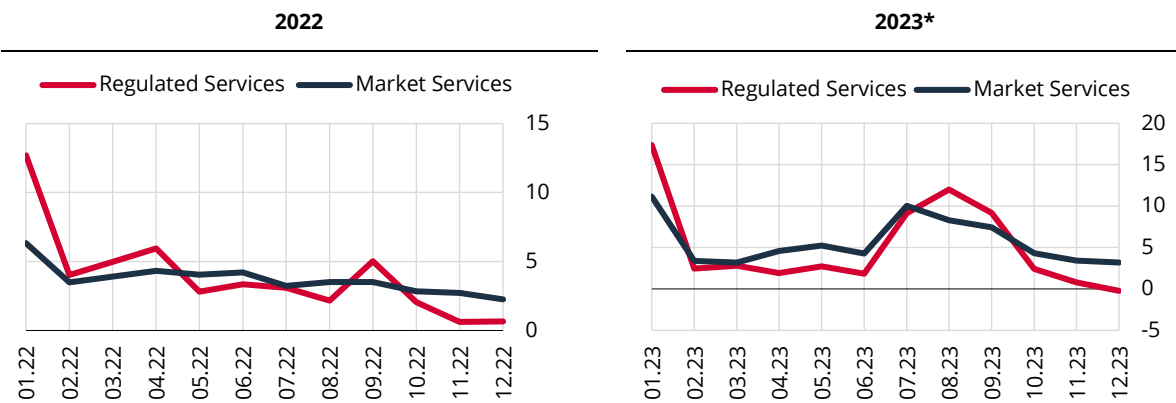
* The rise in value added tax had a significant impact on the increase observed in both items in July 2023. Moreover, in the third quarter of 2023, monthly price changes in regulated services were relatively high, led by transportation services, due to the rise in exchange rates and oil prices.

To sum up, while services inflation rose by 12.1% in January, the monthly increase in regulated services was more pronounced at 14.9%. Making up approximately one-fourth of the services sector, regulated services display a relatively stronger time-dependent pricing tendency, and price increases are concentrated periodically in January. In the following months, however, price increases in these services subside more rapidly than in market services. Improving the regulatory framework for these services to decrease uncertainty will contribute to increasing predictability and managing inflation expectations.

Zoom-In 2.8

Implications of the Tax Reform in Tobacco Products

With a regulation, the ad valorem SCT rate on tobacco products was reduced, while the specific SCT was raised effective from the beginning of 2024. As the tax base for tobacco products is the retail price, reducing the ad valorem SCT rate has also brought down the multiplier. Accordingly, the need for a change in the retail price due to higher costs or specific tax will be met with a lower rate of increase compared to the previous regulation, and the impact on headline inflation will be smaller.

While tobacco products are taxed at high rates globally, there are divergences between country practices. Tax revenues come largely from the specific tax in some countries, from a more balanced structure in others, and from the ad valorem tax in remaining countries including Türkiye.[9] While the same tax revenue can be achieved through different methods, the fact that the tax base for tobacco products is the retail price brings up the concept of "multiplier" and changes the price-setting structure of the sector.[10] The multiplier is the ratio by which a unit of increase in producer prices or specific taxes affects the final selling price. The multiplier is high in cases where the ad valorem SCT is set at a high rate, and the producer needs to make a higher rate of increase in the retail price in case of a rise in costs or specific tax in order to earn the same amount of revenue.

With a regulation introduced towards the end of 2023, the tax structure for tobacco products was changed.[11] Accordingly, the ad valorem SCT rate was reduced from 63% to 57%, and thus, the multiplier declined from 7.50 to 5.17 (Chart 1). So, when the costs or specific SCT increase by TRY 1, firms would increase the retail price by TRY 7.5 according to the previous regulation, but an increase

---

[9] As of 2023, the ad valorem tax rate was 63% in Türkiye while the average ad valorem tax rate in EU countries was around 27%.

[10] Further information on the price structure of tobacco products is available in Box 3.1 of the Inflation Report 2018-III.

[11] Presidential Decree No. 8001 published in the Official Gazette No. 32413 dated 28/12/2023.

of TRY 5.17 will suffice now. The need for a smaller increase, in turn, alleviates the sector-driven impact on inflation. With the same regulation, the specific SCT amount per package was raised from TRY 1.1043 to TRY 4.8058 to compensate for the revenue loss due to the cut in the ad valorem SCT rate. [12] The specific tax amount was determined based on the public revenue to be obtained in the case where the tax structure is not changed, and the producer price inflation over the second half of 2023 is automatically reflected on specific and minimum specific taxes.

Due to the new tax structure, the inflationary pressure will be more limited in the period ahead. Following the new tax regulation, retail prices of cigarettes rose by around TRY 2 in January, which is a more moderate increase than implied by the previous regulation. The new tax structure will also enable lower rates of increase in retail prices in the upcoming periods, and the inflationary pressure will be more limited. Aimed at aligning with EU countries, this regulation has also set an example for the coordination between fiscal and monetary policies during the transition to disinflation.

Chart 1: Multiplier for 20% Value Added Tax Rate
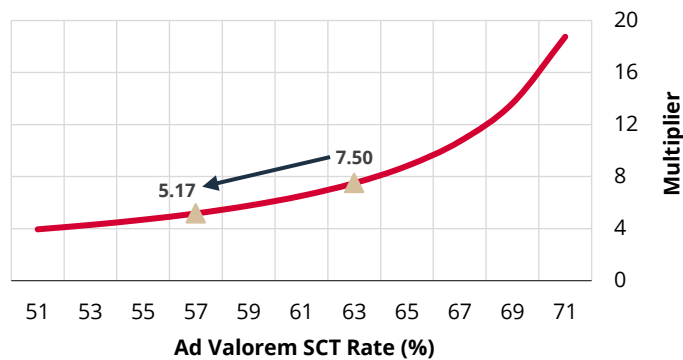
Source: CBRT, Revenue Administration.

---

[12] With the regulation, the minimum specific tax amount per cigarette was raised from 1.1114 Turkish liras to 1.4249 Turkish liras.

Box 2.1

Rebalancing Process in Domestic Demand

Strong domestic demand driven by high credit growth in the first half of 2023, was one of the main determinants of the rise in inflation and the deterioration in expectations. The tightening in financial conditions that started in June supported the normalization in credit growth and composition. Thus, it contributed to a gradual rebalancing of domestic demand and an improvement in inflation expectations. The course of demand conditions will also play a critical role in ensuring a permanent fall in inflation in the upcoming period. Accordingly, this box examines the impact of the monetary tightening process on demand conditions in sectoral detail with various high-frequency indicators.

Economic activity remained strong in the first half of the year, driven by domestic demand. Strong private consumption and domestic demand were the main drivers of growth, while net exports had a dampening effect on quarterly growth (Chart 1). In the third quarter, GDP growth decelerated on a quarterly basis, signaling the start of the rebalancing in domestic demand following the monetary tightening. With the tightening in financial conditions, the contribution of final domestic demand to quarterly growth declined significantly, led by the contraction in private consumption, while net exports made a positive contribution to quarterly growth for the first time in four quarters. While imports remained high in the first half of the year, mainly driven by imports of consumption and investment goods as well as gold imports, the monetary tightening in the second half of the year, which was reflected on financial conditions and the rebalancing in domestic demand, started to have a dampening effect on imports. In this period, in addition to the slowdown in gold imports, imports of consumption goods also lost momentum (Chart 2).

Chart 1: Gross Domestic Product and Its Components
(Contributions to Quarterly Growth, % Points)
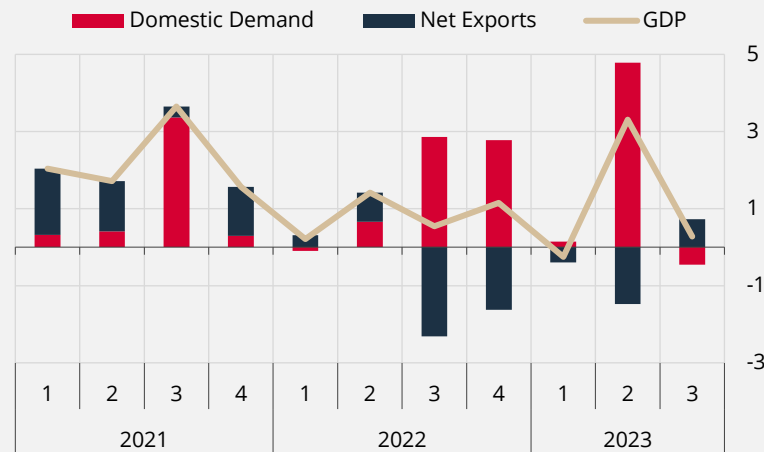
Source: CBRT, TURKSTAT.

Among the leading indicators of consumption, the retail sales volume index and data on card expenditures also point to a loss of momentum in domestic demand since the start of the monetary tightening (Chart 3). The retail sales volume index, which increased by 6.7% and 5.1%, respectively in the first two quarters of the year, decelerated to 0.6% in the third quarter, while the index pointed to a quarter-on-quarter contraction of 0.1% in the last quarter as of November. Recent tendency of the retail sales volume index, which is broadly in line with the private consumption trend, suggests that the loss of momentum in the second half of the year was more pronounced in non-food groups including computers, electronics, housing-related expenditure items, household appliances and furniture. As these groups typically include durable goods that are more sensitive to financing conditions, retail sales volume index data provide signs of the impact of monetary tightening.

Similarly, data on card expenditures, which provide more timely information about the private consumption tendency, also indicate that domestic demand has started to rebalance. An analysis of card expenditures by sub-sectors deflated by the relevant CPI indices reveals that there were strong increases across sectors in the first half of the year compared to the last quarter of 2022. In fact, in real terms, total card expenditures increased by 9.7% and 14% quarter-on-quarter in the first two quarters of the year, respectively. On the other hand, in the third quarter, the rate of increase in card expenditures slowed down across sectors to 1.1% compared to the strong momentum in the first half of the year. Meanwhile, factors such as the year-end campaigns in the last quarter of the year and the demand incentive, which was brought forward, limited the loss of momentum in demand to some extent. In this period, card expenditures increased by 5.1% quarter-on-quarter but still implied a lower increase compared to the first half of the year.

Chart 2: Imports* (2023, Seasonally Adjusted, Nominal, Six-Month % Change)
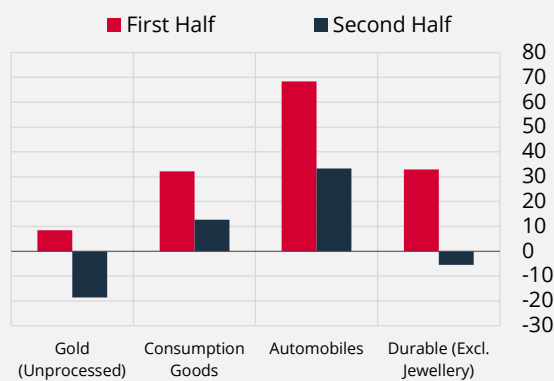
Source: CBRT, TURKSTAT.
* Percentage change of imports in consecutive six-month periods.

Chart 3: Retail Sales Volume Index and Card Expenditures* (Seasonally Adjusted, Real, Quarterly % Change)
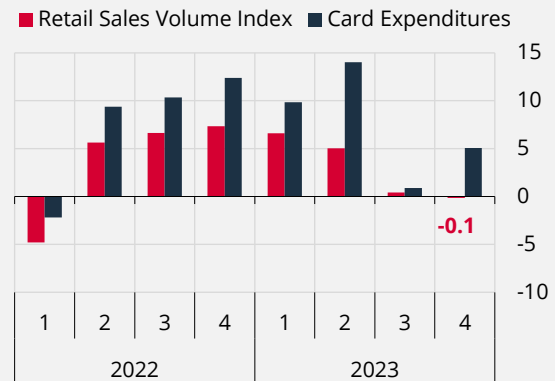

Source: CBRT, TURKSTAT.
* Retail sales volume index is as of November.

In addition to the data on retail sales volume and card expenditures, the BTS, which includes information obtained from interviews with manufacturing industry firms, also enables the current demand conditions to be monitored in sectoral detail. The survey question on the change in the quantity of registered domestic market orders provides leading information on the course of domestic demand. This indicator for domestic market orders is analyzed in the context of the impact of the monetary tightening launched in June on sectoral demand. Accordingly, an analysis of the change in registered domestic market orders in January-June period reveals that 12 out of 24 sectors recorded a decline, while 11 sectors posted an increase (Chart 4). Considering that durable consumption good sectors such as vehicles, electrical equipment, computers and furniture are more sensitive to financing conditions, survey data suggest that domestic demand in these sectors weakened, except for furniture.

The questions in the BTS also allow examination of employment, investment and price expectation developments at the sectoral level. The sectoral analysis of these developments in terms of sensitivity to financing conditions reveals that employment expectations have decreased in sectors such as computers, vehicles and electrical equipment, which are more sensitive to financing conditions, whereas there has been a limited increase in the furniture sector. When these sectors are aggregated by their weights in the manufacturing industry, employment expectations imply a decrease compared to June but present a more positive outlook compared to other sectors (Chart 5). As for investment expectations, investment expectations decreased in the furniture, vehicle and electrical equipment sectors that are sensitive to financing conditions, while there was an increase in the computer sector. Despite this increase, investment expectations in sectors that are more sensitive to financing conditions decreased more than other sectors. On the price expectations side, domestic market sales price expectations increased in the electrical equipment sector during this period, while price expectations decreased in all other financing-sensitive sectors. When aggregated by their weight in the manufacturing industry, domestic market sales price expectations decreased in sectors that are more sensitive to financing, whereas there was an increase in other sectors.

Chart 4: Quanity of Currently Registered Domestic Market Orders (Increase-Decrease, Seasonally Adjusted, January 2024 – June 2023 Difference)

■ Sectors More Sensitive to Financing Conditions   ■ Other Sectors
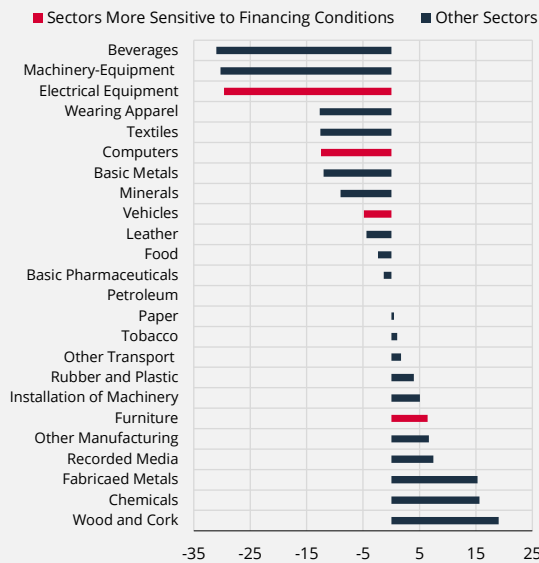
Source: CBRT.

Chart 5: BTS Price, Employment and Investment Expectations* (Increase-Decrease, Seasonally Adjusted, January 2024 – June 2023 Difference)

■ Sectors More Sensitive to Financing Conditions   ■ Other Sectors
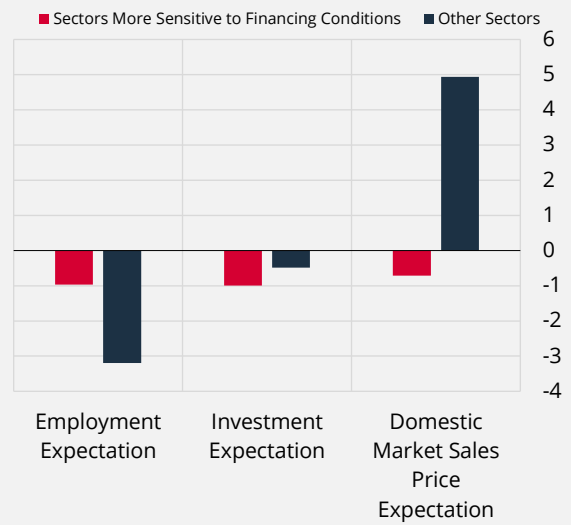
Source: CBRT.
* Excluding petroleum products sector due to high volatility.

A closer look at how the domestic demand outlook is reflected in consumer prices highlights developments in the durable goods group, where prices are highly sensitive to financing conditions. As implied by sectoral demand data, inflation in durable goods (excluding gold) remained high in the first half of the year due to strong demand and strengthened significantly in the third quarter due to combination of multiple shocks. In the fourth quarter, price increases slowed down significantly in this group due to the completion of the transmission of the shocks to a large extent and campaigns to deplete stocks as well as the loss of momentum in consumer loan growth (Charts 6 and 7). The analysis on a sub-group basis shows that the weakening in price increases in the last quarter of the year spread across sub-groups, with the slowdown in automobiles being more pronounced.

Chart 6: Consumer Loan Growth* (Quarterly, Real, Standardized Value)
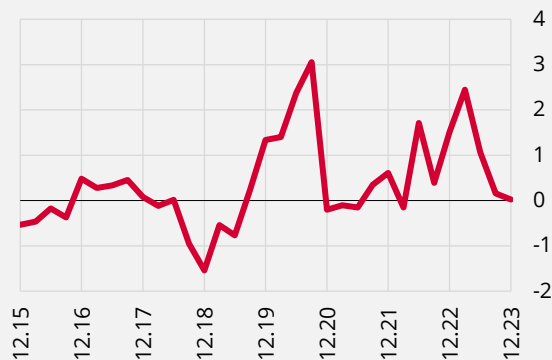
Source: CBRT.
* Deflated by CPI. The mean and standard deviations of the series are calculated based on the 2006-2019 period. The quarterly average is taken after weekly real changes are standardized.

Chart 7: Prices of Durable Goods and Its Sub-Items (Seasonally Adjusted, Quarterly % Change)

■ 2023Q1   ■ 2023Q2   ■ 2023Q3   ■ 2023Q4
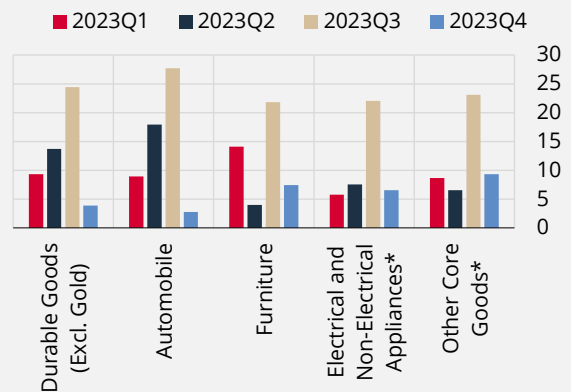
Source: CBRT, TURKSTAT.
* No seasonality detected.

In sum, with the reflection of the monetary tightening process that started in June on financial conditions, domestic demand started to balance, and accordingly, the import tendency weakened while an improvement in pricing behavior and expectations was observed. On the other hand, it should be noted that domestic demand remains resilient due to the wage updates in January, and despite this balancing tendency, the current level of domestic demand may be a risk factor on inflation.

Box 2.2

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).[1] This box summarizes the findings from the interviews conducted in the October-December 2023 period.

It was observed that economic activity conditions were more positive in the last quarter of the year than anticipated in the third quarter.

While domestic demand conditions supported sales mainly through the final consumer channel, no significant change was observed in foreign demand conditions in the last quarter, although the emphasis on downside risks continued. As a result of these developments, participants reported that the loss of momentum in aggregate demand conditions observed in the previous quarter decelerated in this period, and the limited slowdown in production continued. While the weak course of investment continued, it has been noted that firms have focused more on cost-cutting and efficiency-enhancing investments. On the other hand, it has been observed that price increases have slowed down with references to labor and input costs and exchange rate-related costs.

The loss of momentum in domestic sales, which started in the third quarter, slowed down in the last quarter of the year.

Consumer-oriented campaigns and the fact that consumers continue to bring forward their demand to hedge against expected price increases in the new year, stand out as factors supporting domestic sales. On the other hand, the high course of the general price level and the tightening in financing conditions, especially in durable goods, were noted as the main factors suppressing sales. It continued to be reported that consumers' sensitivity to campaigns was high and the tendency towards affordable products was widespread. On a sectoral basis, basic products such as food, consumer electronics and automotive sales stand out as product groups with a relatively positive trend, while ready-made clothing followed a more buoyant trend compared to previous periods owing to the impact of campaigns.

It has been observed that consumers' expectation of wage increases in the new year supported sales in **food and fast-moving** consumer goods. While it was stated that the fourth quarter was buoyant as a result of discount campaigns in the **apparel industry,** it was noted that the sales of firms that entered the season with attractive pricing policies were more positively differentiated. It has been reported that **white goods** sales increased as of November due to discount campaigns but slowed down slightly on a quarterly basis. Consumer electronics and small household appliances were reported to be more buoyant. While **furniture** sales followed a parallel course to the previous quarter, it was emphasized that factors such as weakness in new home sales, price levels and the low number of installments suppressed demand. On the other hand, it has been stated that the leading firms in the sector achieved their seasonal sales targets by refraining from price increases and organizing campaigns, and that firms that have brand power and strong resources differentiated positively. **In the automotive industry**, it has been observed that the increased automobile supply and competition as well as the response to campaigns including price discounts and the demand brought forward supported sales. It has been stated that demand for residence purposes is low in the **housing** sector due to high prices and credit conditions, and the expectation of campaigns that will revitalize the sector also creates additional pressure on sales. While the demand for investment housing purchases continues to slow down, it has been observed that the expected boost in sales to foreigners did not materialize.

---

[1] The main purpose of this study is to obtain information on periodic production, domestic and international sales, investments, employment, credit conditions, and 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.

It was observed that foreign demand conditions maintained their course in the third quarter.

Weak demand conditions in European countries, the decrease in freight costs especially until December, tighter competitive conditions with China's return to foreign markets and geopolitical risks were expressed as the main factors that put pressure on exports. While firms' export orientation and market/product diversification flexibility continue to be emphasized as factors that ease pressure, the beginning of the removal of energy subsidies in some countries has been noted as a development that will increase competitiveness.

On a sectoral basis, it has been observed that weak demand conditions continue in the **apparel** and **textile sector**, and the stagnation in EU demand continues to play a particular role in this weakness. It has been observed exports in **furniture** sector displayed a similar outlook as in the previous quarter, and the sales of firms with less dependence on the European market have followed a more positive course. It has also been stated that firms are trying to increase their exports through product and market diversification in order to compensate for losses in the domestic market. It has been observed that **white goods** main and sub-industry exports exhibit different trends on a product basis. It has been stated that the Chinese influence has become evident in foreign markets, especially in the stove, oven and hood product groups. It has been observed that exports in the **automotive** sector maintained their positive outlook. It has been reported that demand in Europe remained strong throughout the quarter, and that the original equipment manufacturer's side remained strong in the main industry exports and sub-industry, especially in the commercial vehicle market. Firms shared their anticipations that exports will gradually increase in 2024 with orders received from new customers and investments to be put into effect. It has been reported that while the demand for rebar in the **base metal** sector has contracted, the demand for pipe-profile products used in various sectors has maintained its strength despite the negative demand conditions in the EU.

Chart 1: Demand Perception of Firms* (Compared to the Previous Quarter)
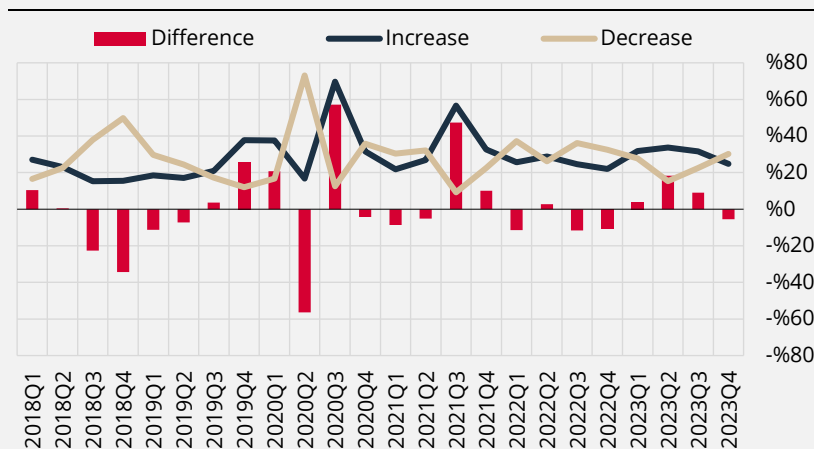
Source: CBRT ELRS.
* Demand perception shows the evaluation regarding the current sales, orders and expectations of the firms. The difference series shows the difference between firms with a positive perception of demand and those with a negative perception of demand compared to the previous quarter and provides information on the prevalence of the change in demand perception but not the size of the change.

The slowdown in production activity that started in the third quarter continued in the last quarter.

For firms operating mainly in the domestic market, although the campaigns supported demand in November and December, production was affected by the tightening in financing conditions and expectations that the slowing in consumption may increase as of the second quarter of 2024. Although it has a positive trend compared to the domestic market, production activity in exporting firms started to slow down as of the last quarter.

Looking at sectoral developments, production in the **automotive** industry remained strong amid strong domestic and foreign demand. Despite the anticipated slowdown in the domestic market in 2024, expectations for foreign demand are positive. It is envisaged that the current strong trend will

continue as the main industry plans are largely determined in this direction. In addition to the positive evaluations of foreign demand for **white goods** for 2024, production has maintained its strong course owing to campaigns organized by the main industry in the domestic market. **In furniture**, foreign demand remained similar to the previous quarter, while on the domestic side, although the effect of the campaign was more limited than in white goods, production followed a horizontal course on a quarterly basis. **In machinery and equipment**, the weakness in the investment stance in the domestic market negatively affected demand, while in exports, production activity remained similar to the previous quarter as a result of firms' ability to find alternative markets. **The chemicals industry** maintained its production in automotive and cleaning products in the domestic market as well as in foreign demand. On the other hand, weakness in textile and construction-related areas suppressed production. **In basic metals**, amid stagnation in the construction sector in the domestic market, the expected recovery in foreign demand has not yet started, and Chinese competition continued to negatively affect production. **In construction**, demand remains weak except for the earthquake zones and earthquake-resistant provinces. While contractors try to complete ongoing projects in order to avoid additional costs, the appetite for starting new projects is low. **Textile and apparel** production slowed down compared to the previous quarter as a result of the negative reflections of the tightening in financial conditions in the domestic market on inter-firm trade and the increasing emphasis on the weakening of competitiveness in foreign demand. On the apparel side, demand supported by campaigns supported production to some extent.

The prudent investment stance of firms continued in the last quarter of the year.

The increase in investment financing costs and uncertainties regarding domestic and foreign demand have been highlighted as the main reasons for the weakness in the investment stance. Despite the weak course of the investment stance, it was observed that there was no significant increase in the rate of postponed investments in this quarter and those investments that had been started largely continued. The investment stance of export-oriented firms continued to be relatively positive. On the other hand, due to uncertainties regarding the course of demand in the main markets during this period, it was observed that the exporting firms also increased their prudence regarding their investment stances within the quarter.

Chart 2: Investment Stance of Firms* (Next 12 Months, %)
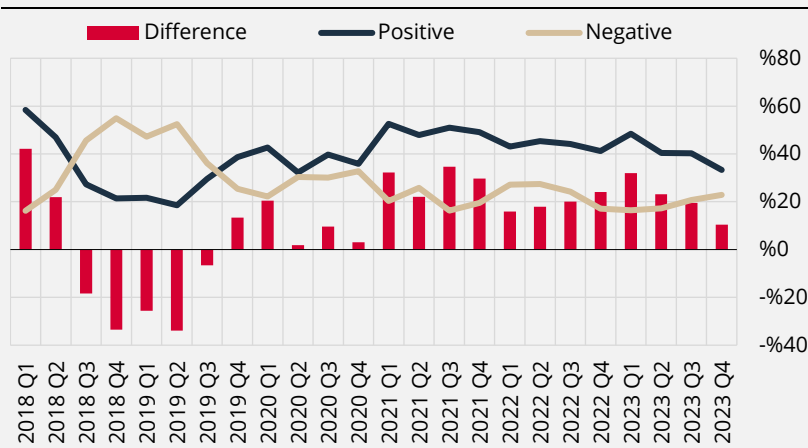
Source: CBRT ELRS.

* Investment stance shows the evaluation regarding 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 but not the size of the change.

It is observed that firms focus on cost-reducing and efficiency-increasing investments in their investment plans. In this context, machinery-equipment, expansion and energy investments continued to be at the forefront. In this period, while the investment motivation of firms with strong resources differed positively, decreasing labor and energy costs, increasing efficiency by reducing unit costs by economies of scale and completing ongoing investments supported this motivation. **On a sectoral basis**, it is observed that the investment stance has differentiated positively in the **food manufacturing** and **automotive** sectors. There are new investments in the **food manufacturing**

sector to increase production capacity and to introduce new products. It is seen that investment appetite is strong due to strong demand conditions in the **automotive** sector and the growth in the electric vehicle market. **Textile, apparel** and **construction** sectors stand out among the sectors where the investment stance is negative due to the weak demand outlook. High land prices in the **construction** sector and the weak course of housing demand are cited as factors that suppress investment appetite.

As of the fourth quarter, it was observed that the weakness in the investment stance of firms continued to be reflected in their employment plans.

Firms' efforts to increase automation and efficiency in the production process continued to be a factor limiting employment growth. In this period, in addition to uncertainties regarding domestic and foreign demand and wage increase expectations, the increasing share of social service costs granted to employees in the total cost also increased the limiting effect on employment plans. On the other hand, efforts to retain existing experienced employees owing to difficulties in finding employees and the start of operations in completed investments supported employment plans.

The emphasis on the increase in financing needs showed a limited decrease in the last quarter of the year.

The emphasis on financing needs, which mainly arise from demand for working capital, decreased in December from their high levels in October and November. It has been stated that declining and/or flat raw material prices were effective in this decrease. On the other hand, for firms with increasing working capital needs, the emphasis on cash flow disruptions in December was remarkable while costs related with fuel and electricity expenses were highlighted more intensely in the first month of the quarter. Although the need for investment-based financing remained important, it was expressed less in this quarter.

Even though the tightening in credit conditions continued in the last quarter, it was stated that there was an easing in terms of maturity and limit. It has been observed that the decrease in firms' loan demand due to high TL loan costs started to become evident as of December, and exporting firms' tendency towards more cost-effective rediscount loans increased. It was stated that banks' appetite for lending increased, and correspondingly, access to credit was eased in the fourth quarter compared to the previous quarter. This relief is conveyed especially by exporters and manufacturing firms, and it is attributed to increasing rediscount credit limits.

While the increase in maturity differences in inter-firm trade caused cash purchases to become widespread, there was a slight increase in the emphasis on delays in receivables in December. Although it was reported that the increase in receivables-payable maturity mismatch caused disruptions in the cash flows of firms, there were no significant problems with collections as of the last quarter. However, it is seen that the increased use of checks in the market, the increase in financing costs and the expectations of a weakening in demand led to concerns about collections.

It was observed that the cost pressure on firms eased, and the price increase rate slowed down in the last quarter.

The emphasis on labor costs, which stood out as a source of cost increase in the previous quarter, dropped significantly in this quarter. Although input costs were the most frequently mentioned cost factor during the quarter, they were cited less frequently owing to the stable course of global commodity prices. In addition, there was a significant decrease in the ratio of companies emphasizing exchange rate-related cost increases compared to the third quarter. Although references to energy costs came to the fore in October with the increases in natural gas and electricity prices, they faded out in the remaining months of the quarter.

It was observed that price increases decelerated, and the frequency of price updates decreased during the quarter. It is considered that i) monetary tightening, ii) the recent easing in cost pressure, iii) the fact that the cost increases from the previous period have been largely reflected, iv) the public call to fight against inflation and v) competitive pressures arising from the campaign period are effective in this slowdown.

Box 2.3

A Closer Look at the Disinflation Path

In the last quarter of 2023, inflation was consistent with the 2023-IV Inflation Report forecasts and stood at 64.8%, approximately 0.2 points below the mid-point. This outlook was maintained in January, with inflation realizing in tandem with forecasts. In this box, the 2024-I Inflation Report forecast path (Chart 1) is analyzed more closely, while shedding light on basic issues regarding the "mechanics" of the disinflation path. In this context, (i) the relationship between the course of annual inflation and monthly movements of inflation is assessed, (ii) the base effect and its impacts on 2024 inflation are explained, and (iii) while the current situation is evaluated, important factors that will affect the inflation path in 2024 are stated, and the implications of the path in 2025 and beyond are discussed.

Chart 1: Inflation Report Forecasts* (%)
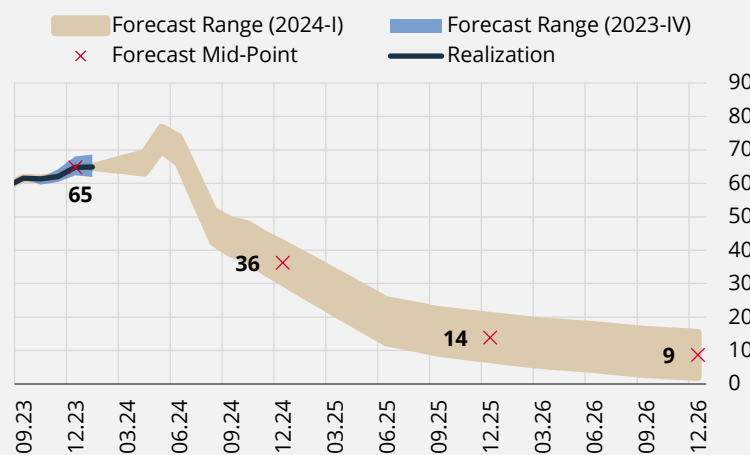
Source: CBRT.

* 2023-IV Inflation Report forecasts are reported for the period before January 2024, and 2024-I Inflation Report forecasts are reported for the period after February 2024.

Inflation Forecasts

Chart 1 indicates that inflation will remain flat in the first half of 2024, will peak in May with a significant increase, and then decrease sharply falling to 36%. The analysis of annual inflation outlook on a monthly basis reveals that (1) January is not different from February, (2) there will be a sharp price increase from April to May, (3) and the price increase rates will suddenly drop to very low levels afterwards.

These evaluations are clarified as follows in the light of the monthly inflation path implied by the forecasts. (1) Although annual inflation remained flat, there was a significant monthly increase in January due to wage adjustments, especially the minimum wage, and items with a high tendency for time-dependent price setting. While seasonal increases were recorded in service items such as health and transportation, there were automatic increases in some administered items (alcohol, tobacco, fuel, etc.). Since similar effects were prevalent in January 2023, annual inflation remained relatively flat. (2) The main reason for the expected sudden increase from April to May is that monthly inflation was close to zero due to the free natural gas in May 2023 and the normalization of the tariff in May 2024. (3) Although monthly price increase rates will show a gradual decline after May, the previous year's developments also play a role in the sharp decline in annual inflation. In other words, high monthly price increases were recorded in July and August 2023 due to exchange rate, taxes, administered prices, energy prices and the increase in demand as well as the non-linear effects of their combination on expectations and price-setting behavior. This factor, which causes the previous year's monthly inflation to significantly affect the current year's annual inflation in such periods, is called the base effect.

What Is Base Effect?

Chart 2 presents a sample visualization of base effects. The price of a product with a monthly price increase of 1% rose by 8% in March 2020, then price increases returned to normal levels in the following period. In the same period, annual inflation remained stable after rising to 20%. In March 2021, annual inflation decreased to 13% as the price change in 12 months earlier was excluded from the calculation of annual inflation. The source of this rapid decline in annual inflation in March 2021 without any change in monthly inflation is called "base effect".

Taking a more detailed approach to the base effect, annual inflation (π_t), is calculated as the percentage change between the price index in a given month (P_t) and the index value 12 months earlier (P_{t-12})**.** The difference between the annual inflation rates in two consecutive months is approximately equal to the difference between the monthly inflation rate in the current month and the monthly inflation rate 12 months ago.

$$\pi_t - \pi_{t-1} \approx \left(\frac{P_t}{P_{t-1}} - \frac{P_{t-12}}{P_{t-13}} \right) * 100$$

Thus, the change in annual inflation rates from one month to the next reflects the effect of price movements both in the current month and in the base month, which is the effect coming from 12 months ago (the base effect). For a significant base effect, the monthly change 12 months ago must deviate significantly from a typical monthly change that would normally be expected in that month.[1]

Chart 2: Base Effects on Annual Inflation
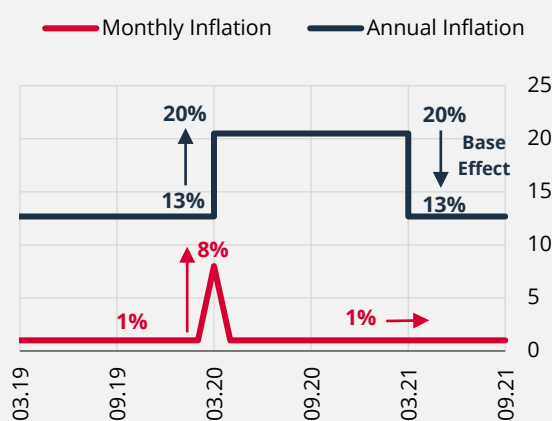
Source: CBRT.

Chart 3: Base Effects on Annual CPI Inflation (% Points)
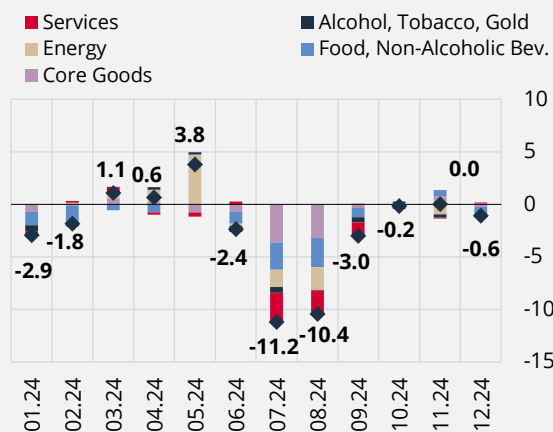
Source: CBRT.

Chart 3 analyzes the base effects on 2024 consumer inflation by main groups.[2] As seen in the chart, the energy group is projected to push annual inflation higher due to the natural gas subsidy in May. In the June-August 2023 period, multiple shocks in a short period of time led to high increases across subcategories. Therefore, in the June-September 2024 period, in addition to the cumulative effects of monetary tightening for reducing monthly inflation rates, base effects in almost all subcategories are expected to bring annual inflation down. On the other hand, from September 2024 onwards, no significant base effect is observed, while annual inflation is expected to decelerate further due to the strengthening of the lagged effects of monetary tightening in this period.

---

[1] Detailed information on this issue is presented in Box 3.2 of the Inflation Report 2019-II and Box 3.1 of the Inflation Report 2016-I. In addition, further evaluations on base effects can be found in ECB (2005, 2007).

[2] The contribution of base effects to annual inflation varies depending on the calculation of the typical monthly change. For the typical monthly changes, the average monthly inflation adjusted for outliers in the 2020-2022 period is used in each subcategory. The average and standard deviations of recent inflation rates are used for detecting outliers. The recent inflation trend (the average value of 4 seasonally adjusted inflation rates without outliers 2 months before and 2 months after the relevant month) is used for the typical monthly changes in the services item.

Effects of Natural Gas Subsidies Provided to Consumers on Inflation

Considering the base effects and consumption quantity-driven effects, it is crucial to separate the contributions from the natural gas regulation in order to assess the course of inflation properly. Under this regulation, natural gas was offered free of charge to residential consumers in May 2023, and it was decided that up to 25 m3 of consumption would be covered by the state for the following one-year period. The free use of natural gas in May had a significant downward impact of 2.38 points on monthly consumer inflation (Chart 4). In line with the rise in consumption as the weather turned colder, consumer inflation picked up in the last quarter. While this effect was significant in November by around 1 percentage point, it weakened in December 2023 and January 2024. The sharp monthly increase in May 2024 due to the end of the regulation is particularly noteworthy (Chart 4). In addition to this development, annual inflation is expected to peak due to the base effect stemming from the fall in May 2023 (Chart 1).

Chart 4: Estimated Contribution of Natural Gas Price Adjustments to Monthly Consumer Inflation[3] (% Points)
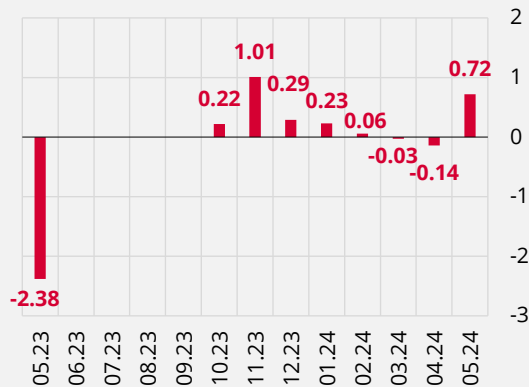
Source: CBRT, GAZBİR.

Chart 5: Average Underlying Trend Indicators of Monthly Inflation* (%)
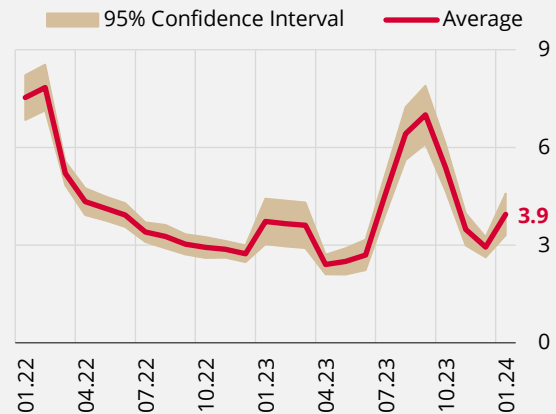
Source: CBRT.
* Seasonally adjusted three-month average change. Reports the mean and 95% confidence interval for seven main trend indicators (B and C indices, SATRIM, Median, the index excluding most volatile items, indicators produced by principal component analysis and dynamic factor models.).

Current State, Forecasts and Assumptions

A closer look at current state reveals that inflation expectations and their distribution improve as the policy decisions begin to take effect. Evaluated together with the main inflation indicators, the underlying trend of inflation has been on a downward trend since September, although this was interrupted in January for the reasons given above (Chart 5). As a matter of fact, three-month averages showed a sharp decline in the last quarter and reached approximately 2.9% in December. In January, the three-month trend increased to 3.9% also with the effect of the increase in monthly inflation. After the rise in January, it is estimated that the averages will trend downward again in the coming months.

A comparison of the previous Report period forecasts with the realizations reveals that the three-month averages of seasonally adjusted inflation indicators indicate a more favorable course than the projections both in the last quarter of 2023 and in January (Table 1).

---

[3] The figures presented here reflect estimates. Realizations will differ slightly due to (i) the difference arising from the regional consumption calculation used by TURKSTAT (here the calculation is based on Türkiye's average historical consumption from GAZBİR), (ii) price increases by natural gas supplier firms, and (iii) relative increases in items other than natural gas.

Table 1: Comparison of Inflation Realizations and Forecasts (Seasonally Adjusted, Three-Month Average % Change)

	CPI		B		C	
	Inflation Report 2023-IV	Realization	Inflation Report 2023-IV	Realization	Inflation Report 2023-IV	Realization
Sep. 23	6.0	5.8	5.7	5.9	5.4	5.7
Nov. 23	4.1	3.6	3.7	3.6	3.8	3.6
Dec. 23	3.8	3.2	3.2	2.8	3.5	3.0
Jan. 24	4.3	4.3	4.7	4.2	5.3	4.6

Source: CBRT, TURKSTAT.

The underlying trend fell to comparatively low levels as a result of the relatively flat exchange rate and declining commodity prices in the February-May period of 2023. Although monthly inflation rates are expected to slow down again after the temporary rise in January 2024, the projection of rates close to the previous year's levels indicates that annual inflation may remain relatively flat in the February-April period of 2024. Possible increases that may be seen in domestic energy prices in the second quarter of the year and beyond have been reflected in the Inflation Report forecasts and included within the forecast range with a cautious stance.

Within the framework of the forecasts in the Inflation Report 2024-I, the seasonally adjusted monthly inflation rate is projected to be below 4% on average in the first half of 2024 and around 3% on average excluding January. Disinflation period will start with a rapid decline in annual headline inflation after May. In this period, it is evaluated that favorable base effects, and more importantly, further decline in the underlying trend of inflation will be effective. The continued rebalancing of domestic demand, the completion of wage updates and the additional improvement in expectations caused by the decline in headline inflation will play an important role in this process. Thus, according to the projections, seasonally adjusted average monthly inflation will first drop below 2.5% in the post-May period and then drop to around 1.5% in the last quarter of the year. The decline in the underlying trend of inflation to historical averages will continue in 2025, along with the dissolution of the rigidity in services inflation and by maintaining the monetary stance in line with the targets. At this point, it should be noted that many assumptions that cannot be determined by monetary policy, such as commodity prices, are effective on the CBRT's inflation projection, especially in the short term. The Inflation Report examines in detail the assumptions and economic outlook behind these conditional forecasts.

While the rebalancing in domestic demand and the stable course of the Turkish lira continue in 2024, the main parameters that will stand out are, how strongly inflation expectations will decline and to what extent the stickiness in inflation, especially services inflation, will be broken. Monetary policy will be the main determinant in realizing the path envisaged in the medium term and reducing the underlying trend of inflation to 1% by 2025, and the course of fiscal policy will also be important in this process.

References

CBRT (2019). Reflections of Base Effects on Consumer Price Inflation, Inflation Report 2019-II, Box 3.2.

CBRT (2016). Impacts of Base Effects on the CPI Inflation in 2016, Inflation Report 2016-I, Box 3.1.

ECB (2007). The Role of Base Effects in Driving Recent and Prospective Developments in HICP Inflation. Monthly Bulletin January: 33-35.

ECB (2005). Base Effects and Their Impact on HICP Inflation in Early 2005. Monthly Bulletin January: 31-33.

Box 2.4

General Outlook in the Housing Market

The analysis of the peaks of real house price increases during the 2000-2023 period from a historical perspective reveals that the peaks are usually concentrated during the pre-Global Financial Crisis or the pandemic period. After 2020, Türkiye witnessed considerable increases in housing prices as well. In 2022Q4, real house price increases in Türkiye reached their highest level. In 2023, while the real house price increases recorded a decline, they continued to decouple from the rest of the OECD countries (Chart 1). The importance of the housing market increased further following the Kahramanmaraş earthquakes in 2023. Increases in house prices can implicitly affect inflation by reflecting on rents as well as by affecting living and demand conditions. In this box, developments in the housing market, house prices and rent inflation are analyzed, and the importance of the housing market for price stability is discussed.

Chart 1: House Prices (Real, Annual %Change)*
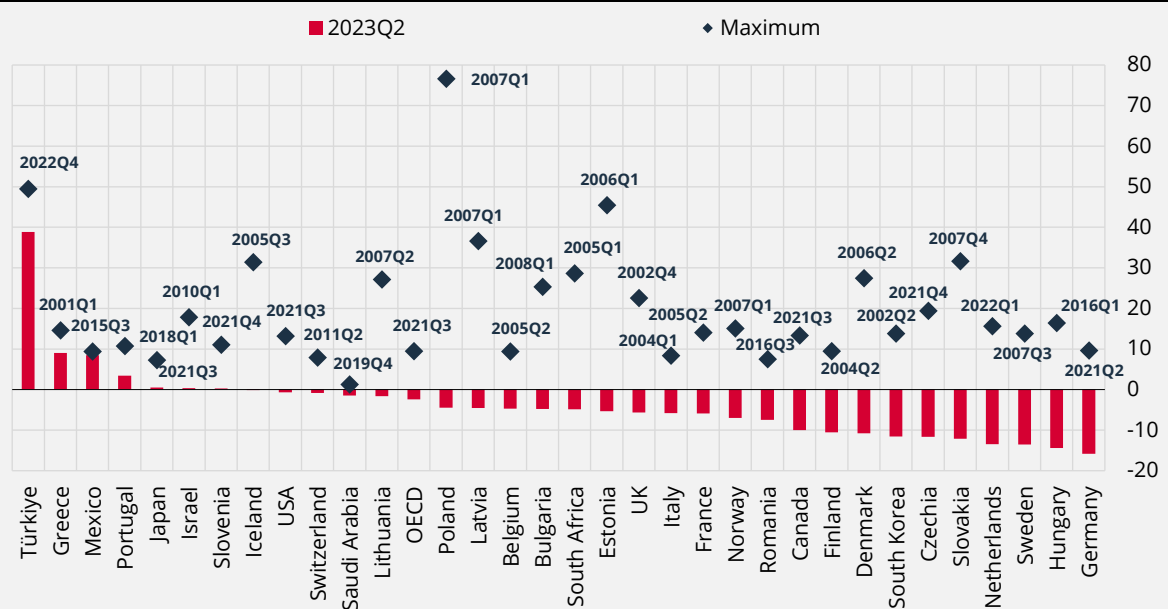
Source: OECD.

* The maximum value shows the greatest annual increase for each country for the period between 2000Q1 and 2023Q2.

The role of the housing market as an investment tool in a high-inflation environment has become more important in recent years. The demand for durable goods, especially housing, automobiles and white goods, has increased both with the high increases in Turkish lira loans and with the motivation to hedge against inflation in a high and volatile inflation environment.[1]

The upward trend in housing prices, which started in 2020 with the impact of the pandemic, continued to accelerate in 2022 and reached their peak in October 2022. Although a slowdown has been observed in the rate of house price increases since the end of 2022, high levels have been maintained. As of November 2023, the annual rate of increase in the house price index was 82.8% (Chart 2).

The annual increase of the rent index, which is a sub-item of the CPI and calculated from the real rents paid by tenants, generally remained below consumer price inflation until the end of 2022. However, rent inflation has strengthened since the beginning of 2022 and has exceeded the increase in consumer prices. With the earthquake disaster in February 2023, rent increases became more pronounced, and as of January 2024, the annual increase in consumer prices was 64.9%, while the annual rent inflation stood very high at 111.8% (Chart 2). In order to examine the reflection of the increase in house prices on rent inflation, the price-rent ratio was calculated by dividing the house price index by the rent index. This rate has increased rapidly with the increase in housing prices starting from 2020. The rapid increase in this rate is due to the slower reflection of the increase in housing prices on overall rents. In fact, housing prices are reflected much more quickly in the advertised rents for vacant homes. As a matter of fact, when a similar calculation is made using the rent advertisement index, it is seen that the pass-through of the increase in house prices to new rents is much higher (Chart 3). On the other hand, the reason for the slow reflection in the rent index measured in the CPI basket is that the ongoing rental contracts in residences are typically updated once a year and are subject to various limits when updating. Therefore, the reflection of the house price increases in inflation is much delayed, and even if house prices do not increase after reaching a certain level, they continue to affect inflation for a long time.

Chart 2: CPI Inflation, Rent Inflation and House Price Index (Annual % Change)
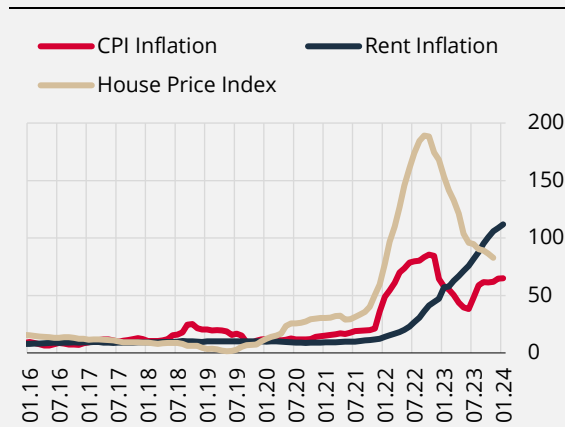
Source: CBRT, TURKSTAT.

Chart 3: Ratios of House Price Index/Rent Index and House Price Index/Rent Advertisement Index* (2019=1)
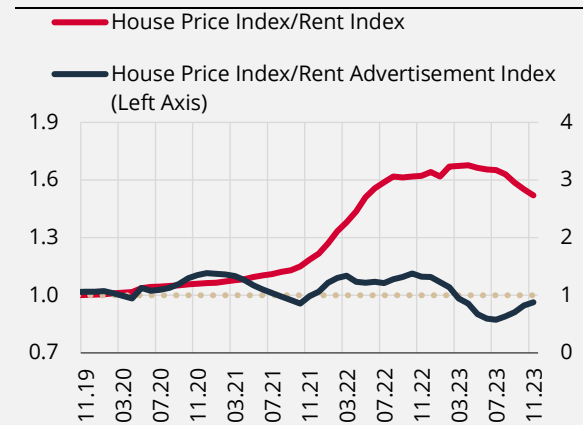
Source: CBRT, Sahibinden.com, TURKSTAT.
* The rent index is a sub-item of CPI. The rent advertisement index is constructed using rents (TRY, m²) collected from the three biggest provinces in Türkiye.

In order to better measure the trend in rents, which is one of the factors affecting the rigidity of inflation, the CBRT makes use of data regarding rental prices on online platforms and rent payments made through the Retail Payment System (RPS), which is the inter-customer TL transfer system of the electronic fund transfer in addition to TURKSTAT data to monitor rent inflation.

Rental prices quoted on online platforms only show the rental costs of residences subject to new contracts and represent prices that have not yet been realized. These data, which are inherently more sensitive to potential shocks that may be observed in the housing market, provide an idea about the general trend in the rental market. Since any impact on rents will be reflected first in new contracts, it is also important to monitor online rents as a leading indicator. Accordingly, the rent increase rates calculated from the advertisements in the three major provinces showed a steady decline after July 2023 and showed an increase in December due to the expected wage updates (Chart 4). The RPS data provides more comprehensive information about rents compared to online platform data, as it allows tracking of ongoing, renewed and newly concluded contracts as well as actual rent payments.

---

[1] For the effect of the mortgage program initiated during the pandemic on house prices, see Akgündüz et al. (2023).

Following the application of cleaning and tracking methods, the relevant dataset was transformed into a panel using the six-month sliding window method covering customers receiving regular rental payments. Although the resulting series has certain divergences from the historical rent index, it is close to the rent index and follows a similar trend (Chart 5). Although this high-frequency data is not an alternative to TURKSTAT's data because it differs in terms of methodology and scope, it is monitored as a leading indicator for rent index.[2] This data also predicted a decrease in rents in the last quarter of the year amid monetary tightening and pointed to an increase due to the January wage updates and the high rent rates updated in January.
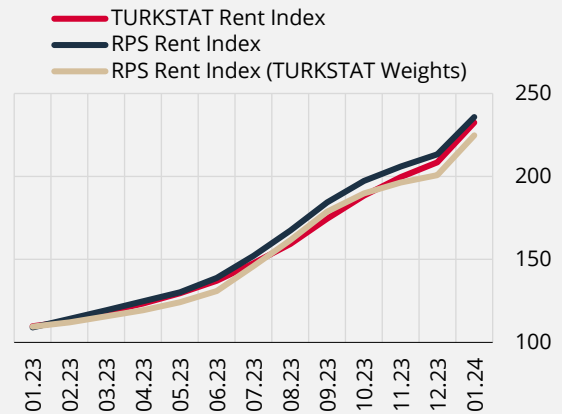
Chart 4: Rental Prices on Online Platforms* (Monthly % Change)
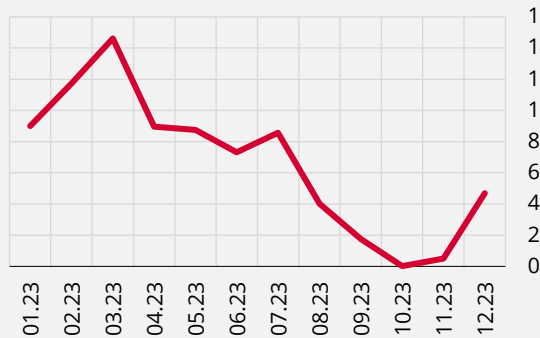
Source: Sahibinden.com.
* Includes ads in three biggest provinces.

Chart 5: TURKSTAT Rent Index and RPS Rent Index* (December 2022=100)

Source: CBRT, TURKSTAT.
* TURKSTAT weights are the typical monthly contract renewal frequency in the TURKSTAT sample.

Recent data demonstrates that housing inflation, unless faced with important shocks such as increases in wages, could swiftly retreat as a result of monetary tightening, but rents measured in CPI will mechanically continue to reflect previous increases in house prices. Nevertheless, regulations and supply-related factors are also important for the soundness of the residential real estate market and for their contribution to price stability. Policies regarding the residential real estate market in various countries point out to the need for infrastructure for the effective management of this market. Digital technology offers an opportunity for healthier analysis and the development of effective policies aimed at tackling the problem. To that end, tracking all rental contracts via an online platform (registering contracts and housing properties), setting standards in rental contracts and ensuring compliance can contribute to the establishment of regulations based on impact analysis for the healthy functioning of the rental market. In this context, the Ministry of Treasury and Finance decided that rental contracts should be arranged via the e-Devlet online platform as part of the Action Plan to Counter Informal Economy for the years 2023-2025. Considering the negative effects of regulations, a planned increase in housing supply is seen as a convenient solution in the medium and long run.[3] Another practice is "state-supported rental houses" offered in various countries. For instance, in the Netherlands, houses owned by the state are allocated to various income groups at lower rental prices

---

[2] TURKSTAT tracks the price of the "same" house as required by its methodology. The principle of ensuring all goods and services in the CPI basket to be of the same quality throughout the year is also valid for rents. While the same tenant can reside in a particular house for several years, a number of tenants can move in and out of the same house over the years. When the owner moves into the selected house or when the selected house is demolished, a substitute house is used. When the quality of house changes or when a new house is chosen to be tracked, a quality correction is applied (TURKSTAT, 2023 Consumer Price Index Methodology Document). Payment systems database does not contain data on the properties of houses or details of rental contracts. Data is prone to user errors made during the payment process.

[3] Existing studies note that rent regulations have negative effects on the construction and maintenance of houses as well as real estate investments. While more regulation would shrink the rental housing market, less regulation could increase tenancy insecurity (Haffner et al., 2008). Kholodilin and Kohl (2023) show that in European countries with greater rental supervision, the number of rental houses decreased and homeownership rates increased since the World War II. In this context, rent regulations protecting tenants in the short run should be implemented carefully in order not to disrupt the rental housing market.

compared to the private sector. In Italy, as part of a similar policy, rents for social houses are subsidized depending on the tenants' level of income. Construction of social houses with the aim of

renting by the private sector along with the public sector is another step to be taken to increase rental supply. Houses to be rented by private sector firms along with individual investors, as seen in global examples, increase institutionalization and make it easier to track, regulate and tax rents. If these firms sell shares to the public and diversify their portfolios, they decrease the risks faced by individuals investing in the rental housing market, provide participants with regular cash flow, and enable tenants, even if their savings are low, to be hedged against shocks in the rental housing market. NGOs or institutional investors initiating shared ownership schemes,[4] especially in major cities where house prices are high, could pave the way for households, especially those with low levels of savings, to enter the housing market.

Chart 6: Number of New Households and Occupancy Permits (Thousands)
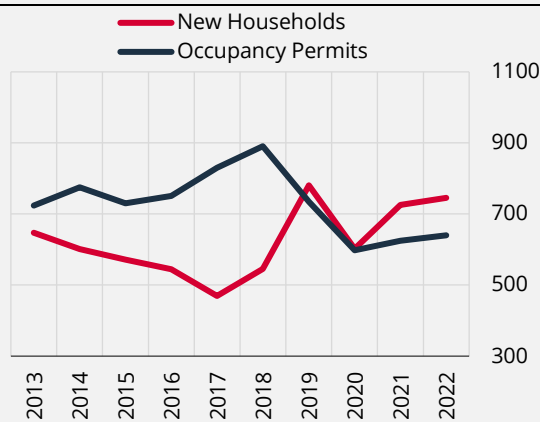
Source: TURKSTAT.

Chart 7: Difference Between Occupancy Permits and Number of New Households (Thousands)
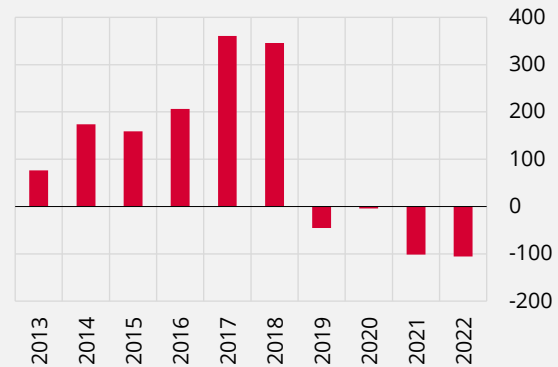
Source: TURSTAT.

In addition to monetary policy, other economic policies to be implemented in the coming period are important for the housing market and rents. The 25% limit[5] on rent increases has been in effect since July 2021, and appropriate financing is provided to first-time home buyers. Increasing the effectiveness of taxes such as the title deed fee, the valuable property tax, the housing capital gains tax and the income tax on rental income, which are currently in force, is considered important for the efficient functioning of the housing market. Besides, legal measures such as gradual taxation according to the number of houses owned and a vacant house tax, introducing long-term, variable-interest or wage-indexed flexible housing loan models to help employees with regular income make house purchases and extending loans with interest rates that vary according to the number of houses owned stand out as demand-side arrangements. For example, related steps have been taken by the Banking Regulation and Supervision Agency (BRSA) to reduce the maximum loan amount for consumers who already own at least one house. [6]

Apart from demand-side developments, another important factor having an effect on the housing market in Türkiye is supply. As a matter of fact, the number of buildings receiving occupancy permits has decreased in recent years, and with the effect of the increasing population and urbanization rate, the formation of new households has exceeded the formation of new housing (Charts 6 and 7). After the Kahramanmaraş earthquakes, housing demand has increased further.

When the home ownership rate is examined by income groups, the ownership rate has been low in lower income groups in recent years (Chart 8). In order to increase home ownership rates, it is

---

[4] For instance, first-time home buyers in London could buy 25% of their homes and rent the rest, having the option to buy the rest of the shares gradually through the "shared ownership" scheme. https://www.gov.uk/shared-ownership-scheme/who-can-apply.

[5] In Türkiye, the rent cap limiting annual rent increases to 25% is going to end in July 2024. RPS data indicate that the rent update rate in line with this constraint is quite low.

[6] https://www.bddk.org.tr/Mevzuat/DokumanGetir/1191.

imperative that house supply not be interrupted, and the construction of social houses continue with the supply-side support to be provided to the private sector following the achievement of permanent price stability.

Chart 8: Home Ownership Rate for Lower Income Groups*
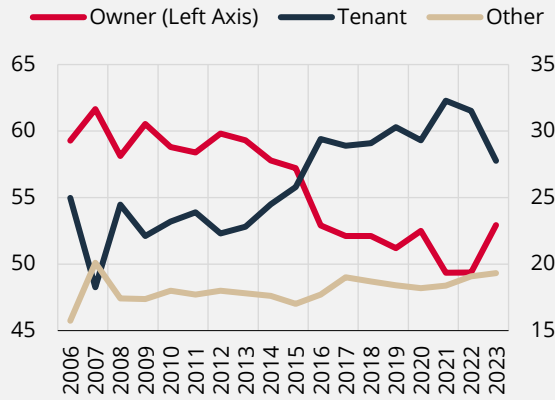
Source: TURKSTAT Income and Living Conditions Research.
* Households whose income is lower than 60% of the median household income.

Chart 9: Return on Real Estate Investment* (Deflated with CPI)

Source: CBRT, TURKSTAT.
* Similar results are obtained by deflating return on real estate investment using exchange rate depreciation and construction costs.

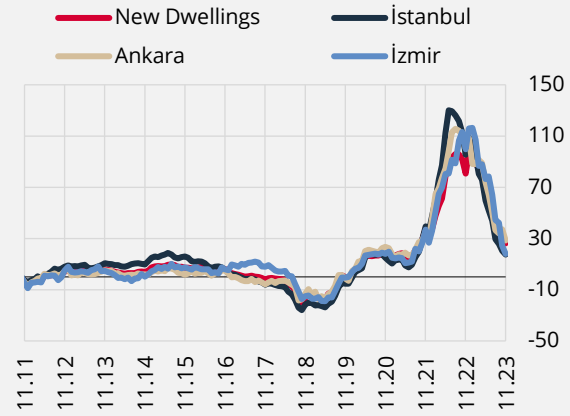In sum, rent inflation, which is affected by housing market developments with a lag, is relatively stickier, and the upward pressure on consumer price inflation caused by increases in rent inflation is expected to continue for a while. With price stability and a correction in expectations, the return on real estate investments relative to other alternative investment options is expected to converge to historical averages. In this case, since real increases in house prices and expectations of a real increase would decrease, demand for houses for investment purposes would witness a gradual correction, and the relative cost of keeping homes empty would increase due to the increase in the investment horizon in the housing market and an increase in risk-free return in financial markets. At this point, steps to be taken in coordination with monetary policy and other economic policies are important in order to achieve medium- and long-term stability in the housing market.

References

Akgündüz, Y. E., Dursun-de Neef, H. Ö., Hacıhasanoğlu, Y. S. & Yılmaz, F. (2023). Cost of Credit, Mortgage Demand and House Prices. Journal of Banking & Finance, 154, 106953.

Haffner, M., Elsinga, M. & Hoekstra, J. (2008). Rent Regulation: The Balance between Private Landlords and Tenants in Six European Countries. European Journal of Housing Policy, 8, 217-233.

Kholodilin, K. A. & Kohl, S. (2023). Do Rent Controls and Other Tenancy Regulations Affect New Construction? Some Answers from Long-run Historical Evidence. International Journal of Housing Policy, 23, 671-691.

TURKSTAT (2023). Consumer Price Index Metadata.

3. Medium-Term Projections

3.1 Current State, Short-Term Outlook and Assumptions

Changes in Key Forecast Variables

In the third quarter of the year, the growth composition on both the production and expenditures sides was more balanced compared to previous quarters. GDP increased by 0.3% quarter-on-quarter and 5.9% year-on-year. The services sector continued to provide the highest contribution to annual growth, while the industrial sector made a positive contribution for the first time in four quarters. On the expenditures side, the highest contribution to annual growth was made by final domestic demand driven by private consumption. Data for the fourth quarter suggests that growth continued, albeit at a slower pace. Meanwhile, domestic demand remained robust. Indicators for real credit growth suggest that commercial and consumer loans converged to their long-term averages. However, the decline in personal credit cards was slower. Taken together, output gap indicators, albeit remaining in positive territory, point to a gradual decline in line with our projections (Box 3.1).

In the fourth quarter of 2023, consumer inflation and B-index inflation stood at 64.8% and 68.0%, respectively, and remained within the forecast range of the previous Inflation Report. Although domestic demand weakened in the last quarter of the year, it maintained its buoyant course. Global commodity prices declined in the last quarter of 2023 due to the fall in crude oil prices. On the other hand, domestic energy prices soared due to the exceeding of free limits amid increase in natural gas consumption, and as projected, natural gas prices made an upward contribution to annual consumer inflation in the last quarter. Similarly, at a time of falling global food prices, domestic food inflation rose by 72.0% year-on-year and ended the year above headline inflation. Tax- and administered price-driven effects on headline inflation persisted in the last quarter. Regulations announced after July to meet the additional financing needs of the public sector due to the earthquake (including fuel oil) and taxes pushed the 2023 inflation rate up by 9.1 points in total (Zoom-In 2.6). As a result, headline inflation and B-index inflation ended the year at 64.8% and 68.0%, respectively (Table 3.1.1).

In the last quarter of 2023, indicators for the underlying trend of inflation pointed to a significant slowdown. Core indicators were more favorable than projected in the previous Report, and monthly increases in the B and C indices remained below their upward trends in the first half of 2023. The improvement in the underlying trend was mainly driven by price developments in core goods. Price increases in the services sector continued, albeit at a slower pace. The stable course of the exchange rate, the completion of the pass-through of cost-side effects to inflation in the third quarter and the rebalancing in domestic demand stood out as the main drivers of the decline in the underlying trend of inflation in the last quarter of the year. Survey indicators suggest that inflation expectations were revised downwards in the last quarter of the year, more pronounced in shorter terms (Box 3.2).

Table 3.1.1: Changes in Key Forecast Variables*

	2023-IV
Consumer Inflation	64.8
(Quarter-End, Annual % Change)	(65.2)
B-Index Inflation	68.0
(Quarter-End, Annual % Change)	(67.2)

* Figures in parentheses are from the previous Inflation Report.

Assumptions on Exogenous Variables

The global growth outlook remains subdued, in line with the projections in the previous Inflation Report. The impact of tighter financial conditions on the global economy became more salient in the last quarter. Having driven growth in the first half of 2023, the services sector lost momentum in the second half. The manufacturing industry followed a flatter course. Leading indicators for global growth suggest that growth continues to lose momentum. While the euro area maintained its weak outlook, the US economy diverged positively, with higher-than-expected growth figures in the third and fourth quarters. The Chinese economy also remained weak. Against this backdrop, the export-weighted global growth index forecasts for 2023 and 2024, prepared based on Türkiye's trading partners, were maintained at 1.7% and 2.0%, respectively. For 2025, a growth rate of 2.3% has been projected owing to the recovery in the euro area.

Global inflation continued to fall on the back of demand conditions and energy prices. Due to the mild course of inflation, many central banks have largely completed their tightening processes. The rapid decline in inflation rates in advanced economies in the last quarter of the year brought forward expectations for interest rate cuts. Compared to the previous reporting period, the downtrend in core inflation rates also became more evident, falling to 3.5-4%. Interest rate cuts accelerated in emerging economies, yet inflation still hovers above the targets in most of these countries. In the upcoming period, interest rate cuts are likely to become widespread in advanced and emerging economies, depending on the sustained favorable outlook for inflation. Despite the moderate normalization, the continued buoyancy in the labor market and geopolitical fluctuations in energy prices stand out as risk factors. As global inflation remains above target levels, central banks are expected to continue their rate cuts so as to maintain monetary tightness and ensure a sustainable decline in inflation. In fact, ECB and Fed officials' forward guidance on a more gradual rate cut cycle than priced in by the market has slightly tilted the expected policy rate path upwards.

Despite geopolitical developments, commodity prices followed a downward trend with the contribution of energy prices. Levels of oil stocks, financial conditions, and weak global growth led oil prices to retreat in the last quarter*.* Meanwhile, geopolitical developments, the global growth outlook, and decisions by OPEC+ countries still keep the downside and upside risks on prices alive (Zoom-In 2.1). Against this backdrop, the annual average oil price was USD 82.7 in 2023, remaining below the assumption stated in the previous reporting period. The forecasts for 2024 and 2025 were revised downwards, and oil prices were assumed to stand at an average level of USD 83.6 and USD 81.2 (Chart 3.1.1). Despite declining, the headline commodity index still hovers above its 10-year average. The quarter-on-quarter decline in the agricultural commodity index was not accompanied by industrial commodity prices, which remained flat. Having fallen by 11.6% in 2023, import prices are assumed to end 2024 with an average decline of 0.1% and 2025 with an average increase of 0.7% (Chart 3.1.2).

Forecasts are based on an outlook in which macroeconomic policies are determined in a coordinated manner by adopting a medium-term perspective and focusing on disinflation. In this context, it is assumed that fiscal policy within the framework of the MTP will continue to be formed in a way to contribute to the rebalancing process in the economy and that administered prices, borrowing, tax and income policies and wage adjustments will be largely determined to support the disinflation process. The outlook underlying our forecasts also implies that earthquake-related expenditures will be balanced and spread over a long period of time so as not to adversely affect budgetary discipline and macro financial stability.

Chart 3.1.1: Revisions in Oil Price Assumptions* (USD/bbl)
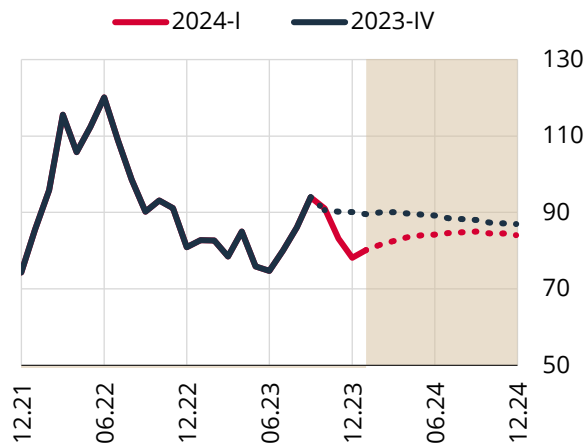
Source: Bloomberg, CBRT.
* Shaded area denotes the forecast period.

Chart 3.1.2: Revisions in Import Price Assumptions* (Index, 2015=100)
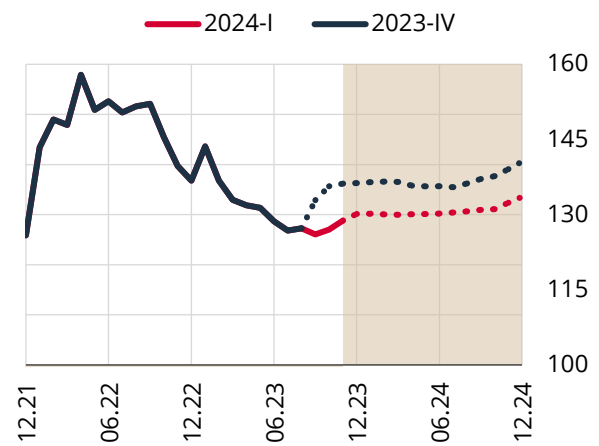
Source: CBRT, TURKSTAT.
* Shaded area denotes the forecast period.

The assumption for food prices was revised upwards for 2024. Annual food inflation ended 2023 at 72.0%, above headline inflation, exceeding the assumptions of the previous Report. In the upcoming period, food inflation is assumed to decline and end 2024 and 2025 at 34.6% and 15.0%, respectively (Table 3.1.2).

Table 3.1.2: Revisions in Assumptions*

	2023	2024	2025
Export-Weighted Global Production Index (Annual Average % Change)	1.7 (1.7)	2.0 (2.0)	2.3 (-)
Oil Prices (Average, USD)	82.7 (84.2)	83.6 (88.7)	81.2 (-)
Import Prices (USD, Annual Average % Change)	-11.6 (-10.0)	-0.1 (2.7)	0.7 (-)
Food Prices (Year-End % Change)	72.0 (66.7)	34.6 (31.0)	15.0 (-)

* Figures in parentheses are from the previous Inflation Report.

3.2 Medium-Term Outlook

Year-end inflation forecasts for 2024, 2025 and 2026 are maintained as 36%, 14% and 9%, respectively. Annual inflation stood at 64.8% at end-2023, in line with the mid-point of the forecast range presented in the 2023-IV Inflation Report. Global growth assumptions underlying inflation and forecasts were maintained at similar levels to the previous reporting period, while commodity prices were revised downwards due to the fall in energy prices. Unit labor costs drove the year-end inflation forecast for 2024 upwards due to the wage increases for 2024, while the underlying trend of inflation pulled it down. Moreover, despite the recent mild course, volatilities in oil prices to be caused by geopolitical developments keep the uncertainties over inflation forecasts alive.

Inflation is projected to fall steadily from the second half of 2024, after posting temporary increases in the first quarter. The impact of quantitative tightening and selective credit policies, both supported by the simplification of the macroprudential framework, in addition to the significant hike in the policy rate, continues to be mirrored in financial conditions. With the help of tightening steps, loan rates present an outlook consistent with the degree of the targeted financial tightness. The improvement in inflation

expectations is anticipated to continue while the indicators for the underlying trend are decelerating. Medium-term forecasts are based on an outlook in which the tight monetary policy stance will be maintained until the inflation outlook improves significantly, quantitative tightening and macroprudential policies to reduce volatilities in credit supply and deposit rates will strengthen the monetary transmission mechanism, and, if needed, the degree of monetary tightness will be adjusted on a data-driven basis. This tight monetary policy stance is expected to accentuate the rebalancing of domestic demand and the gradual improvement in the current account balance, albeit with a lag compared with the previous reporting period (Chart 3.2.3). The tight monetary policy stance will contribute to stronger growth in demand for Turkish lira assets. Accordingly, with 70% probability, inflation is projected to be between 30% and 42% (with a mid-point of 36%) at end-2024, between 7% and 21% (with a mid-point of 14%) at end-2025, and to fall to single-digit levels at 9%, before stabilizing at the 5% target in the medium term (Chart 3.2.1).

Chart 3.2.1: Inflation Forecasts* (%)
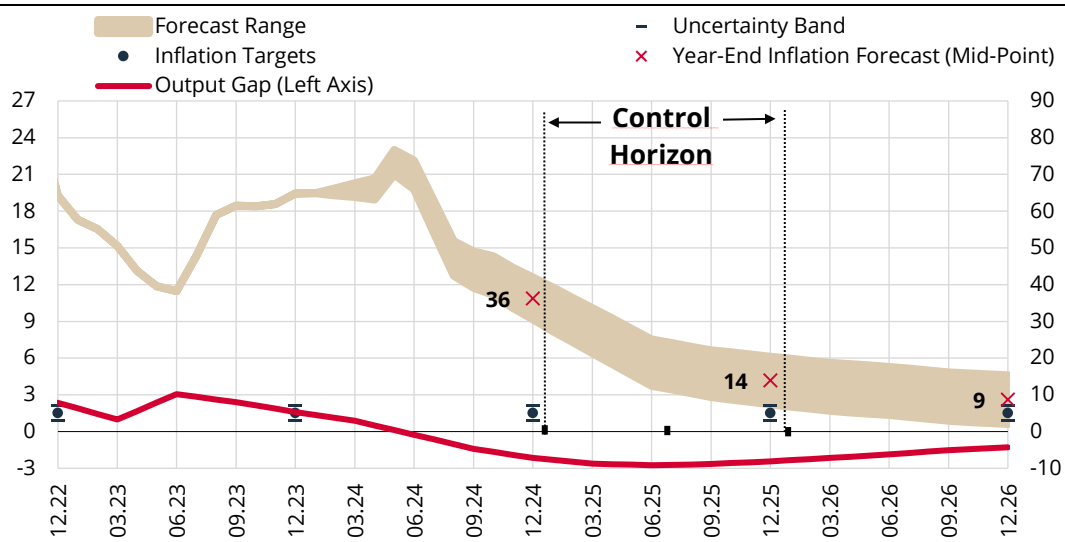
Source: CBRT, TURKSTAT.

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

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

	2024
Inflation Report 2023-IV Forecast (%)	36
Inflation Report 2024-I Forecast (%)	36
Forecast Revision Compared to Inflation Report 2023-IV	0
Sources of Forecast Revision (% Points)	
Underlying Inflation	-3.2
Unit Labor Cost	+1.5
Turkish Lira Import Prices	+0.5
Output Gap	+0.4
Food Prices	+0.9
Administered Prices	-0.1

Source: CBRT.

The end-2024 inflation forecast is maintained at 36% (Chart 3.2.2). An array of counterbalancing factors came into play in maintaining our forecasts. Due to wage adjustments and public spending, the output gap is projected to be higher in the first quarter of 2024 than in the previous Report. In this respect, the rebalancing process in domestic demand will continue, albeit with a lag of one quarter, with the contribution of tight monetary policy and fiscal policy coordination (Chart 3.2.3). Against this background, the revision to the output gap forecast increased our inflation forecast for 2024 by 0.4 points. In addition, unit labor costs, which increased due to higher-than-expected wage increases, pushed our forecast up by 1.5 points. The total impact of the revisions in food prices and Turkish lira-denominated import prices is 1.4 points. Administered prices brought year-end forecasts down by 0.1 points under the assumption that tobacco prices will increase less than in the previous Report on the back of the adjustment in the tax structure. Moreover, the improvement in the underlying trend of inflation had a downward effect on forecasts. First, the impact of monetary tightness on pricing behavior was stronger than we had anticipated. Additionally, the fact that the policy stance will be maintained for a longer period than envisaged in the previous Report in line with the interim targets will also affect the underlying trend positively. Therefore, the change in the underlying trend lowered forecasts by 3.2 points (Table 3.2.1).

Chart 3.2.2: Inflation Forecast (Quarter-End, Annual, %)
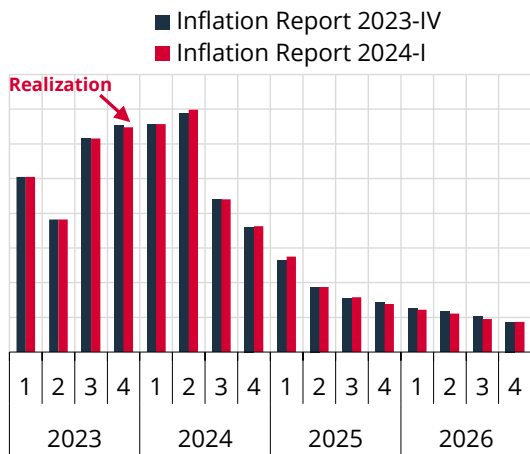
Source: CBRT, TURKSTAT.

Chart 3.2.3: Output Gap Forecast (%)
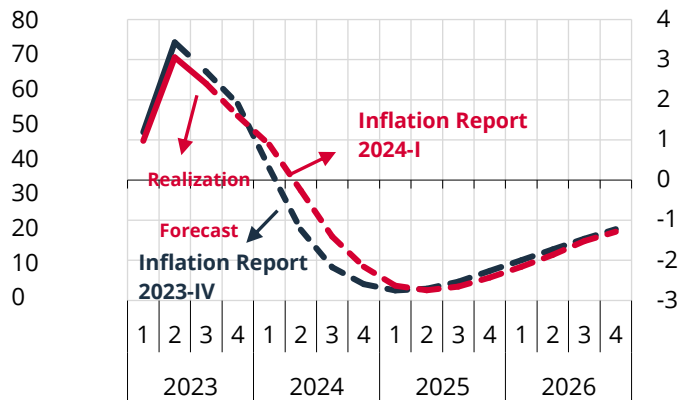
Source: CBRT.

Forecasts are based on an outlook in which the global growth outlook is consistent with the previous reporting period, and inflation will remain above targets despite a faster decline in global inflation. The impact of the tight monetary policy stance has recently become more discernible, but the inflation realization is still above the targets. The decline in global inflation rates and the weak economic outlook feed the expectations that the rate cuts initiated by emerging economies will spread across the board. Given the above-target inflation developments, central banks are expected to stick to their rate-cutting processes in a way that sustains the monetary tightness and the fall in inflation. In this context, global financial conditions are assumed to be slightly looser in the coming period than anticipated in the previous reporting period.

Although temporary increases are expected in inflation in the first half of 2024, the disinflation process is expected to become more pronounced in the second half of the year (Chart 3.2.2). In the current reporting period, indicators for the underlying trend have slowed down. In 2024, the contributions to inflation from factors that fall outside the scope of the monetary policy, such as unprocessed food and alcohol-tobacco, and automatic tax adjustments, are expected to decrease. However, monthly inflation is expected to see temporary rises in the first half of 2024 due to anticipated hikes in domestic energy prices and the effects peculiar to the period of free use of natural gas. Meanwhile, wage adjustments as well as the cost channel are expected to play a significant role in containing the fall in demand in the first quarter of the year. However, the fact that there will be no revision to the minimum wage for the second half of 2024 is expected to improve the effectiveness of the monetary tightness, thereby making a significant contribution to the disinflationary process. Additionally, due to the items with time-dependent pricing, monthly inflation rose in January, consistent with the forecasts. Nevertheless, it is estimated that the rise in inflation will slow

as of February and converge to the level of the underlying trend in the last quarter of 2023. As the lagged and cumulative effects of monetary tightening kick in, inflation is expected to peak in May. With the contribution of the base effect in July and August, the disinflation process will be more evident in the second half of the year.

Inflation forecasts are based on a policy framework in which the monetary tightness required to establish the disinflation course is achieved, and this level of tightness will be maintained as long as needed. The outlook underlying our forecasts envisages that the current level of the policy rate will be maintained until there is a significant decline in the underlying trend of inflation and until inflation expectations converge to the projected forecast range. On the back of the strong monetary tightening, selective credit and forward guidance policies, 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 to achieving a permanent decline in inflation. Moreover, it is also important that inflation expectations improve and the uncertainty in distribution diminishes to pull down the current levels in inflation without placing a significant weight on growth. In addition to the rate hike under the integrated policy approach, the current micro and macroprudential framework is also being simplified with selective credit and quantitative tightening steps taken to strengthen macro financial stability. These decisions aim to increase the demand for Turkish lira-denominated financial assets in a permanent and sustainable way, bring moderation to excess Turkish lira liquidity and excess consumption demand, stabilize exchange rates and enhance the effectiveness of the monetary transmission mechanism. Accordingly, forecasts are based on a policy framework in which quantitative tightening steps will continue by extending sterilization tools, and macroprudential policies will be implemented in the face of potential volatility in credit supply and deposit rates. Maintaining monetary tightness for as long as needed in line with the main objective of price stability is also expected to contribute to the improvement in the sovereign risk premium. Moreover, it is assumed that fiscal discipline will be maintained, and fiscal policies will support the disinflationary process in coordination with monetary policy during the period from 2024 to 2026.

Analyses of the impact of the monetary tightening on financial and economic conditions suggest that the banking sector will remain robust. The fact that approximately half of the banks' Turkish lira loans and securities portfolios are at floating rates, that Turkish lira fixed-rate securities are mainly accounted for at amortized cost, which is not sensitive to interest rate changes, and that the maturity of deposits is extended with the backing of reserve requirement practices reduce the sector's vulnerability to interest rate changes. The capital adequacy ratio of the banking sector, which is well above the legal limits, is considered to be sufficient to absorb losses that may stem from interest rate changes. Banks' asset quality and profitability indicators remain strong, which supports financial stability during the monetary tightening period.

3.3. Key Risks to Inflation Forecasts and Possible Impact Channels

The disinflation process may be weakened if the decelerating effects of monetary tightening on domestic demand are not seen quickly enough. On the back of the impact of the tight monetary policy on financial conditions, domestic demand conditions have been showing signs of rebalancing since the third quarter of 2023. The rebalancing in domestic demand is expected to contribute to the current account balance by weakening imports, and to the fall in inflation through the demand channel by moderating excessive consumption. On the other hand, likely risks that the elevated levels of consumer inflation expectations may pose to the consumption tendency and loan demand as well as the impact of wage and fiscal policies may cause domestic demand to gain persistence and hamper the rebalancing process.

The continued persistentence in services prices and a slower-than-anticipated deceleration in the underlying trend of inflation may keep inflationary pressures alive. Persistence in services prices continues (Inflation Report 2023-III, Box 2.3). Services prices remain sticky, which will pose an upside risk to inflation forecasts. The recent pause in the deceleration of the underlying trend is also considered as a risk to inflation forecasts.

Geopolitical developments and volatility in commodity prices pose risks to inflation forecasts. Geopolitical risks and the continued production cuts by OPEC+ countries cause volatility in oil prices. Meanwhile, global financial conditions and the weak global growth outlook, particularly in the euro area, put downward pressure on commodity prices. Although commodity prices posted broad-based declines in the previous

reporting period, volatility is likely to persist due to current downside and upside risks. Moreover, geopolitical developments may also affect risk perceptions about Türkiye.

The weak global growth outlook is expected to continue in 2024. While the effects of tightening in financial conditions on the real economy are observed clearly, leading indicators suggest that the global growth outlook remains weak, mainly due to the services sector. Moreover, recent geopolitical developments keep the risks to the global growth outlook alive.

The rate-cut cycle of central banks of advanced economies will be influential on global financial conditions. The recent decline in energy prices, the ongoing easing in supply-side pressures and the restraining effect of global financial conditions on demand have led to a decline in global inflation rates. Against this backdrop, central banks of advanced economies completed their tightening processes, while uncertainties over the timing and pace of rate cuts in advanced economies increased in global financial markets. These two factors may play a role in inflation dynamics by affecting exchange rates, aggregate demand conditions and import prices in Türkiye through capital flows, external demand and commodity prices.

The CBRT continues to support the monetary tightening process via quantitative tightening by diversifying its sterilization tools. Recently, the excess liquidity in the market has been sterilized through reserve requirements and deposit purchase auctions. These steps aim to eliminate excess Turkish lira liquidity and enhance the effectiveness of monetary policy. Accordingly, the effects of liquidity conditions on monetary transmission and the impact of the policy rate on short, medium and long-term market rates as well as loan and deposit rates are closely monitored.

Inflation expectations remain elevated. Inflation expectations of economic units (professionals, firms and consumers) play a key role in pricing behavior, wage decisions, portfolio preferences and consumption/credit demand (Box 3.2). According to the Survey of Market Participants, although medium-term inflation expectations hover above targeted levels, both the level and the dispersion of expectations have recently improved. The improvement in inflation expectations indicates that the upside risks to the inflation outlook through the pricing behavior channel have diminished.

Adjustments likely to be made in indirect taxes to finance earthquake-related public expenditures may pose risks to inflation. The amount and timing of earthquake-related public expenditures will be important for maintaining fiscal discipline. Maintaining fiscal discipline is essential for anchoring pricing behavior, rebalancing domestic demand and for the course of the sovereign risk premium. Nevertheless, a rise in the weight of indirect taxes in the tax revenues policy may not only directly increase prices but also may have indirect effects by distorting inflation expectations. In this respect, it will be important to introduce reforms in direct taxes and increase their weight in total taxes to support the disinflation process.

Minimum wages, taxes and administered prices affect inflation and inflation expectations. The level and frequency of minimum wage and public salary adjustments may affect inflation and inflation expectations through production cost and demand channels. Tax and administered price adjustments that are not in line with the projected disinflation path may put pressure on inflation. Coordination of economic policies is critical to achieve the inflation target as soon as possible.

Table 3.2.2: Key Risks to Inflation Forecasts and Possible Impact Channels*

Risk	Evaluation of Risks Compared to the Baseline Scenario and Possible Effects on Inflation (↑, ↔ , ↓)		Tracked Indicators
Risks to the course of energy prices	• Sustained underproduction by OPEC+ countries and additional cuts in production keep supply-side pressures on oil prices alive.	↑	• Crude oil prices and demand-supply balance • OPEC+ decisions • Indicators for domestic energy market • Administered prices
	• If the recent geopolitical developments impact a wider area, upside risks to energy prices will emerge.	↑	
Risks to global financial markets and macroeconomic outlook	• In central banks of advanced economies implementing tight monetary policy, the tightening cycles have been terminated owing to the improvement in core inflation and the underlying trend. Accordingly, expectations of policy rate cuts by central banks of advanced economies have been brought forward, while uncertainties over the timing and speed of the easing cycle remain.	↔	• Global inflation rates • Monetary policy response in advanced and emerging economies • Global risk appetite indicators • Export-weighted global economic activity index • Global trade volume and inflation developments • Import and commodity prices
Demand Conditions	• Although the projected rebalancing in domestic demand started in the third quarter and continued in the fourth quarter, aggregate demand conditions are still at an inflationary level. A delayed rebalancing in aggregate demand conditions due to wage and fiscal policies may put pressure on the targeted disinflation path.	↑	• Domestic demand indicators • Retail sales volume index • Credit card spending • White goods and automobile sales
Inflation expectations not converging to projected forecast range	• Despite the improvement in medium-term inflation expectations in terms of both the level and measures of dispersion, the elevated level of expectations keeps upside risks to inflation forecasts alive.	↑	• Key inflation indicators • Indicators for backward-indexation behavior in inflation expectations • Distribution of inflation expectations • Inflation uncertainty indicators • Survey and market pricing-based inflation and exchange rate expectations

| Stickiness in services prices and underlying trend of inflation | • Continued persistence in services prices will pose an upside risk to inflation forecasts. | ↑ | • Persistence in services inflation |
	• In January, the underlying trend of inflation posted a temporary rise due to minimum wage adjustments and items with highly time-dependent prices. General and minimum wage adjustments increase cost-side pressures, exerting risk on pricing behaviors.	↑	• Tax adjustments • Administered prices • Minimum wage adjustments • Real unit labor costs
Risks to efficiency of coordination between monetary, fiscal and financial policies	• Adjustments in the minimum wage and salaries of public employees may pose risks to the rebalancing of domestic demand.	↑	• Adjustments in administered prices and taxes
	• The fact that the minimum wage will not be revised in the second half of 2024 is expected to enhance the effectiveness of monetary tightness and make a significant contribution to the disinflation process.	↓	• Developments in tax revenues and public expenditures
	• Introducing reforms in direct taxes and increasing their weight in total taxes will be important.	↓	• MTP and fiscal policy measures • Budget and public debt stock indicators
	• Possible tax arrangements for financing earthquake-related public expenditures, especially if made through indirect taxes, will keep the upside risks to inflation alive.	↑	• Structural budget balance forecasts • Ratio of direct taxes in total taxes
	• Insufficient coordination among monetary, financial and fiscal policies during the economic recovery process poses risks to the current account balance, inflation and the rebalancing process in domestic demand.	↑	

* Each risk row in the table indicates the possible channel and the direction for the change in inflation forecasts in the case that the mentioned risk materializes. The signs ↑, ↓ indicate that the risk on the inflation forecast is upward and downward, 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 column on the right.

Box 3.1

Output Gap

Accurate measurement and timely monitoring of demand-side developments in the economy are of critical importance for central banks implementing inflation targeting regime from the monetary policy perspective. In this context, central banks closely monitor the output gap series[1], defined as the percentage point difference ($(y-y^p)/y^p$x100) of the current output level (y) relative to the potential output level (y^p) (Chart 1). Within the framework of monetary policy, potential output corresponds to the highest level of production that can be achieved without leading to an increase in inflation by using labor and capital factors efficiently, given the level of technology, and refers to the level of production that will not generate additional inflationary pressure. When the level of production is lower (higher) than its potential, in other words, when the output gap is negative (positive), it indicates that demand conditions may have a disinflationary (inflationary) effect. On the other hand, when the potential output level is taken as given, the change in the level of the output gap also provides information on the level of growth relative to potential. For instance, a decrease in the output gap indicates that growth will be below the potential growth rate corresponding to that period, while an increase in the output gap indicates that growth will be above potential. The output gap is also frequently used in the business cycle literature to distinguish between boom/overheating periods when output surpasses its potential and bust periods when output moves below its potential.

Chart 1: Potential Output and Output Gap
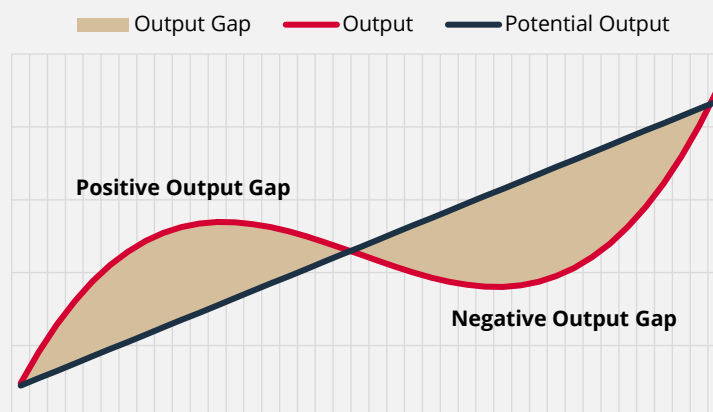
Output Gap Indicators Monitored by the CBRT

Since potential production or output gap figures in the economy are variables that cannot be observed directly, they are estimated with alternative methods in practice. In this respect, historical levels of the aforementioned variables can be constructed by estimation approaches such as production function and structural models, as well as by computation using various statistical filtering methods. On the other hand, survey indicators, which, by definition, directly indicate the course of demand conditions compared to their potential, such as the capacity utilization rate, are also used.

The indicators constructed by the CBRT to estimate the historical level of the output gap can be classified under three headings. The first group is based on statistical methods. There are four indicators within this group. The first two indicators are obtained by passing the GDP series through the Hodrick Prescott (HP) filter with two different smoothing parameters. The other indicator within this group is derived by enriching the output gap series obtained from the HP filter with the net credit use, employing coefficients from econometric models.

---

[1] The definition of output gap is sometimes confused with the difference of the growth rate between two periods from the potential growth rate, i.e. ($\Delta y/y$)/($\Delta y^p/y^p$). As explained here, the output gap is defined as the percentage point difference ($(y-y^p)/y^p$x100) between the current level of output (y) and its potential level (y^p).

The last indicator in this group is obtained by filtering out industrial production index subgroups by HP and aggregating them with the weights of their corresponding inflation series.[2] There is a single indicator in the second group. This indicator is based on the combination of survey data and leading indicator series that have an inherent output gap characteristic. In this indicator, in addition to survey data such as capacity utilization rate and backlog, series such as office occupancy rate and aircraft occupancy rate are used.[3] In the third group, there are series acquired from general equilibrium models. These models are in a New Keynesian setup and use basic equations such as the Phillips equation, Taylor's rule and dynamic IS. Models differ from each other with regard to features such as whether they have a labor block, use calibration or Bayesian estimation for parameter selection, directly estimate the output gap or aggregate components like domestic demand gap and export gap.[4] Since the output gap is an unobservable variable, the approaches discussed here are likely to have their own uncertainty ranges.

The indicators briefly introduced above vary in terms of properties such as end-sample bias, being affected by data revisions, economic consistency, and may give different signals from time to time. In this respect, the historical output gap measure is obtained from eight separate indicators. As well as the level of this measure, the extent to which the underlying series co-move with each other is of great importance in analyzing demand conditions. For instance, it is noteworthy that the divergence between the series has increased recently (Chart 2). This suggests that uncertainty regarding the level of the output gap has risen.

Chart 2: CBRT Output Gap Indicators
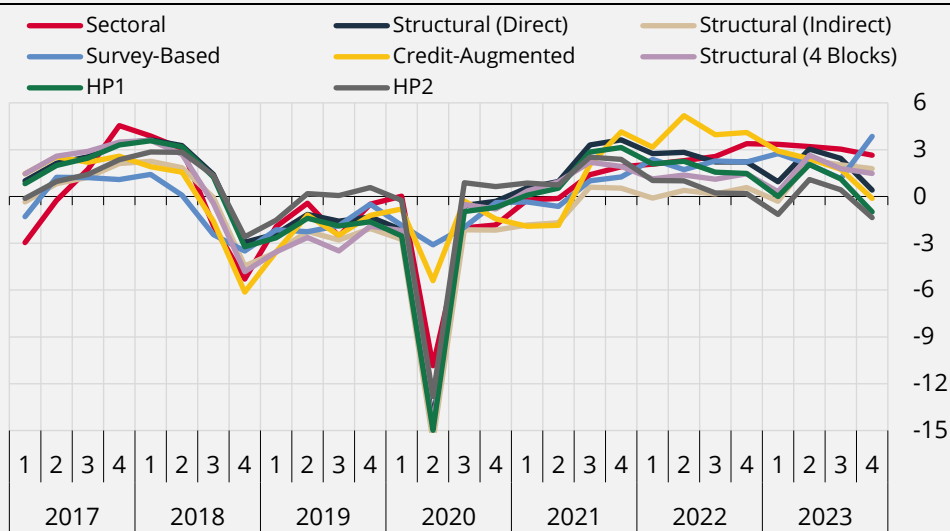
Indicators used to construct historical levels of the output gap measure are computed to include the quarter following the release of the latest GDP data, therefore nowcasts, and occasionally, the forecasts of the GDP for the next quarter are used. While the method based on surveys and leading indicators employ publicly available series, other series are created using the assumption set for short-term forecasts. Extending the output gap indicator for a period when there is no growth data plays an important role in providing up-to-date information on demand conditions as well as in constituting a starting point for medium-term forecasts. It should be emphasized that there is uncertainty over the value of the output gap, which is an unobservable variable, in the current quarter and in previous quarters.

The Role of the Output Gap in Forecasting and Policy Analysis System

In the previous section, the methods used to construct the historical values of the output gap were discussed, and it was emphasized that there is uncertainty over its historical values. This section will focus on the role of the output gap in the CBRT's medium-term forecasting and policy analysis system,

---

[2] For details, see Çelgin and Yılmaz (2019) and CBRT (2020).
[3] See Coşar Erdoğan (2018).
[4] For further details, see Gökcü (2021) and CBRT (2018).

and how it is used in practice. The CBRT constructs its medium-term forecasts using a forecasting and policy analysis system that includes semi-structural general equilibrium models. In this section, a simplified explanation of what the output gap means in terms of such models will be presented, followed by a brief discussion of the fact that the output gap, which can be explained relatively easily in the theoretical framework, is an ambiguous concept in practice.

Monetary policy is among the policies implemented to mitigate the adverse effects of business and financial cycles. When structural models are used to analyze the impact of monetary policy, many variables in the model, such as the real exchange rate and the level of output, are defined by the concept of "gap", which indicates the percentage point deviation of the level from its trend or potential, and provides more information about where the economy is in terms of business and financial cycles. In this respect, the level of output enters the model as the output gap, and the projections from the models are obtained as the output gap. In other words, the forecast result of these models is the output gap, and no direct forecast of economic growth is obtained from such models. In such structural models, the output gap indicates whether aggregate demand conditions in the economy exert pressure on inflation. In this respect, households' consumption, saving and portfolio preferences are among the determinants of aggregate demand. Other economic agents also form other components of aggregate demand according to their expectations for variables such as exchange rates, interest rates and inflation, and thus the output gap is determined by the level of aggregate demand compared to potential output. The output gap in turn affects wages, exchange rates, interest rates and inflation through the labor market, foreign trade, financial decisions and price-setting behavior.

To simplify[5] the role of the output gap in monetary transmission, we focus on how households make their consumption, saving and portfolio choices. In choosing between consumption and saving, households compare the utility they can gain by consuming now with the risk- and time-adjusted utility of the goods and services they can buy in the future by saving. Households are inclined to save more rather than consume now if the real return from saving is high enough, and the risk of waiting is low enough. In portfolio choice, economic agents will choose TL-denominated financial instruments if they believe that the risk and real return of TL-denominated instruments are more favorable than that of FX-denominated instruments. Through the transmission mechanism, monetary policy affects these two decisions by changing expectations and the returns on TL-denominated assets. Household's portfolio preferences combine with the portfolio preferences of other economic agents, including non-residents, to influence exchange rates. Exchange rates, in turn, affect economic activity and inflation through foreign trade, exchange rate pass-through and expectations.

In addition to aggregate demand, the level of potential output also determines the level of the output gap. In the case of households, savings have a significant impact on the potential output level. In simplified terms[6], savings are used to finance investment. Therefore, if savings decrease, investment will decrease, and the level of production that meets demand will not be reached. If households, who make decisions based on interest rates, exchange rates, inflation and expectations about the future course of these variables, choose (excessive) consumption, savings will decline and potential production will be hampered as investment expenditures necessary to sustain production will not be made. In this case, excessive consumption will heat up the economy, adversely affecting the trade balance and putting upward pressure on wages and inflation. This excessive level of demand implies a positive output gap and increases inflation. On the other hand, when there is direct capital investment, a decline in commodity prices, quantitative increases in factors of production or high productivity gains, the potential output level of the economy increases, albeit temporarily, thereby increasing the amount of demand that can be met without causing inflation. In that case, if the level of non-inflationary output

---

[5] In this section, the function of the output gap in structural models will be explained within the framework of the demand channel and simplified exchange rate channel, which are the main channels of the monetary transmission mechanism, based only on the basic decisions of households. The interaction between the output gap and other macroeconomic variables in structural models is much more complex than the one described here, with a multi-faceted general equilibrium concept that affects each other simultaneously. However, for pedagogical reasons, some basic channels are selected and simplified here.

[6] Simply put, in a closed economy, there is a one-to-one relationship between investment and savings. In other words, savings are the only source of investment and one of the main drivers of future growth. In an open economy, on the other hand, the difference between investment and savings can be covered by the foreign trade deficit. Therefore, household savings remain important for the sustainability of foreign trade balance and investment.

increases while the level of demand remains constant, the output gap (under the simplifying assumption that its previous value is 0) becomes negative.

Since concepts such as excess demand or the non-inflationary (potential) level of output, which are relatively easy to explain theoretically, cannot be observed in real life, uncertainties arise about both the sign and the magnitude of the output gap. Moreover, there may be discrepancies between the long-run values of the non-inflationary growth rate and its short- and medium-term values. In the long run, the potential growth rate depends on structural factors such as demographics, average productivity growth and the rate of increase in production resources, while in the short and medium term, it may depend on highly volatile cyclical productivity growth, capital flows and domestic currency denominated commodity and import prices, especially in emerging economies. In a period when capital flows are relatively high, commodity prices are moderate and productivity growth is strong, disinflation can be achieved with relatively high growth. This is because in such periods, the level of non-inflationary (potential) output may (temporarily) increase, and hence the output gap may turn negative and/or remain at negative levels. This suggests that, especially in emerging economies, the growth implied by the output gap may vary, and the inflation-growth trade-off of monetary policy may also vary over time.

Chart 3: Output Gap Estimates Uncertainty Band*
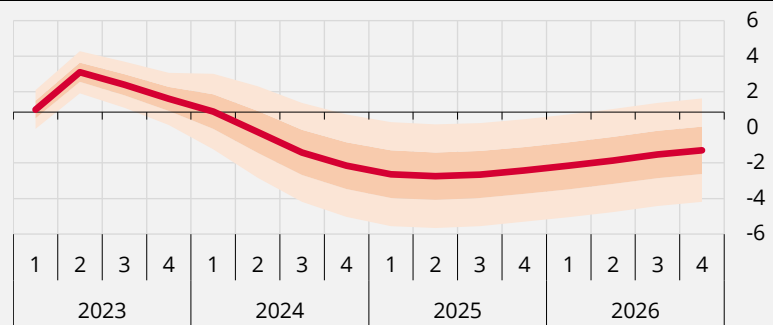
Source: CBRT, TURKSTAT.
* The probability that the output gap is within the uncertainty band is 30% for the dark shaded area and 60% for the light shaded area.

In fact, the models used by the CBRT in forecasting and policy analysis point to a wide range of uncertainty in historical data and future projections on both the non-inflationary (potential) output level and the output gap. To clarify the concepts explained in this box, Chart 3 presents an uncertainty band corresponding to the 60% significance level for output gap forecasts in the Medium-Term Projections section of the Inflation Report. When the uncertainty about the potential output level itself is added to the width of the forecast range around the output gap, the range of uncertainty about the level of growth implied by the output gap becomes so wide that its informative value decreases. Therefore, the forecasts in the Inflation Report are communicated with a baseline output gap level that symbolizes the intended/anticipated stabilizing effect of monetary policy on demand, and the high uncertainty in the output gap or the non-inflationary (potential) output level is not communicated. The output gap communication aims to express how the central bank intends to affect demand in light of monetary policy decisions and other expected economic developments. An output gap that shifts from positive to negative levels in the future should be interpreted as a sign that the central bank will stabilize demand through monetary policy, encourage households to save, and thus, achieve sustainable growth rates in the future. Central banks analyze whether the demand conditions implied by the output gap have been reached with each new data release and make monetary policy decisions in order to reach the inflation forecast path. As important as the level and change in the output gap is the evolution of private consumption and saving indicators and expectations in line with monetary policy objectives. In this respect, these indicators are closely monitored. Obviously, various unforeseen shocks that are outside the monetary policy domain may shape prices and demand unexpectedly. In that case, it is the central banks' duty to establish an accurate and effective communication and policy strategy, considering the lagged and cumulative effects of monetary policy.

Box 3.2

Monetary Transmission Mechanism and Key Indicators of Disinflation Process

The CBRT closely monitors key indicators of inflation and the underlying trend of inflation and decisively utilizes its policy toolkit in line with the fundamental objective of price stability so as to create the economic and financial conditions that will ensure a permanent fall in inflation. Within the scope of the integrated policy approach, in addition to interest rate hikes, selective credit and quantitative tightening decisions are supported by the simplification of the micro and macroprudential framework. It is assessed that the CBRT has reached a level of monetary tightness consistent with the objectives of stabilizing excesses in consumption demand, increasing the demand for TL-denominated financial assets, anchoring inflation expectations and permanently enhancing the efficiency of the monetary transmission mechanism, which will closely determine the future course of inflation, and that the (aforementioned) monetary tightness will be maintained as long as necessary.

The monetary transmission mechanism is a concept that explains the channels through which and to what extent the monetary policy affects inflation. The disinflation process can be established through the effectiveness of the policy rate and other monetary policy instruments operating through different channels on factors such as domestic demand, exchange rates, financial markets, credit and inflation expectations. Therefore, a detailed analysis of the effectiveness of transmission channels is critical in determining the monetary policy stance required for a successful disinflation process. This box focuses on the effectiveness of the transmission channels related to demand and the financial variables shown in Figure 1, which are expected to accomplish disinflation in 2024.

Figure 1: Simplified Monetary Transmission Mechanism*
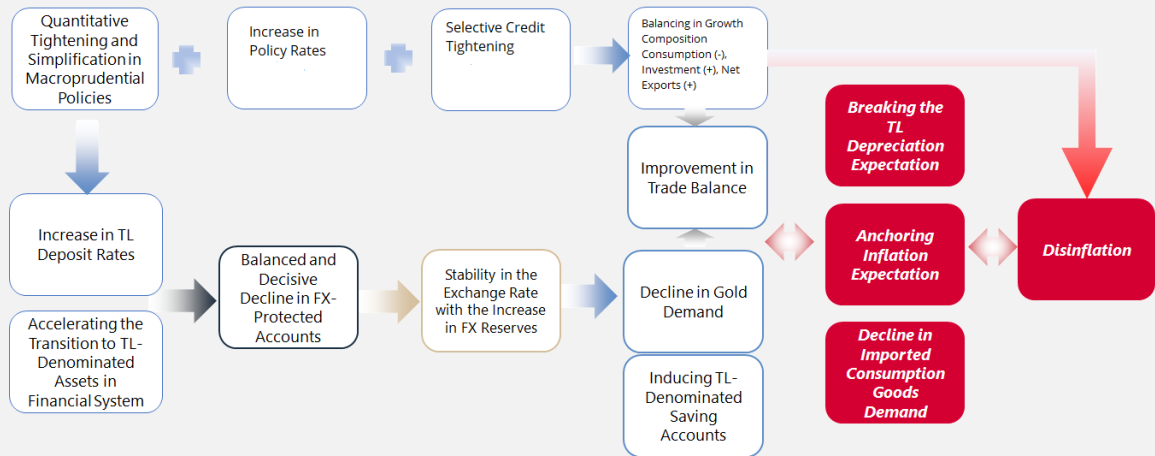
* Monetary transmission mechanism is simplified such that only transmission channels covered in this box are provided.

As monetary tightening and macroprudential policies are reflected on financial conditions, domestic demand is expected to stabilize. In addition to interest rate hikes, quantitative tightening and selective credit policies aim to shift the composition of growth from consumption to investment. The stabilized domestic demand is expected to reduce imports and lead to a growth composition in which the contribution of net exports will increase. By reducing the import demand for gold, the goal is to achieve a moderate increase in imports. Accordingly, it is possible to eliminate excessive inflation without exerting significant pressure on growth. This is expected to contribute to both improving exchange rate expectations and anchoring inflation expectations.

The tightening steps are expected to strengthen the monetary transmission mechanism by permanently increasing the demand for TL-denominated financial assets. Moreover, the current account balance and financing conditions that will improve with the decisive monetary

tightening process are expected to support the stability in the FX market and have a positive impact on exchange rate and inflation expectations. On the other hand, the demand for gold, which is considered as a store of value, is expected to decline as the demand for Turkish lira assets increases. This is expected to strengthen the improvement in the current account balance and support the rebalancing in the growth composition.

As the monetary tightening is reflected on financial conditions, the level of monetary tightness required for disinflation in 2024 is believed to have been reached. Market interest rates are in line with tight monetary policy targets, leading to an increase in Turkish lira deposits and a decline in FX-denominated and FX-protected deposits (Chart 4). Loan rates are also in line with the targeted level of financial tightness (Chart 3). Although loan growth increased in December due to the anticipated wage revisions, annual loan growth continues to normalize (Chart 5). CBRT reserves continue to increase (Chart 6).

Although recent price cuts and campaigns have curbed the fall in demand, the rebalancing in domestic demand indicators continues, as does the improvement in the gold balance that started in the third quarter of 2023 due to the impact of monetary tightening on financial conditions (Chart 2). On the other hand, wage hikes are likely to curb the fall in demand to some extent in the first quarter.

Seasonally adjusted data suggest that the underlying trend of inflation declined. However, the underlying trend of inflation posted an uptick in January, in line with the projections. The underlying trend indicator, which is calculated by taking the average of seven different indicators, decelerated significantly compared to the end of the previous quarter (Chart 1). On the back of these developments, inflation expectations continue to decline. In January, the median values of 12- and 24-month-ahead CPI inflation expectations shifted to the left compared to the previous reporting period, indicating a recovery in the distribution of expectations (Charts 7 and 8).

It is observed that the channels of the monetary transmission mechanism related to financial variables work more effectively. The demand channel of the transmission mechanism, on the other hand, is considered as a risk factor for the disinflation path. Therefore, it is critical to maintain monetary tightness as long as needed in order to ensure a permanent disinflation.

Chart 1: Average of Underlying Trend of Inflation* (Seasonally Adjusted, Three-Month Average)
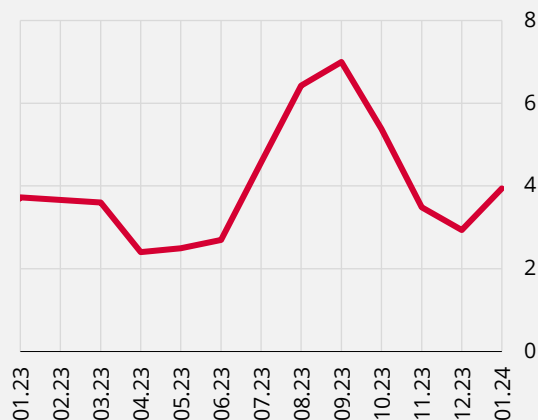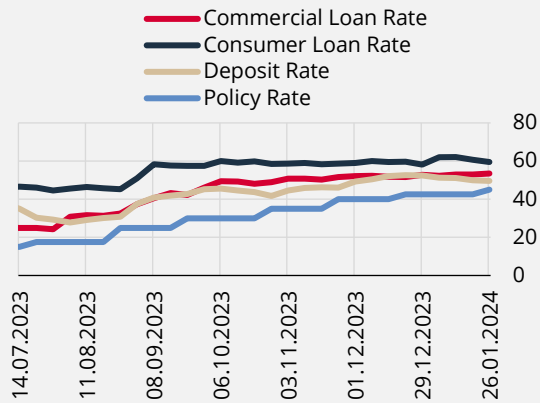

Source: CBRT.
* Average underlying trend of Inflation, calculated as the average of B and C indices, SATRIM, Median, the index excluding most volatile items, indicators produced by principal component analysis and dynamic factor models.

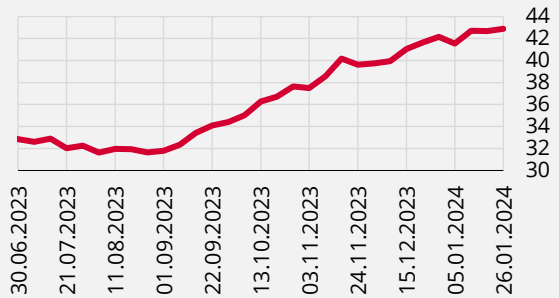**Chart 2: Gold and Consumer Goods** (Annual % Change, Three-Month Moving Average)
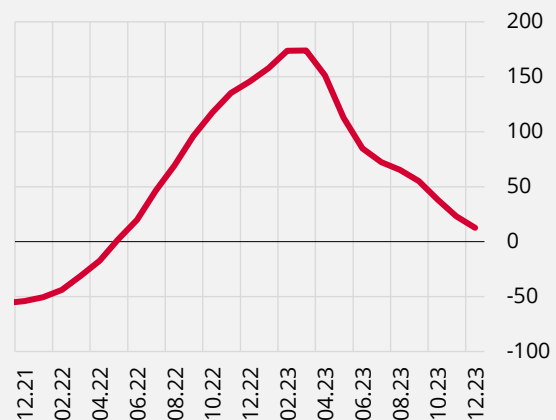
Source: CBRT, TURKSTAT.

Chart 3: Interest Rates (Annual, %)

Commercial Loan Rate
Consumer Loan Rate
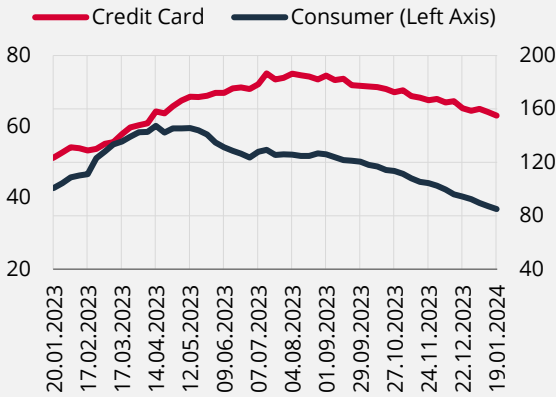Deposit Rate
Policy Rate

Source: CBRT.

## Chart 4: Share of Turkish Lira Deposits* (%)

Source: BRSA.
* Share of Turkish lira deposits calculated by dividing the sum of TL deposits, FX-protected TL deposits and participation accounts to the sum of total deposits.

Chart 5: Chart 5: Credit Cards and Consumer Loans (Annual Growth, %)
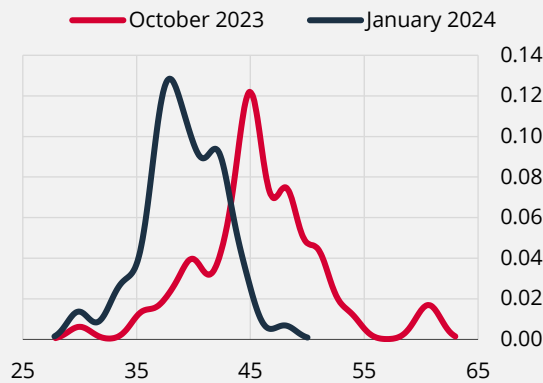
Credit Card   Consumer (Left Axis)

Source: CBRT.

Chart 6: CBRT International Reserves (Gross, USD Billion)
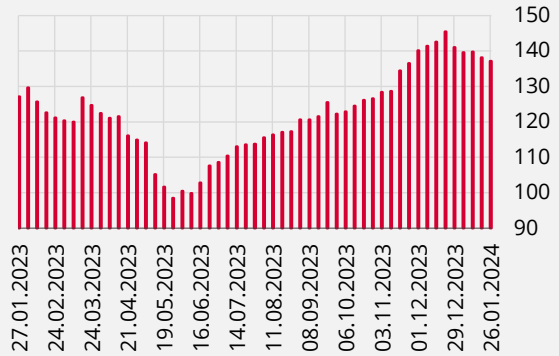
Source: CBRT.

Chart 7: 12-Month-Ahead Inflation Expectations of the Survey of Market Participants*

October 2023   January 2024

Source: CBRT.
* Kernel probability density functions are calculated using the responses to the CBRT Survey of Market Participants. The horizontal axis indicates the annual CPI inflation expectation, while the vertical axis indicates the probability density attributed to this level.

Chart 8: 24-Month-Ahead Inflation Expectations of the Survey of Market Participants*
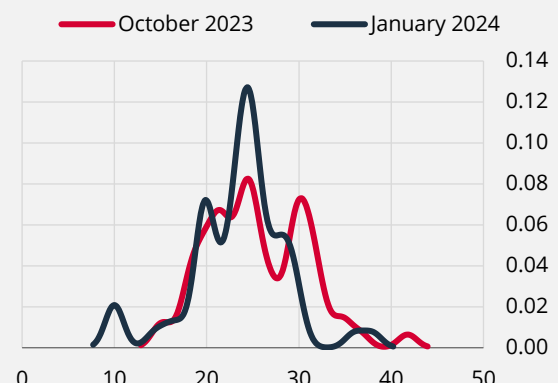
October 2023   January 2024

Source: CBRT.
* Kernel probability density functions are calculated using the responses to the CBRT Survey of Market Participants. The horizontal axis indicates the annual CPI inflation expectation, while the vertical axis indicates the probability density attributed to this level.

Box 3.3

Consumer Inflation Expectations

Inflation expectations, which reflect the forecasts of economic agents about how much prices will increase or decrease in the upcoming period, play an important role in the decision-making mechanisms of these agents. Moreover, inflation expectations are of key importance for central banks in terms of their role in the monetary transmission mechanism and in determining monetary policy decisions. Inflation expectations of economic agents can be measured by conducting surveys of market participants (professionals), firms or consumers. Consumers' inflation expectations stand out because they affect a wide range of economic choices, from consumption or saving decisions, to wage and labor force participation decisions, and from investment behavior to the currency chosen to build portfolios.

While forming inflation expectations, economic agents can often take the inflation they perceive as a reference. Perceived and expected inflation rates can be obtained from market data by applying various statistical methods, as well as by asking directly through surveys. Studies conducted using survey-based indicators show that there may be biases in both perceived inflation (De Fiore et al., 2022, ECB, 2023) and expected inflation (D'Acunto et al., 2019; Ehrmann et al., 2015). It has also been reported that, in the case of consumers, there may be wide differences between perceived and expected inflation and measured inflation (ECB, 2023). For example, while the eurozone inflation rate was 1.6% in the period between 2004 and 2018, the inflation rate perceived by consumers was 9% according to survey studies conducted by the European Commission (Arioli et al., 2017). De Fiore et al. (2022) study analyzed perceived and headline inflation data for Germany, Canada, the UK, Japan, New Zealand, South Korea and India after 2004. The points below the darker diagonal line in Chart 1, i.e. the 45-degree line, represent consumers who perceive inflation below the actual inflation, while the points above it represent those who perceive higher inflation than the actual inflation. The higher and farther away a point is from the 45-degree line, the higher is the perceived inflation compared to headline inflation. The fact that the points in the graph are mainly above the 45-degree line shows that the inflation perceived by consumers is higher than measured in the countries in question. Despite these biases, since inflation expectations have a subjective nature, survey-based measures of consumer inflation expectations provide important information on heterogeneity among consumers. In addition, recent studies show that the use of information on the heterogeneity of consumer inflation expectations and the distribution of expectations enhances the forecast performance of the New Keynesian Phillips curve (Coibion et al., 2018; Meeks and Monti, 2023).

On the other hand, when the inflation expectations of consumers and market participants (professionals) are compared, the expectations of consumers are higher than those of market participants. In Chart 2, inflation realizations are compared with the inflation expectations of professionals and consumers. Consumer expectations are more sensitive to inflation realizations and are distributed over a wider range (De Fiore et al., 2022). The academic literature ascribes this situation to the fact that there is an upward bias in inflation perceived by consumers (Chart 1), and that market participants are experts in finance and economics and have professional obligations. Therefore, market participants formulate their expectations in a more forward-looking fashion, using their expert knowledge and taking into account economic conditions and central bank actions (De Fiore et al., 2022).

Chart 1: Inflation Perceptions of Consumers in Other Countries* (%)

Perceived Inflation
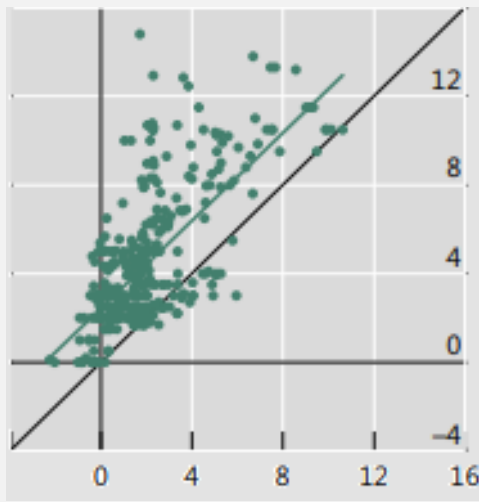
Headline Inflation

Chart 2: Comparison of Inflation Expectations of Consumers and Market Participants in Other Countries* (%)

HH slope: 0.93*** R^2=63%
PF slope 0.61*** R^2=71%

One-Year Ahead Inflation Expectations
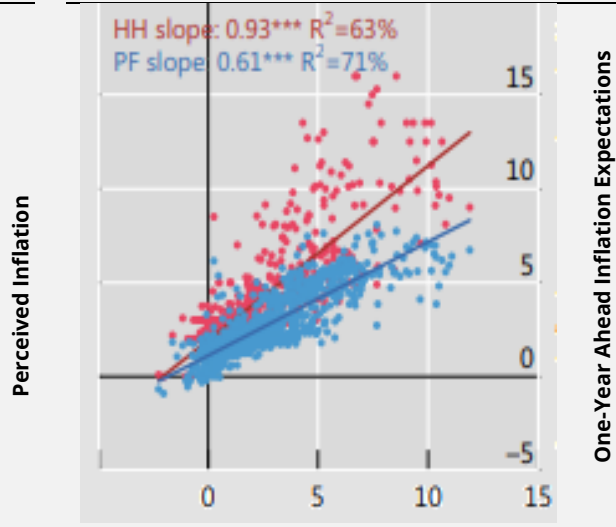
Headline Inflation

Source: De Fiore et al. (2022).
* Perceived and actual inflation data for Canada, Germany, Japan, India, New Zealand, South Korea and UK since 2004. The dark diagonal line is the 45-degree line, the points above the line indicate that the perceived inflation is higher than the measured one.

Source: De Fiore et al. (2022).
* Inflation expectations and actual inflation data since 2004 for Brazil, Canada, Germany, Japan, India, New Zealand, Philippines, South Africa, South Korea, Sweden, UK and USA. Blue dots indicate market participants (PF), red dots indicate consumers (HH).
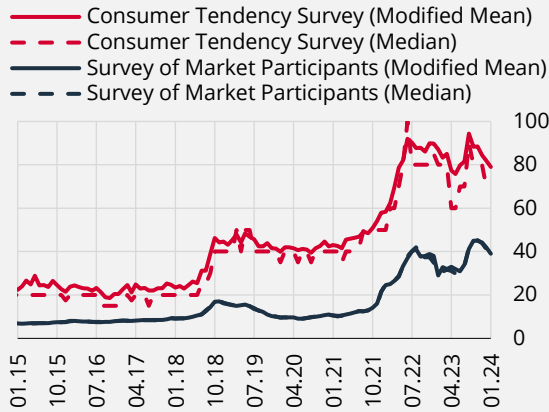
In this box, consumer inflation expectations in Türkiye are analyzed using micro data from the Consumer Tendency Survey conducted jointly by the CBRT and TURKSTAT. In this framework, firstly, aggregated data statistics such as mean and median of point estimates on the basis of participants are examined, and then the elements that may be overlooked in these aggregated statistics are shared in the light of micro data. Regarding the level of inflation expectations of consumers in the Consumer Tendency Survey, "*By how many percent do you expect consumer prices to go up/down in the next 12 months? Please give a single figure estimate*." is included. In Chart 3, the average and median values[1] of consumer inflation expectations calculated using the answers given to the question are compared with the relevant values of inflation expectations of the Survey of Market Participants. The first remarkable point is that, considering these statistics, as is also true in other countries, the average consumers' inflation expectations is systematically higher than those of market participants. The difference between the inflation expectations of market participants and consumers in Türkiye has been widening since August 2018, along with the rise in inflation.

When inflation realizations and average inflation expectations are compared, it appears that consumers always set their inflation expectations above the realization, unlike the professionals in the Survey of Market Participants (Chart 4). The course of consumer inflation expectations in the last quarters of 2018 and 2021, when inflation increased rapidly, is noteworthy. In these periods, consumers' inflation expectations increased with the rise in inflation, and expectations followed a downward course with the decrease in inflation. However, despite the recent rise in inflation, both the

---

[1] The Consumer Tendency Survey also asks the qualitative question about inflation expectations: "How do you expect consumer prices to change in the next 12 months compared to the last 12 months?". In the survey, "By what percentage do you think consumer prices increased/decreased in the last 12 months? Please give an estimated rate." question is also asked about the perceived inflation rate. The highest answer that can be given to these questions has been increased from 200 to 300 as of January 2023. In order to limit the effect of this change on trends, answers of 200 or more were accepted as 200. Micro data is analyzed by excluding inconsistent answers in the Survey. Finally, the remaining answers were trimmed from the right and left at the level of 2.5 percent.
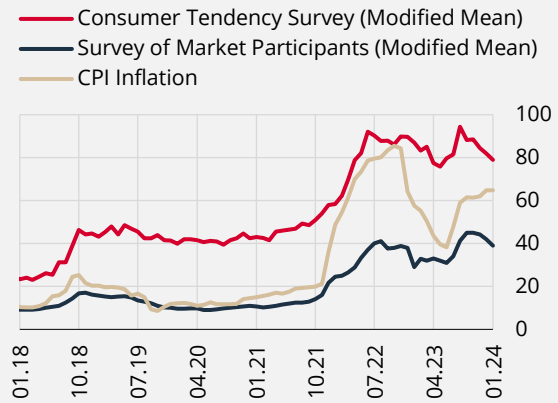
average and median values of consumer inflation expectations are declining as of September 2023. In addition, as of November, the decline in market participants' expectations began to accompany consumer expectations. Despite the favorable decline, the average and median values of consumer expectations continue to have higher values compared to market participants' expectations and Inflation Report forecasts.

Chart 3: Consumer Tendency Survey and 12-Month-Ahead Inflation Expectations of the Survey of Market Participants (%)

Consumer Tendency Survey (Modified Mean)
Consumer Tendency Survey (Median)
Survey of Market Participants (Modified Mean)
Survey of Market Participants (Median)

Source: CBRT, TURKSTAT.

Chart 4: 12-Month-Ahead Inflation Expectations and CPI Inflation (%)

Consumer Tendency Survey (Modified Mean)
Survey of Market Participants (Modified Mean)
CPI Inflation

Source: CBRT, TURKSTAT.

The mean and median values of consumer inflation expectations increase significantly in August 2018, December 2021 and July 2023, when sharp increases in inflation were recorded. In order to better understand the movements in these indicators, the change in the distribution of consumer inflation expectations is shown in Chart 5 for August 2018 and December 2021, and in Chart 6 for July 2023, using micro data. With the increase in inflation, consumers update their inflation expectations upwards and the distribution shifts to the right.

Chart 5: Differentiation in the Distribution of Consumer Tendency Survey Inflation Expectations*

Before August 2018   After August 2018

Before December 2021   After December 2021
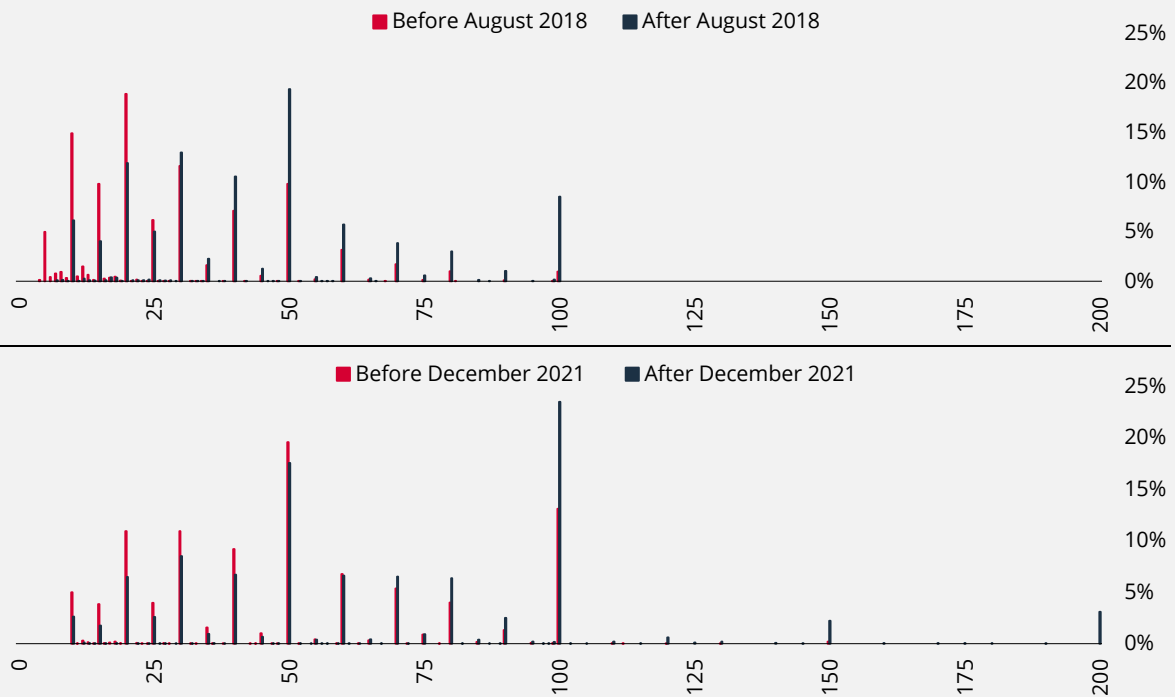
Source: CBRT, TURKSTAT.
* Distributions for the before and after periods were created using data from all months including 6 months before and after the relevant periods.

Here, it would be appropriate to place special emphasis on the July period of 2023 both because it is a more recent period and because it helps illuminate the delayed and cumulative effects of the recent tightening in monetary policy. In this regard, expectation distributions are examined in Chart 6 in three periods between July 2023 and January 2024, July-August, September-October and November-January. July 2023 was characterized by exchange rate movements, as well as minimum wage and tax hikes and administered price adjustments, which are outside the scope of monetary policy (Inflation Report 2023-III, Zoom-In 2.2). In the July-August and September-October periods, when inflation realizations also increased, a deterioration was observed in the distribution of consumer expectations, and the distribution shifted to the right, indicating higher inflation expectations. However, as the lagged and cumulative effects of the tightening in monetary policy became more evident, the distribution shifted to the left after November 2023, indicating lower inflation expectations. This is also depicted in the data aggregated in Chart 3: As of September, a decrease was observed in the mean and median values of consumer expectations.

Graph 6: Differentiation in the Distribution of Consumer Tendency Survey Inflation Expectations in the Second Half of 2023 (%)
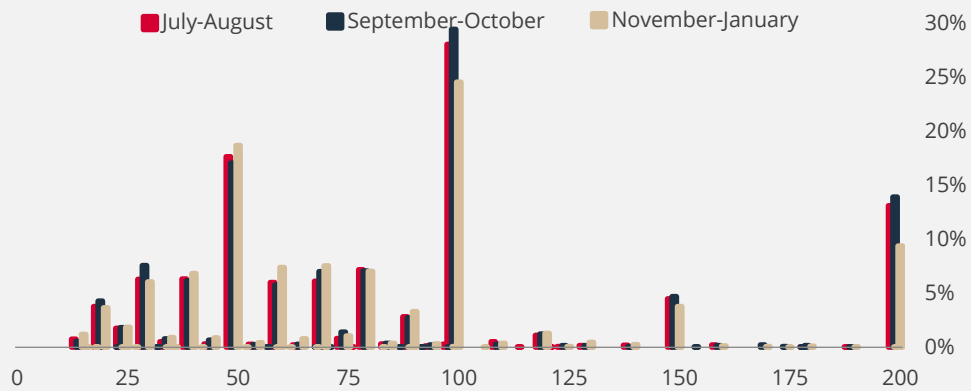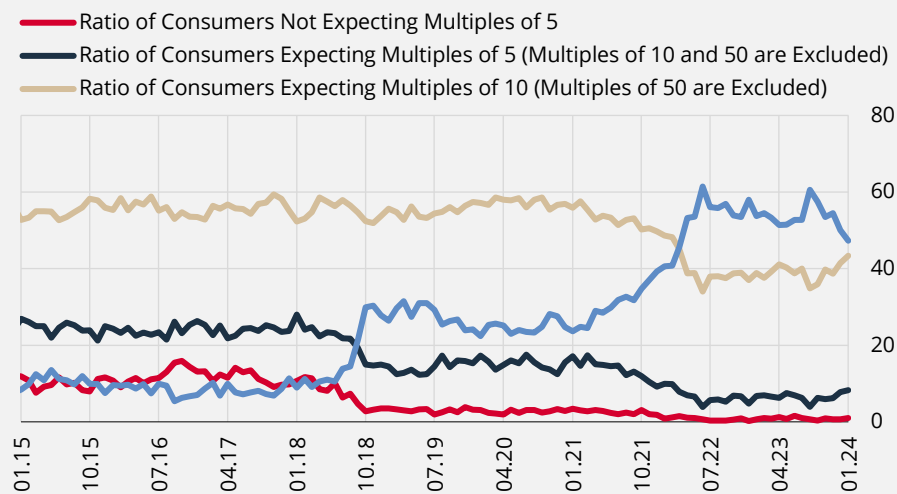

Source: CBRT, TURKSTAT.

A detailed examination of the numbers used by consumers to express their inflation expectations provides important results regarding the reliability of aggregated statistics and the perception of inflation uncertainty. The responses of the Consumer Tendency Survey participants are concentrated around certain numbers. For example, at the beginning of 2021, 25% of the participants estimated 50% and multiples for inflation expectations, while this rate increased to 60% in 2022. When determining inflation expectations, consumers use rounded values expressed as 5, 10, 50 and multiples more often than other numbers. To express predictions that they are not sure about, respondents tend to give an approximate number that is imprecise and may include other nearby numbers. This behavior is referred as the "rounding effect" in the context of uncertainty in the semantic literature, and Krifka (2002) described this behavior as round numbers imply rounded estimates. Additionally, Binder (2017) constructed an expectation uncertainty index using the proportion of consumers who rounded their survey responses and revealed that this index moves in tandem with other macroeconomic uncertainty indices.

The proportion of respondents who answered 5, 10, 50 and multiples in the Consumer Tendency Survey indicated in Chart 7 shows that the increase in inflation in Türkiye as of 2018 also increased uncertainty by affecting expectations. In addition to uncertainty, the fact that participants set their estimates in multiples of large values reduces the information value of the average and median values of inflation expectations. Expectations, which were initially stated in multiples of 5, began to be stated more frequently as multiples of 10 and above by 2018, and they began to be stated more often as multiples of 50 by the end of 2021. This trend, similar to Binder (2017), shows that the tendency to respond with multiples of large values increases in parallel with the increase in the inflation level and the increase in uncertainties. In addition, when looking at the period after July 2023, inflation

expectations started to be given in multiples of lower values again as of September 2023, in parallel with the recent improvement in expectations shown in Charts 3 and 6.

Chart 7: Ratio of Consumers Expecting Inflation in Multiples of 5, 10 and 50 (%)

Source: CBRT, TURKSTAT.

In spite of the recent rise in consumer inflation, due to the monetary tightening implemented since June 2023, both the level of inflation expectations and the tendency of respondents to respond in multiples of large values have started to decline, which became more evident as of September. Despite this favorable development, the level of consumer expectations and uncertainty indicators have not yet reached the desired levels. The CBRT will continue to closely monitor the inflation expectations of economic agents through micro data.

References

Arioli, R., Bates C., Dieden C. H., Duca I., Friz R., Gayer C., Kenny G., Meyler A., and Pavlova I. (2017). EU Consumers' Quantitative Inflation Perceptions and Expectations: An Evaluation. ECB Occasional Paper No. 186.

Binder, C. C. (2017). Measuring Uncertainty Based on Rounding: New Method and Application to Inflation Expectations. Journal of Monetary Economics, 90, 1-12.

CBRT (2023). Impact of Tax and Administered Price Adjustments on Inflation. Inflation Report 2023-III, Zoom-In 2.2.

Coibion, O., Gorodnichenko, Y., and Kamdar, R. (2018). The Formation of Expectations, Inflation, and the Phillips Curve. Journal of Economic Literature, 56: 1447-91.

De Fiore, F., Goel T., Igan D., and Moessner, R. (2022). Rising Household Inflation Expectations: What are the Communication Challenges for Central Banks? BIS Bulletin No. 55.

D'Acunto, F., Malmendier, U., Ospina, J., and Weber, M. (2019). Salient Price Changes, Inflation Expectations, and Household Behavior. SSRN Electronic Journal.

ECB (2023). Consumer Expectations Survey, available at https://www.ecb.europa.eu/stats/ecb_surveys/consumer_exp_survey/html/index.en.

Ehrmann, M., Pfajfar, D., Santoro E. (2015). Consumers' Attitudes and their Inflation Expectations. FEDS Working Paper No. 2015-015.

Krifka, M. (2002). Be Brief and Be Vague! And How Bidirectional Optimality Theory Allows for Verbosity and Precision. In Restle, D & Zaefferer, D. (eds.) Sounds and Systems: Studies in Structure and Change: A Festschrift for Theo Vennemann. Berlin/New York: Mouton de Gruyter, 439–458.

Meeks, R., Monti, F., (2023). Heterogeneous Beliefs and the Phillips Curve. Journal of Monetary Economics, 139, 41-54.