3. Medium-Term Projections

3.1 Current State, Short-Term Outlook and Assumptions

Changes in Key Forecast Variables

In the second quarter, economic activity lost some momentum due to the pandemic restrictions and tightening in financial conditions. Aggregate demand conditions are considered to have remained above their trends. Leading indicators indicate economic activity remained strong in the third quarter of the year. In this quarter, the widespread vaccination rollout helped reduce the imbalance between services and manufacturing to the disadvantage of the services sector and establish a more balanced growth composition. Moreover, external demand conditions, which remained strong, continued to underpin export demand. In this context, the output gap forecast was revised upwards for the second and third quarters of the year (Table 3.1.1). Meanwhile, ongoing domestic and global supply constraints have been limiting economic activity.

In the third quarter of 2021, consumer inflation stood at 19.58%, which is above the forecast range of the July Inflation Report. The annual inflation of the B index, one of the core indicators, which stood at 18.63%, is in line with the July Inflation Report forecasts. The rise in consumer inflation was driven by aggregate demand conditions as well as supply-side factors such as import prices, transportation costs, agricultural drought, and delivery problems. The divergence between forecasts and realizations of consumer and core inflation was driven by the higher-than-expected increase in unprocessed food prices stemming from the rise in international agricultural commodity prices, cumulative exchange rate effects and the agricultural drought.

Table 3.1.1: Development of Main Forecast Variables*

	2021-II	2021-III
Output Gap (%)	1.8 (0.8)	2.5 (-0.1)
Consumer Inflaiton (Quarter-End, Annual % Change)	17.5 (17.5)	19.6 (17.7)
B** Index Inflation (Quarter-End, Annual % Change)	18.2 (18.2)	18.6 (18.3)

* Numbers in parentheses denote the values from the July Inflation Report.

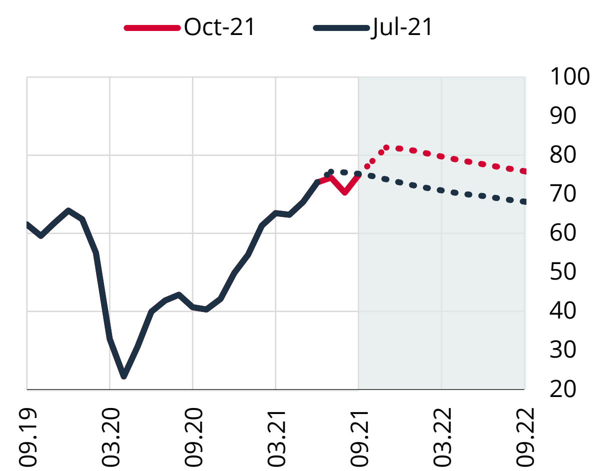
** B index is the CPI excluding unprocessed food, alcohol, tobacco, energy and gold.

Assumptions for Exogenous Variables

Although there has been a rise in uncertainties stemming from the impact of the delta variant of the Coronavirus on global economic activity, the external demand outlook has not changed compared to the previous reporting period. Even if the rising number of cases in many countries due to the delta variant has not yet necessitated reimposition of pandemic restrictions, it has increased uncertainty over the economic activity and caused an interruption in the recovery in the labor market. During the pandemic, the impact of new variants on growth expectations has varied across countries, and growth expectations have been revised upwards in those countries whose economic activity indicators were more positive than forecasts. The negative impact on the external demand outlook of countries whose growth expectations were revised downwards was compensated for by the positive contribution of countries whose growth expectations were revised upwards. Accordingly, there has been no update in the Export-Weighted Global Growth Index reflecting Turkey's external demand outlook. Meanwhile, global inflation increased due to the rise in international commodity prices and supply constraints.

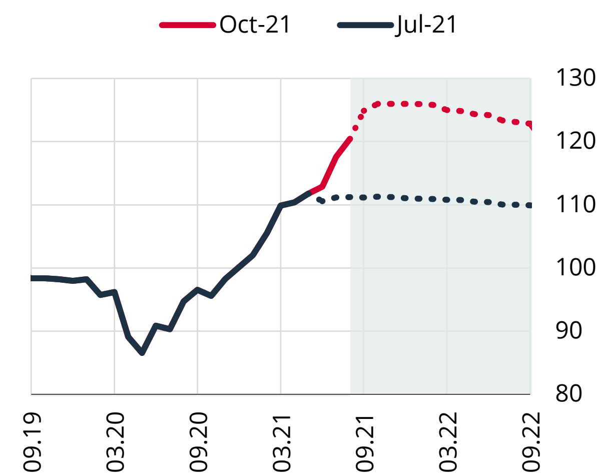
Assumptions regarding international crude oil prices and USD-denominated import prices have been revised upwards. Crude oil prices have largely been in line with the July Inflation Report forecasts. Nevertheless, the rise in crude oil prices, which started in September and continued in October due to the supply-demand mismatch, indicates that crude oil prices will remain above the July forecasts in the upcoming period (Chart 3.1.1). As a matter of fact, the futures price curve implies that oil prices will continue to increase for a while before taking a downtrend and stabilize at around USD 70.8 in 2021-average and USD 77.5 in 2022-average (Table 3.1.2). Due to the rapid rise in crude oil and natural gas prices, international commodity prices increased and remained above the assumptions stated in the July Inflation Report. Similarly, assumptions regarding the general level of import prices also increased compared to the July Inflation Report assumptions because of energy prices (Chart 3.1.2). The futures price curve on international markets indicates that import prices will continue to increase for a while before assuming a downtrend.

Chart 3.1.1: Revisions to Oil Price Assumptions* (USD/Bbl.)



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

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



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

The food inflation assumptions for 2021 and 2022 have been revised upwards taking into account the rise in international prices and developments regarding agricultural drought. Annual inflation in the food and non-alcoholic beverages group increased from 20% to 28.8% in the third quarter. The increase in food inflation was driven by the cumulative effect of exchange rates, as well as the increase in international agricultural commodity prices due to drought as well as other supply constraints. Therefore, compared to the July Inflation Report, food inflation assumptions for 2021 and 2022 have been revised upwards to 23.4% and 13.9%, respectively (Table 3.1.2).

Table 3.1.2: Revisions to Assumptions*

	2021	2022
Export-Weighted Global Production Index (Annual Average (Annual Average % Change)	4.8 (4.8)	4.5 (4.5)
Oil Prices (Average, USD)	70.8 (69.6)	77.5 (69.4)
Import Prices (USD, Annual Average % Change)	23.1 (16.3)	6.0 (0.2)
Food Price Inflation (Year-End % Change)	23.4 (15.0)	13.9 (10.1)

* Numbers in parentheses denote the values from the July Inflation Report.

Projections are based on a medium-term outlook in which fiscal and financial policies will be determined in tandem with the monetary policy, and within a macro framework that is in line with the projected disinflation path. In this period, the impact of fiscal policy on inflation has been limited. In October, the SCT amount in all fuel prices was reduced to zero. The sliding scale system, which was intended to limit the impacts of movements arising from international oil prices and exchange rates by changing taxes on fuel prices to keep the final consumer price constant, has been able to alleviate a significant inflation pressure so far, taking into account indirect effects of fuel prices.

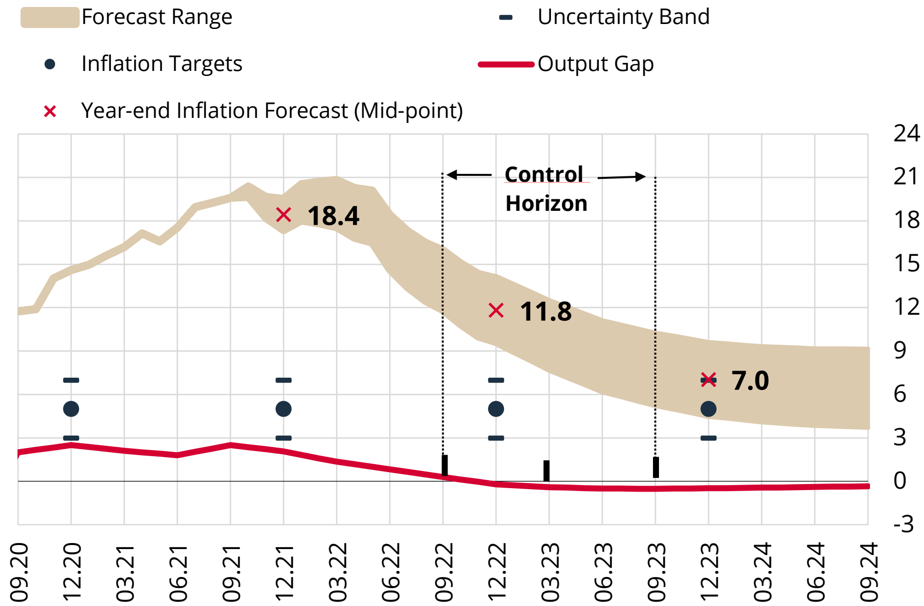
Medium-term projections are based on an outlook in which macroeconomic policies are determined with a medium-term perspective and in a coordinated manner with a focus on bringing inflation down. In this context, it is assumed that adjustments in administered prices will be determined largely to support the disinflation process. A strong policy coordination prioritizing a sustained decline in inflation is critical to maintaining improvements in the risk premium and perceptions of uncertainty.

3.2 Medium-term Projections

The CBRT formulates monetary policy decisions with a medium-term perspective based on all factors affecting inflation and their interaction, focusing on the alignment of future inflation with the target.

Within the framework of basic assumptions and short-term projections, inflation is expected to gradually converge to the target under an outlook where the monetary policy stance will continue to be formed tight enough to ensure that inflation returns to a downward trend gradually once the temporary effects disappear. Accordingly, inflation is projected to be 18.4% at the end of 2021, fall to 11.8% at the end of 2022, and 7.0% at the end of 2023 before stabilizing around 5% in the medium term. With a 70% probability, inflation is expected to be between 17.3% and 19.5% (with a mid-point of 18.4%) at the end-2021; between 9.6% and 14.0% (with a mid-point of 11.8%) at the end of 2022, and between 4.6% and 9.4% (with a mid-point of 7.0%) at the end of 2023 (Chart 3.2.1).

Chart 3.2.1: Inflation and Output Gap Forecasts* (%)



Sources: CBRT, TURKSTAT.
* Shaded area denotes the 70% confidence interval for the forecast.

Given the recent inflation realizations and all the factors affecting inflation, year-end forecasts for 2021 and 2022 have been revised upwards compared to the previous report period (Chart 3.2.2). Although economic activity lost some momentum in the second quarter of 2021 due to the restrictive effects of the pandemic and the tightening in financial conditions, it remained strong. In the second quarter, both domestic and foreign demand contributed to annual growth. In the third quarter of the year, economic activity continued to be strong with the positive effects of the re-opening and foreign demand. In addition, the widespread vaccination rollout helps services, tourism, and related sectors, which were adversely affected by the pandemic, recover and economic activity to have a more balanced composition. The slowing effects of the monetary stance on loans and domestic demand have started to be observed, but aggregate demand conditions followed a stronger course than the projections in the July Inflation Report period, mainly due to the adjustment caused by the re-opening. Accordingly, output gap forecasts have been revised upwards for the second and third quarters of the year. On the other hand, supply-side factors such as recent increases in food and energy import prices, disruptions in supply processes, increases in administered/directed prices, and demand developments due to the re-opening have adversely affected the inflation outlook. Moreover, in the third quarter of the year, the inflation trend followed a fluctuating course due to shutdowns and re-opening periods. Inflation forecasts were revised upwards due to these developments.

The monetary policy stance has been revised on the back of evaluations of analyses decomposing the impact of demand factors that monetary policy can influence, core inflation developments, and supply shocks, and it was decided to reduce the policy rate by a total of 300 basis points in September and October. Nevertheless, the Committee assessed that, transitory supply-side factors left little room for a downward adjustment to the policy rate until the end of the year. In the upcoming period, the monetary policy stance will be set by taking into account the evaluations on the source and permanence of risks, along with the extent to which they can be contained by monetary policy, and with a focus on bringing inflation down permanently in a cautious manner and achieving the price stability target.

Table 3.2.1: Revisions to Year-End Inflation Forecasts for 2021 and 2022 and Sources of Revisions

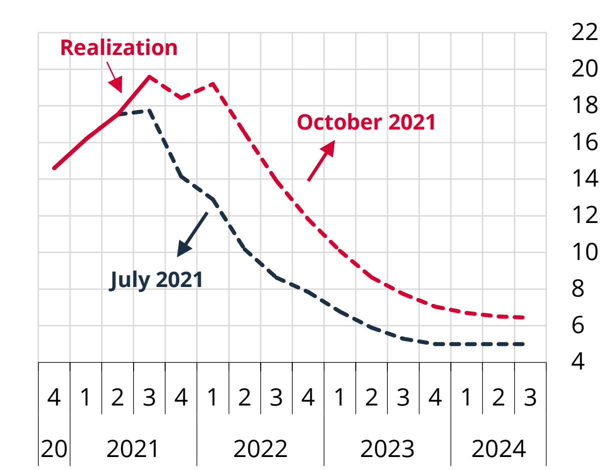
	2021	2022
2021-III (July 2021) Forecast (%)	14,1	7,8
2021-IV (October 2021) Forecast (%)	18,4	11,8
Forecast Revision as Compared to the 2021-III Period	+4,3	+4,0
Sources of Forecast Revisions (% Points)		
Turkish Lira-Denominated Import Prices (Including the Exchange Rate, Oil and Import Prices)	+1,5	-
Food	+2,1	+1,0
Administered Prices	+0,3	
Output Gap	+0,4	+0,8
Deviation from the Inflation Forecast / the Underlying Trend of Inflation	-	+2,2

Source: CBRT.

The year-end forecast for 2021 has been revised upwards by 4.3 points from 14.1% to 18.4%. Compared to the previous report period, the inflation forecast was increased by 1.5 points due to the revision in the Turkish lira-denominated import prices and by 2.1 points because of the expected high course of food prices. On the other hand, administered prices pushed the end-year inflation forecast up by 0.3 points primarily due to alcohol-tobacco prices. The revision in the output gap added 0.4 points to the inflation forecast. (Table 3.2.1).

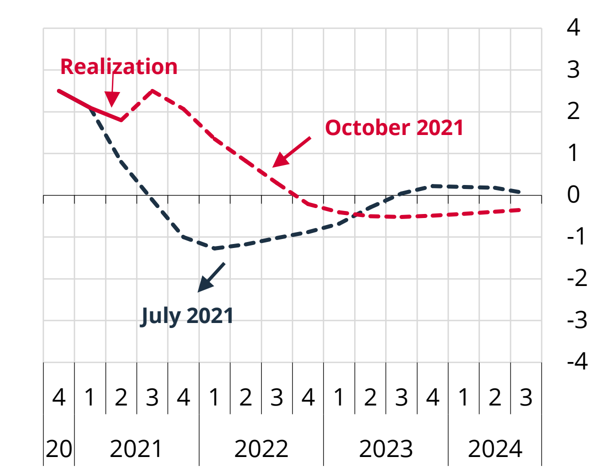
The inflation forecast for end-2022 has been revised upwards from 7.8% to 11.8%. Effects of the revision in initial conditions on the underlying inflation trend pushed the year-end inflation forecast for 2022 up by 2.2 points. Meanwhile, the revision in the food inflation assumption drove the forecast up by 1.0 points. Moreover, the revision in the output gap added another 0.8 points to the forecast (Chart 3.2.3).

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



Sources: CBRT, TURKSTAT.

Chart 3.2.3: Output Gap Forecast (%)



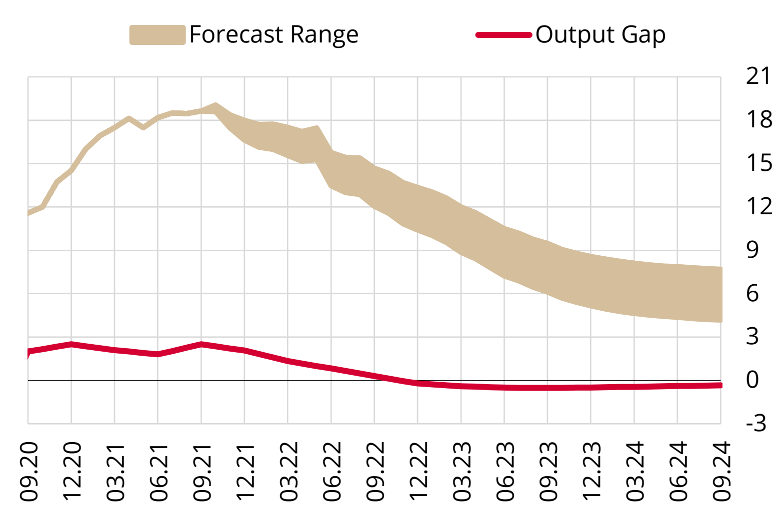
Source: CBRT.

Despite the recovery in global economic activity in the first half of the year, recently published confidence indices have started to decline due to the effect of the pandemic. Despite the increase in the vaccination rate, new variants keep the downside risks to global economic activity alive. Recovery in global demand, the high course of commodity prices, supply constraints in some sectors, and the rise in transportation costs have led to a rise in producer and consumer prices internationally. Unfavorable effects of weather conditions in major agricultural commodity-exporting countries are observed on global food prices. The effects of high global inflation on inflation expectations and international financial markets are closely monitored. Central banks of advanced economies assess that the rise in inflation will be primarily temporary with the normalization in demand composition, easing of supply constraints, and waning base effects. Accordingly, central banks of advanced economies continue their supportive monetary stances and asset purchase programs. Meanwhile, in many emerging economies, both current inflation and year-end inflation expectations have been hovering above their targets. However, it is expected that inflation will return to the tolerance range by the end of 2022.

Following the recovery in the third quarter with the impact of the re-opening, demand conditions are expected to follow a more moderate course as of the last quarter of 2021. Leading indicators show that domestic economic activity remains strong with the help of robust external demand. Following the normalization steps, total demand grew stronger in the third quarter, underpinned by domestic and external demand. Meanwhile, the recovery in pandemic-hit tourism and related sectors allowed a more balanced composition in economic activity. In this framework, as of the final quarter, the impact of post-pandemic normalization measures on total demand is expected to decrease. Moreover, economic activity is expected to display a more balanced composition. In line with these developments, the impact of total demand conditions on inflation is projected to decrease. As for inflation developments, commodity prices, supply chain problems, and demand conditions continue to push producer inflation up. Therefore, cost pressures on consumer prices are still in place. Inflation is expected to assume a downtrend once these effects stemming from transitory factors wane.

The unpredictable volatility in items such as unprocessed food and energy, which are beyond the control of the monetary policy, have been the primary factors that caused a deviation in inflation forecasts. Core inflation indicators, which are obtained by excluding these items, contain more information about the underlying trend of inflation. For this reason, inflation forecasts excluding unprocessed food products, energy, alcoholic beverages, tobacco, and gold items (B index) are also shared with the public. Accordingly, the annual inflation of the B index is expected to take up a downtrend as of the last quarter of 2021 (Chart 3.2.4).

Chart 3.2.4: Annual Inflation Forecast for the B index* (%)



Sources: CBRT, TURKSTAT.

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

3.3. Key Risks to Inflation Forecasts and Possible Impact Channels

Macroeconomic risks that may change the outlook, on which the inflation forecasts are based, as well as the monetary stance are shared in detail in Section 1.3. Evaluations of the channels through which these risks may influence inflation forecasts presented in Section 3.2 and the direction in which they may change the forecasts are summarized in Table 3.3.1.

Table 3.3.1: Key Risks to Inflation Forecasts*

Key Risks	Indicators Monitored
Cost Pressures ▪ High international commodity prices continue to pose an upside risk to the inflation outlook. ▪ Producer prices-driven risks have become more evident due to recent increases in coal and natural gas prices in the international energy markets. ▪ The ongoing disruptions in supply chains keep supply-side risks to inflation alive. ▪ Despite a limited improvement in October, freight costs and suppliers' delivery times continue to display an unfavorable outlook. ▪ The pass-through from producer prices to consumer prices as well as their causes are monitored closely. ▪ Food price developments continue to pose an upside risk to the inflation outlook.	▪ Crude oil prices and supply-demand balance ▪ OPEC+ decisions ▪ Industrial metal prices ▪ Agricultural commodity prices ▪ Supply-demand balance in agricultural products ▪ Indicators pertaining to the divergence between producer and consumer prices ▪ Global supply indicators, transport and freight costs ▪ Climate change, drought indicators ▪ International food price indicators
Uncertainties Regarding Domestic and External Financial Markets ▪ The tightness in the monetary stance has started to have a higher than envisaged contractionary effect on commercial loans. The strengthened macroprudential policy framework has started to curb personal loan growth. In addition to macroprudential measures, the effects of the adjustment in monetary policy on loan growth and composition will also be monitored. ▪ While factors such as the rise in commodity prices and supply constraints are still deemed to be temporary, some countries signal a tightening in monetary policy. ▪ This outlook may affect financial markets through capital flows and global risk appetite.	▪ Course of demand and growth components ▪ Developments in loan and deposit rates ▪ Credit conditions (Bank Loans Tendency Surveys) ▪ Financing of balance of payments ▪ Portfolio flows to equity and bond markets ▪ Bond yields and monetary policy stances of advanced economies ▪ Risk premium indicators ▪ Dollarization indicators ▪ Global inflation indicators

Table 3.3.1: Key Risks to Inflation Forecasts*

Pandemic and Economic Activity ▪ The recovery in the global economy continues, albeit at a somewhat decelerated pace. Nonetheless, despite the increase in the vaccination rate, new variants keep the downside risks to global economic activity alive. ▪ Aggregate demand conditions remain strong on the back of both domestic and external demand. ▪ The accelerated vaccine rollout and the normalization steps have triggered upside risks to economic activity. ▪ The improvement in the current account balance is expected to continue until the end of the year due to the strong course of exports and the recovery in tourism. ▪ Changes in the number of coronavirus cases and deaths as well as the developments regarding new variants and new waves of pandemic and the effects of these developments on demand conditions are closely monitored.	▪ The course of the pandemic and vaccination in Turkey and abroad ▪ Developments in exports, the current account balance, tourism and transport ▪ Demand and inflation indicators by sectors and subsectors ▪ Wage and labor cost indices
Higher Inflation Expectations ▪ The short-term trend of inflation affects medium-term inflation expectations and poses a risk of slowdown in the speed at which expectations converge to forecast targets. ▪ Pricing behavior developments are monitored for the inflation outlook.	▪ Survey and market-based expectations of inflation and exchange rates ▪ Indicators for backward indexation ▪ Indicators for inflation uncertainty ▪ Financial volatility indicators
Monetary, Fiscal and Financial Policy Coordination ▪ The disinflation process may be delayed, should the path of administered price and tax adjustments exceed the path envisaged in this Report.	▪ Adjustments to administered prices and taxes ▪ Developments in tax revenues and public spending ▪ Government wage policies ▪ Indicators for government budget and public debt stock ▪ Fiscal stance (structural budget balance)

* Each risk row on the table presents evaluations on the channel through which inflation forecasts may change. Indicators used in monitoring the risks are listed in the right column.