7. Medium-Term Projections

This chapter summarizes the underlying forecast assumptions and presents the medium-term inflation and output gap forecasts as well as the monetary policy outlook over the coming three years.

7.1 Current State, Short-Term Outlook and Assumptions

Changes in Key Forecast Variables

Inflation: Although consumer inflation increased to 11.8% due largely to base effects in the last quarter of 2019, it remained slightly below the October Inflation Report forecast[1] (Table 7.1.1). The increase in annual inflation of the core indicator B was also slightly lower than projected. Owing to the continued improvement in inflation expectations, along with the ongoing downward contribution of exchange rate and domestic demand conditions to inflation, the trend of core inflation indicators remained moderate. With tax cuts in certain products (furniture etc.) and lump-sum taxes on alcohol-tobacco products, being kept constant for the first six months will affect the near-term inflation outlook positively. The increased credibility of forecasts and increased predictability of monetary policy have been influential in the improvement of inflation expectations and the gradual convergence of expectations to the CBRT's forecasts. While the volatility in oil prices driven by recent geopolitical developments, and cost factors have posed an upside risk to inflation, the improvement in expectations partly offsets such risks.

Economic Activity: Economic activity increased in line with the October Inflation Report forecasts in the third quarter of 2019 and the annual economic growth turned positive. In the last quarter of 2019, the economic recovery gained strength on the back of domestic demand and economic activity continued to improve across sectors. The decline in exchange rate volatility and the risk premium along with the improvement in financial conditions had a relatively more noticeable effect on the recovery of domestic demand in this period. Accordingly, in line with the data flow since the previous reporting period, the output gap forecasts were revised slightly upwards (Table 7.1.1). Output gap forecasts for the upcoming period are based on the assumption that domestic demand will continue to recover on the back of improving financial conditions, that fiscal policy will be formulated in line with the economic rebalancing process, and that exports will continue to support growth thanks to improved competitiveness and flexibility in market diversification despite the weakening in global growth.

Table 7.1.1: Changes in Key Forecast Variables*

	2019-III	2019- IV
Output Gap (%)	-3.7 (-3.6)	-2.8 (-3.2)
Consumer Inflation (Quarter-end, Annual % Change)	9.3 (9.3)	11.8 (12.0)
B** Index Inflation (Quarter-end, Annual % Change)	8.9 (8.9)	10.8 (11.3)

* Numbers in parentheses denote the values from the October Inflation Report.
** B index is the CPI excluding unprocessed food, alcohol, tobacco, energy and gold.

Monetary Policy: In the second half of 2019, the CBRT cut rates by a total of 12 points considering the improving inflation outlook and set the policy rate at 12% in December. In January, the Bank emphasized the mild trend in core inflation indicators, and considering that the course of inflation was broadly in line with the year-end inflation projection, delivered a measured rate cut, setting the policy rate at 11.25%. In

[1] Reasons for revisions made to end-2019 inflation forecasts throughout the year and for the deviation from the year-end forecasts of the October Inflation Report are elaborated on in Box 7.1.

the current reporting period, medium and long-term bond rates continued to fall due to the improvement in inflation expectations and the decline in the country risk premium. Additionally, the CBRT continued to employ reserve requirements to support financial stability.

Financial Conditions: In the last quarter of 2019, subdued uncertainties over international trade and major central banks' signals indicating a caution on the path towards monetary policy normalization affected the risk appetite positively. In this period, due also to the contribution of improved macroeconomic indicators, Turkey diverged positively from other emerging markets in terms of the decline in its risk premium. However, Turkey's risk premium is still high compared to that of its peers.

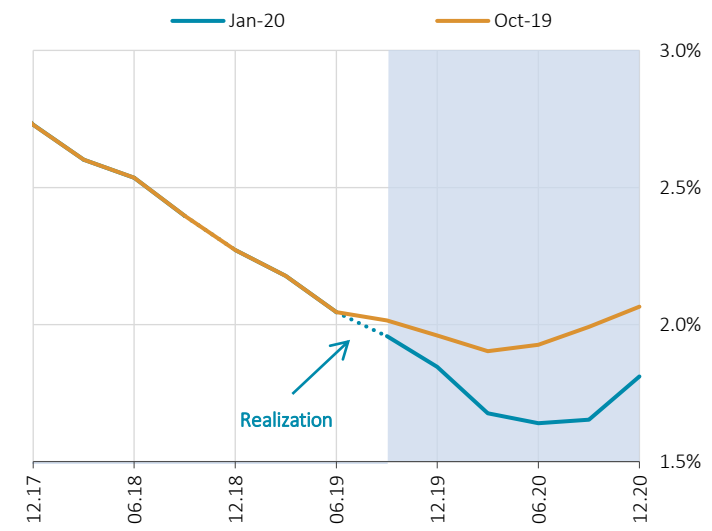
While interest rates on TL commercial loans and consumer loans decreased significantly on the back of the monetary policy actions taken and the decline in inflation expectations, the spread between TL commercial loan and deposit rates increased slightly (Chart 5.2.3). According to the Bank Loans Tendency Survey (BLTS) data, credit standards eased and credit demand increased in the last quarter of 2019. Thus, due to falling loan rates, easing standards and improving domestic demand, the credit demand accelerated led by consumer loans in the last quarter. Banks expect that credit standards will continue to ease at a slower pace, the demand for commercial loans will increase and the demand for consumer loans will decelerate slightly.

Assumptions for External Variables

Global Growth

Figures for the third quarter of 2019 suggest that the growth rates in both advanced and emerging economies flattened compared to the preceding quarter, sustaining the ongoing weakening in global economic activity. Leading indicators for the fourth quarter of 2019 did not signal a major change in this outlook. The first phase trade deal between the US and China, as well as Brexit-related developments reduced uncertainties regarding emerging markets slightly, whereas country-specific fragilities in EMEs and geopolitical tensions pose downside risks to growth in EMEs. Accordingly, medium-term forecasts have been built on a downward revision from the October Inflation Report projections for the growth path implied by the export-weighted global production index, which is used as a measure for external demand (Chart 7.1.1).

Chart 7.1.1: Export-Weighted Global Production Index* (YoY % Change)



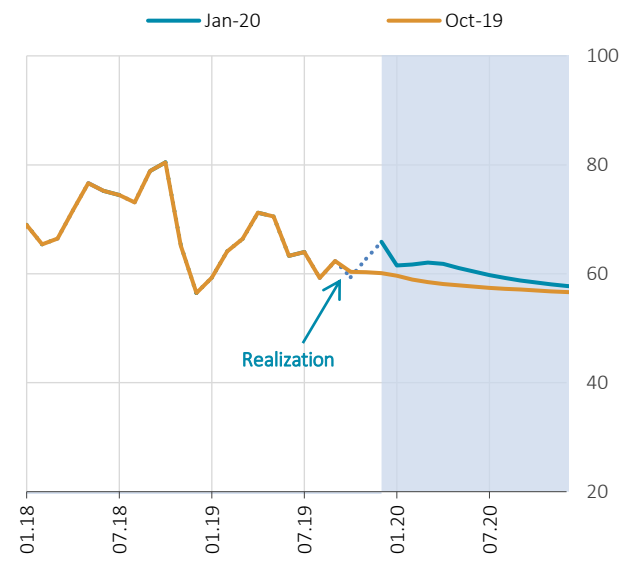
Sources: Bloomberg, Consensus Forecasts, CBRT.

* Shaded area denotes the forecast period.

Import prices

While the international crude oil prices remained above the assumptions of the October Inflation Report, the USD-denominated import prices were consistent with projections. Although the weak course of global growth and strong projections regarding oil production have driven oil prices down, geopolitical developments increase volatility in prices and keep the upside risks alive. Accordingly, the average crude oil price assumption has been raised to 60 USD/bbl for 2020 from the October Inflation Report assumption of 57.7 USD/bbl (Table 7.1.2, Chart 7.1.2). The assumption for the average annual increase in USD-denominated import prices for 2020 has been revised upwards by a limited margin (Table 7.1.2, Chart 7.1.3).

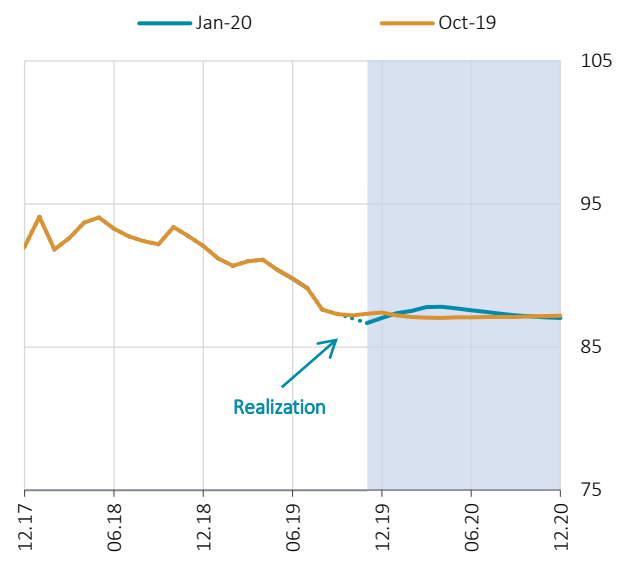
Chart 7.1.2: Revisions to Oil Price Assumptions* (USD/bbl)



Sources: Bloomberg, CBRT.

* Shaded area denotes the forecast period.

Chart 7.1.3: Revisions to Import Price Assumptions* (Index, 2010=100)



Sources: CBRT, TURKSTAT.

* Shaded area denotes the forecast period.

Monetary Policies of Advanced Economies

Led by the Fed and the ECB, central banks of advanced economies shifted from a rate-cut process to a stand-by process. After a rate cut in its October meeting, the Fed kept rates constant in December as expected. Unless acute changes are observed in the growth-employment equilibrium or in the inflation trend, the most likely scenario for advanced economies seems to be maintaining the current monetary policy stance for an extended period. This outlook also creates room for rate cuts by EME central banks. Accordingly, the exogenous assumption for the foreign interest rate path underlying medium-term forecasts seems supportive of financial conditions, as was the case in the previous reporting period. Forecasts are based on the assumption that the global risk sentiment will not worsen further over the upcoming period.

Food Prices

Another exogenous variable underlying the medium-term forecasts is the path of unprocessed food prices that is considered to be relatively outside the monetary policy domain. Annual inflation in the food and non-alcoholic beverages group increased to 10.89% in the last quarter. Food inflation overshot the October Inflation Report forecast by a small margin due to indirect effects of the higher administered buying price of raw milk on processed food prices. The end-2020 food inflation forecast of the October Inflation Report, which was 11%, has been left unchanged (Table 7.1.2).

Fiscal Policy, Administered Prices and Tax Adjustments

Medium-term projections are based on an outlook where macroeconomic policies are determined with a medium-term perspective and in a coordinated manner with a focus on bringing inflation down. In this context, the current projections are based on the assumption that fiscal policy will continue to contribute to macroeconomic rebalancing and that administered prices and wages will be largely set to support disinflation, as laid out in the NEP. The strong policy coordination that prioritizes sustained disinflation is critical to continued improvement in the risk premium and perceptions of uncertainty.

Table 7.1.2: Revisions to Assumptions*

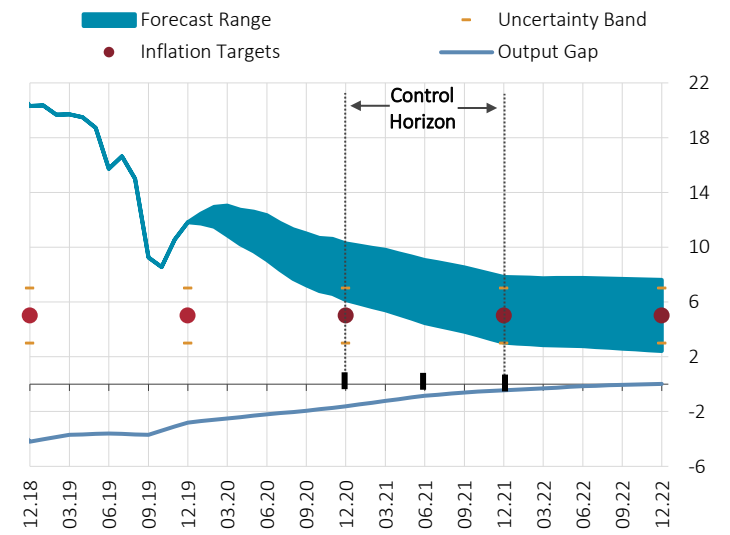
	2019	2020	2021
Export-Weighted Global Production Index (Annual Average % Change)	1.85 (1.96)	1.81 (2.07)	-
Oil Prices (Average, USD)	64.0 (63.4)	60 (57.7)	56.6 (56.2)
Import Prices (USD, Annual Average % Change)	-4.1 (-4.0)	-1.9 (-2.3)	-0.4 (-)
Food Price Inflation (Year-end % change)	10.9 (10.0)	11.0 (11.0)	7.0 (7.0)

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

7.2 Medium-Term Projections

Under a tight monetary policy stance and a strong policy coordination focused on bringing inflation down, inflation is projected to converge gradually to the targets. Accordingly, inflation is projected to be 8.2% at the end of 2020 and fall to 5.4% at the end of 2021, before stabilizing around 5% over the medium term. With a 70% probability, inflation is expected to be between 6.2% and 10.2% (with a mid-point of 8.2%) at end-2020 and between 3.0% and 7.8% (with a mid-point of 5.4%) at end-2021 (Chart 7.2.1).

Chart 7.2.1: Inflation and Output Gap Forecasts*



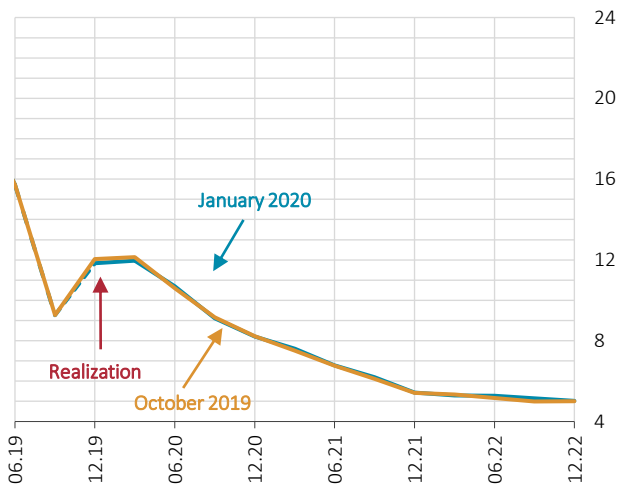
Sources: CBRT, TURKSTAT.
*70% confidence interval.

Inflation developments after the October Inflation Report were consistent with projections. Within the framework that monetary policy stance and macro policy coordination focus on maintaining the sustained disinflation process, year-end inflation projections for 2020 and 2021 were kept unchanged.

The inflation forecast for end-2020 was held constant at 8.2% (Chart 7.2.2). The effect of the increase in the oil price assumption on inflation is limited, due to the support from the sliding-scale tariff in fuel products, and calculated to be 0.1 point. The output gap, which is expected to be slightly higher than the forecasts of the previous Report, and the increase in real unit labor costs add 0.1 and 0.2 points, respectively, to the consumer inflation forecast (Chart 7.2.3). On the other hand, the realization at the end of the last quarter of 2019 and the expected improvement in the underlying trend of inflation are estimated to bring inflation down by 0.2 points in the upcoming period. Moreover, tax adjustments in furniture, alcoholic beverages and tobacco along with some food products are estimated to bring down inflation by 0.2 points.

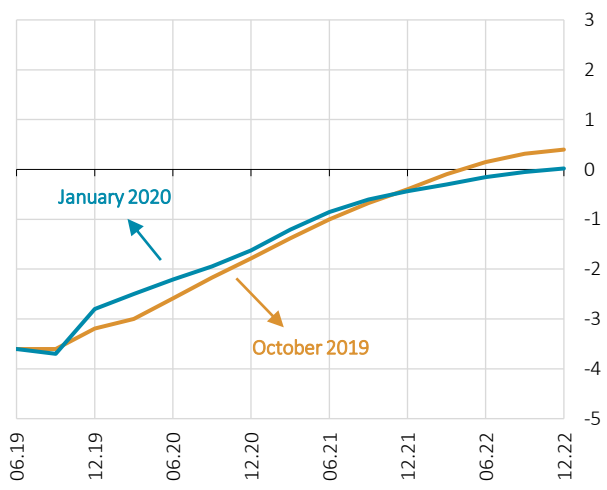
The inflation forecast for 2021 was kept unchanged at 5.4%. The disinflation process is expected to continue on the back of sustained caution in the monetary stance as well as the improvement in expectations.

Chart 7.2.2: Inflation Forecast



Sources: CBRT, TURKSTAT.

Chart 7.2.3: Output Gap Forecast



Source: CBRT.

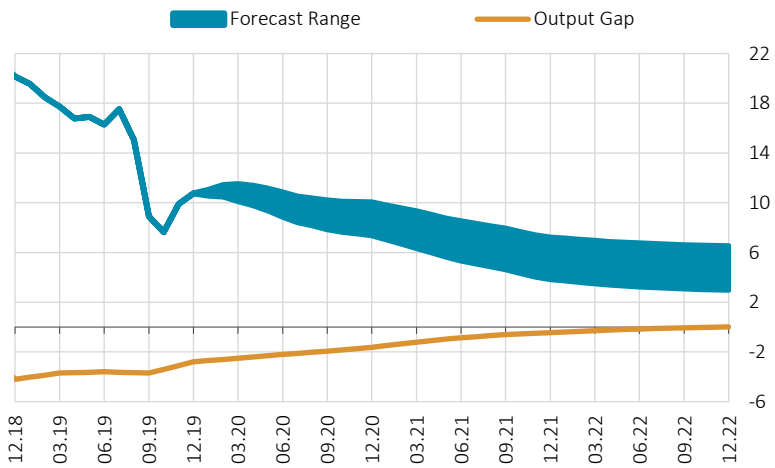
The above-mentioned forecasts are based on a framework in which global financial conditions will follow a moderate course and the recent gradual improvement in the country risk premium will continue into the upcoming period. The sluggish global economic activity and the low global inflation rate strengthen the expectations that the recent accommodative stance of major central banks will be preserved in the medium term under current circumstances. Revised projections rely on an outlook in which the monetary stance will be determined in a way to ensure that the ongoing disinflation is consistent with the targeted path. Additionally, it is assumed that the fiscal policy stance will be determined in coordination with monetary policy with a focus on price stability and balanced growth.

Despite the geopolitical developments since the previous Report, further improvement in the country risk premium and the outlook for global financial conditions have curbed the volatility in financial markets. Against this backdrop, adjustments in reserve requirements, the improvement in the banking sector liquidity and other supportive measures provided a boost to loan supply. Meanwhile, notable rate cuts since July have also helped to buoy the loan demand, which has led to further loan growth. The current improvement in financial conditions supports the gradual recovery in domestic demand. Accordingly, aggregate demand conditions are expected to be non-inflationary (Chart 7.2.3).

Maintaining a sustained disinflation process is critical to achieving a lower country risk premium, lower long-term interest rates, and a stronger economic recovery. Stronger policy coordination towards disinflation that will help reduce the backward indexation behavior and lower medium-term inflation expectations consistent with forecasts and targets is key for success in disinflation.

Unpredictable price fluctuations in items beyond the monetary policy domain, such as unprocessed food, energy and tobacco products, is a major factor causing deviation in inflation forecasts. Core inflation indicators obtained by excluding these items are relatively less volatile and contain more information as to the underlying trend of inflation. Therefore, forecasts for inflation excluding unprocessed food, energy, alcoholic beverages, tobacco products and gold (the B index) are also shared with the public (Chart 7.2.4). In this context, annual inflation in the B index is projected to remain in a downtrend and gradually converge to the 5% target in the medium term.

Chart 7.2.4: Annual Inflation Forecast for the B Index*



Sources: CBRT, TURKSTAT.
*70% confidence interval.

Comparison of the CBRT's Forecasts with Inflation Expectations

Improved pricing behavior and inflation expectations are critical for a sustained disinflation process. Currently, 12 and 24-month ahead expectations of the respondents of the Survey of Expectations hover above the CBRT's forecasts but there is a widespread improvement in expectations compared to the previous reporting period (Table 7.2.1). The gradual convergence of inflation expectations to CBRT forecasts throughout the year was primarily driven by the monetary stance that safeguarded a consistency between inflation and forecasts as well as by increased credibility of forecasts. With medium-term expectations lying outside the uncertainty band around the inflation target, all macroeconomic policies should be well coordinated with monetary policy to bring inflation down. To better manage expectations, it is necessary that monetary policy remain prudent and government-controlled prices and taxes be set in line with inflation targets to reduce backward indexation.

Table 7.2.1: CBRT Inflation Forecasts and Expectations

	CBRT Forecast	CBRT Survey of Expectations*	Inflation Target
End-2020	8.2	10.0	5.0
12-Month Ahead	8.0	9.5	5.0
24-Month Ahead	5.4	8.5	5.0

Source: CBRT.
* Data from the January Survey of Expectations.

7.3 Key Risks to Inflation Forecasts and the Likely Monetary Policy Response

The outlook underlying the medium-term projections presented in the Inflation Report is based on the Monetary Policy Committee's judgments and assumptions. The major upward and downward macroeconomic risks that may lead to a change in the baseline projections and the associated monetary policy stance are as follows:[2]

- Possible fluctuations in the country risk premium due to global and geopolitical developments,
- Medium-term inflation expectations that still hover above the target despite the improvement,
- Risks to the coordination between monetary and fiscal policies (fiscal stance, administered prices, wage and tax adjustments),
- Risks to the credit market,
- Uncertainty over the global trade and growth outlook,
- Uncertainty over the evolution of capital flows to emerging market economies, and
- Volatility in crude oil and import prices.

Turkey's risk premium continued to decline owing to the cautious monetary policy stance, improved macroeconomic indicators and the accommodative monetary policies in advanced economies. However, upside risks regarding global and geopolitical uncertainties on the medium-term inflation outlook through country risk premium and exchange rate volatility channels will continue to be monitored closely. If financial volatilities elevate to a level that may pose risks to price and financial stability, an appropriate policy response will be given using the comprehensive tool set for the TL and FX liquidity management as well. Determining the monetary policy stance to keep the disinflation process on track with the targeted path is of great importance for a sustained improvement in the sovereign risk premium and the exchange rate volatility. In order to enhance the effectiveness of the monetary policy and to minimize a likely inflation-growth trade-off, it is crucial that macro-financial policies are determined with a focus on reducing financial volatility and the risk premium, and that predictability of the fiscal policy continues to be reinforced.

The downtrend in medium-term inflation expectations continues to be widespread, the distribution of expectations implies an increased consensus among survey participants, which indicates that uncertainties regarding the medium-term inflation outlook have declined considerably. However, medium-term inflation expectations still hover above the inflation target, continuing to pose an upside risk to the medium-term inflation outlook. In order to anchor expectations, it is critical to determine the monetary policy stance to keep the disinflation process on track with the targeted path.

Medium-term projections rely on an outlook where the fiscal policy is formulated in coordination with the monetary policy focusing on the price stability and macroeconomic balancing. Accordingly, it is assumed that the administered price, wage and tax adjustments are formulated in a way that will help to reduce the backward indexation behavior. In case the fiscal policy significantly deviates from the explained framework leading to an adverse impact on the medium-term inflation outlook, the monetary policy stance may be revised.

Loan and deposit rates continued to decline due to the CBRT's notable policy rate cuts since July as well as the improvement in inflation expectations and financial sector liquidity. The TL-denominated loan growth, consumer loans in particular, remained on the rise thanks to improved financing conditions and recovering domestic demand. The more flexible and effective use of required reserves as a countercyclical financial policy tool in this period supports credit growth. Moreover, the aim of the

[2] Evaluations of the channels through which these risks may change inflation forecasts and the direction of this change are summarized in Table 7.3.1.

reserve requirement practices is to encourage the use of long-term commercial loans that have a stronger relation with investment and of long-term mortgage loans that have a weaker relation with imports, thereby achieving a credit growth composition that would pose smaller risk to inflation and the current account balance. In case banks' risk perceptions lead them to a credit composition more significantly tilted towards consumer loans than envisaged in the baseline scenario, current regulations may need to be revised according to their impact on the composition of growth, inflation, current account balance and risk premium.

Although the current monetary stance is likely to further underpin the normalization in credit demand and credit supply conditions, there are some downside risks to the credit market in the upcoming period. While there is an apparent preference for the Turkish lira in loans, a slower shift of preference towards Turkish lira deposits against FX deposits may tighten credit supply conditions and curb loan growth in case of increased financial fluctuations driven by the global risk appetite or geopolitical developments. Moreover, despite the improvement in the outlook of non-performing and Stage 2 loans, the relevant developments in these types of loans will continue to be monitored for any impact they might have on credit supply. The pace, scope and sustainability of normalization in credit supply and demand remain important for the economic activity outlook.

Global economic activity remains sluggish in both advanced and emerging economies. Expectations regarding global trade improved partially following the first phase trade deal between the US and China. However, several issues, along with uncertainties over whether mutual commitments would be delivered, remain to be solved, which keeps the downside risks of trade conflicts to global economic activity alive. Likely effects of other uncertainties regarding global economic policies, geopolitical developments, and increased concerns surrounding the recent epidemic in China on domestic economic growth and inflation through the foreign trade, capital flows and commodity prices channels are monitored closely.

Current global financial conditions and the recent partial improvement in expectations regarding global trade support capital flows towards emerging economies. Nevertheless, downside risks to global growth, uncertainties over global economic policies, geopolitical developments and vulnerabilities peculiar to emerging economies may curb the recent acceleration in capital flows.

Crude oil prices followed a volatile course due to recent geopolitical developments and news flow about the recent epidemic. The sliding-scale tariff in fuel prices has alleviated the effect of the recent oil price hike on inflation. Additionally, the weak global economic activity contains a further rise in commodity prices. The course of crude oil and other commodity prices in the upcoming period will continue to depend on the global growth outlook and geopolitical developments. Therefore, volatilities in commodity prices keep both downside and upside risks to inflation alive. Against this background, the monetary policy response will be determined in a way to keep the likely impacts of energy and commodity prices-driven risks on inflation expectations and pricing behavior under control.

Table 7.3.1: Key Risks to Inflation Forecasts and Possible Impact Channels*

Risk	Assessment of Risks as against the Baseline Scenario and Possible Impact on Inflation (↑ | ↔ | ↓)	Indicators Monitored
Fluctuations in the country risk premium	**Pricing Behavior and Expectations Channel:** • The fall in country risk premium and exchange rate volatility continues. However, coupled with global uncertainties and geopolitical risks, relatively high levels of country risk premium and exchange rate volatility may pose upside risks to inflation forecasts via exchange rate and expectations channels. ↑ **Financial Conditions and Demand Channel:** • Likely upward movements in country risk premium and exchange rate volatility may exert a downward pressure on economic activity via the financial conditions channel. ↓	• Risk premium indicators • Global risk appetite indicators • Expectations of inflation and exchange rates • Implied volatility of exchange rates • Domestic macroeconomic indicators that may affect country risk premium • Financial conditions • Credit market indicators • Various output gap indicators • Leading indicators of demand and economic activity • Financial and real sector balance sheets • Capital flows • News flows regarding geopolitical developments
Elevated levels of medium-term inflation expectations	**Pricing Behavior and Expectations Channel:** • Inflation expectations are falling across all horizons, most visibly in the shorter horizons. Moreover, the distribution of expectations implies an increased consensus among survey participants, which indicates that uncertainties regarding the medium-term inflation outlook have considerably declined. However, elevated levels of medium-term inflation expectations indicate that upward risks to pricing behavior remain. ↑ **Pricing Behavior and Demand Channel:** • Delay in the projected decline in medium-term inflation expectations may increase the growth cost of disinflation. ↑	• Key inflation indicators • Diffusion indices • Indicators pertaining to backward indexation behavior in inflation expectations • Distribution of inflation expectations • Inflation uncertainty measures • Inflation indicators by sectors and subsectors • Various output gap indicators • Survey and market-based expectations of inflation and exchange rates
Uncertainties pertaining to backward indexation behavior	**Pricing Behavior and Expectations:** • A strong backward-indexation mechanism in pricing and wages may limit sensitivity of inflation to business cycles and lead to slower disinflation. ↑ • In case labor cost pressures cannot be offset by productivity increases, the impact on consumer prices may be stronger. ↑	• Real unit labor costs • Real wage and earnings indices • Partial labor productivity and total factor productivity • Private sector wage setting process

Table 7.3.1: Key Risks to Inflation Forecasts and Possible Impact Channels*

	Demand and Credit Channel: • Relatively high backward-looking adjustments in wage hikes, coupled with their effect on income and on credit growth, may boost the economic growth and may tilt its composition towards excessive consumption levels .	↑	• Rate of increase in minimum wage and similar wage groups • Consumer spending • Rate of increase in consumer loans • Credit composition • Growth composition • Imports
Risks to effectiveness of monetary and fiscal policy coordination	**Administered Prices and Tax Adjustments:** • The disinflation process may be delayed, should the path of administered prices and tax adjustments significantly exceed the path envisaged in this Report. **Risk Premium:** • If the budget deficit increases more than envisaged in the NEP, the country risk premium may rise. **Demand and Expectations Channel:** • The disinflationary effect of demand conditions may be reduced, should direct or indirect supportive impact of fiscal policy on domestic demand and economic activity be stronger than envisaged in the current Report.	↑ ↑ ↑	• Administered price and tax adjustments • Envisaged fiscal policy measures as part of the New Economy Program and the 2019-2020 budget • Developments in spending items sensitive to fiscal policy measures • Quasi-fiscal policy measures supporting economic activity • Loan growth in public and private banks • Government budget and public debt stock indicators • Estimates of the structural budget balance • Domestic demand indicators • Output gap forecasts
Risks regarding food prices	**Food Prices:** • Unprocessed food prices may be volatile due to weather conditions and supply-side factors, which may cause risks to inflation forecasts in both directions. • Bread and cereals prices pose upside risks to processed food prices.	↔ ↑	• Developments in food prices by categories and subcategories • Supply-side developments in agricultural production • Deviation of unprocessed food prices from historical trend • Food Committee measures and their implications
Risks regarding credit supply and composition	**Balance Sheet and Bank Lending Channel:** • Despite declining over the previous period, risks regarding firms' balance sheets and cash flows continue. This may lead banks to extend more consumer loans than usual. The effects of such an increase on growth composition, inflation, the current account deficit and risk premium are closely monitored.	↑	• Credit use by firms • Loan and deposit rates • Stage 2 loans and NPL breakdown by sectors and loan types, bad cheques and protested bills • Credit conditions (Bank Loans Tendency Survey)

Table 7.3.1: Key Risks to Inflation Forecasts and Possible Impact Channels*

	• On the other hand, a delay in the improvement in employment and incomes may limit retail loan growth.	↓	• Indicators regarding credit demand • Financial sector and real sector balance sheets, cash flows • Residential and commercial real estate prices (nominal/real) • House sales, construction sector value added • Borrowing costs of Turkish banks • Firms' external borrowing • Data on the composition of loans by borrowers (retail/commercial), maturities, sectors and firm size
Global growth outlook and uncertainties over capital flows to EMEs	**Foreign Demand and Global Financial Conditions:** • Despite the relative improvement in expectations for global trade, persistent uncertainties over global growth keep downside risks to domestic economic activity alive via capital flows and foreign trade channels. **Global Risk Appetite:** • If major central banks opt for stronger easing in their monetary policies, upside risks to portfolio flows to emerging economies may materialize. • On the other hand, if the monetary easing in advanced economies turns out to be more limited and short-lived than expected, downside risks to capital flows to emerging economies may appear. • Geopolitical developments may curb the global risk appetite.	↓ ↓ ↑ ↑	• Global inflation and growth indicators and forecasts • Export-weighted global economic activity index • Global economic policies and trade policies • Global risk appetite indicators • Trend and composition of global capital flows, Turkey's share
Fluctuations in crude oil and import prices	**Import Prices:** • There are risks to crude oil prices in either direction due to supply-side factors, geopolitical developments, recent news flows of epidemic diseases, and unfavorable outlook in global economic activity. • Likely changes in the sliding-scale tariff may lead the impact of oil prices on inflation to differ from the baseline projections.	↔ ↔	• Crude oil and other commodity prices and supply-demand balance • Global trade policies • OPEC decisions • Adjustments in domestic fuel oil prices • Imports and current account balance

Table 7.3.1: Key Risks to Inflation Forecasts and Possible Impact Channels*

	• Volatilities in emerging market economies, easing in monetary policies of advanced economies as well as persisting global economic and geopolitical uncertainties pose risks to precious metal prices in either direction.	↔	

* Each risk row of the table presents evaluations on the channel through which inflation forecasts may change, along with the direction of that change, if the respective risk materializes. The signs ↑, ↓ indicate the direction in which the risks influence the inflation forecast (upside and downside, respectively). The sign ↔ denotes circumstances where the net effect on the inflation forecast is not clear. Indicators used in monitoring the risks are listed in the right column.

Box 7.1

An Evaluation of End-2019 Inflation Forecasts

Under the inflation targeting regime, the CBRT provides the public with comprehensive reviews of inflation developments through reports. This box gives a summary of the end-2019 inflation forecasts announced in Inflation Reports throughout 2019, along with the changes in the main assumptions underlying these forecasts.

Since the final quarter of 2018 when inflation uncertainty increased, the Central Bank has clearly communicated that the inflation projections shared in the Inflation Reports were interim targets. In the following period, formulating a monetary stance conducive to a sustainable disinflation process and consistent with inflation projections contributed substantially to the improvement in forecast credibility and monetary policy predictability. These developments played a central role in having inflation expectations gradually converge to the Bank's forecasts and reaching a better consensus between survey participants. In fact, owing to the tight monetary stance, inflation stood close to the lower bound of the Inflation Report forecasts throughout the year and the mid-point of these forecasts was revised downwards (Chart 1.b).

Revisions to assumptions for food and international crude oil prices stood out among external assumptions (Table 1). The sharp rise in unprocessed food inflation in the first quarter of 2019 was followed by a decline in the second quarter due to favorable supply conditions. In addition, oil prices were revised to reflect the fluctuations stemming from the slowdown in global trade and growth and negative supply-side developments. Import prices were also revised in line with changes in oil prices. On the other hand, because of uncertainty regarding international trade and the decline in global trade volume, the global growth outlook was revised downwards.

Table 1: Inflation Report Assumptions for 2019

	January IR	April IR	July IR	October IR	Actual
Food Prices (year-end % change)	13.0	16.0	15.0	10.0	10.9
Export-Weighted Global Production Index (annual average % change)	2.28**	2.07	2.03	1.96	1.85*
Import Prices (annual average % change)	-2.2	0.0	-3.1	-4.0	-4.0*
Brent Crude Oil Prices (annual average, USD/bbl)	63.1	67.2	65.0	63.4	64.0

Source: CBRT.
* Forecasts as of January 2020.
** Due to a methodological change in the calculation of the index, the assumption for 2019 differs from the value published as 2.57% in the January Inflation Report. In this table, values obtained from the new index are used.

Inflation was 11.8% at the end of 2019. The key driver of the fall in inflation throughout the year was the positive impact that improved inflation expectations and pricing practices had on the underlying trend of inflation thanks to a tight monetary stance. In addition, the stable course of the Turkish lira and mild levels of oil prices helped inflation to decline. On the other hand, the volatility in unprocessed food prices caused both upward and downward revisions to year-end inflation forecasts (Table 2).

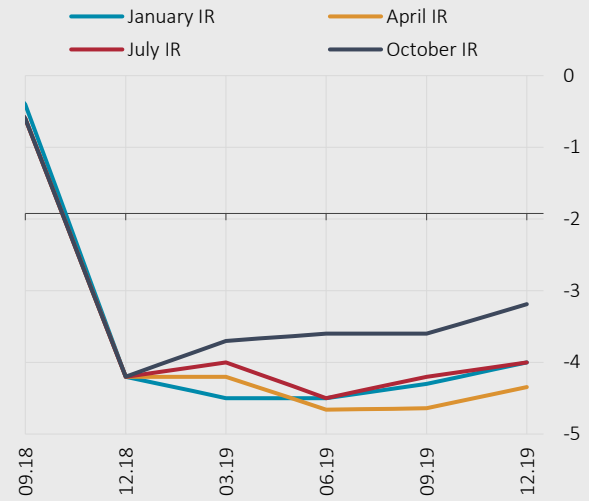
January Inflation Report (2019-I)

Amid financial volatilities and heightened uncertainty in the third quarter of 2018, inflation rates surged. Owing to reduced financial volatility and the relatively improved underlying inflation trend backed by the tight monetary stance, consumer inflation fell to 20.3% at the end of 2018.

Output gap forecasts were revised downwards for the second half of 2018, and those for 2019 were based on an outlook in which net exports would contribute positively to growth, the tightness in financial conditions would taper off and the fiscal policy would be formulated in line with the rebalancing process in the economy (Chart 1.a).

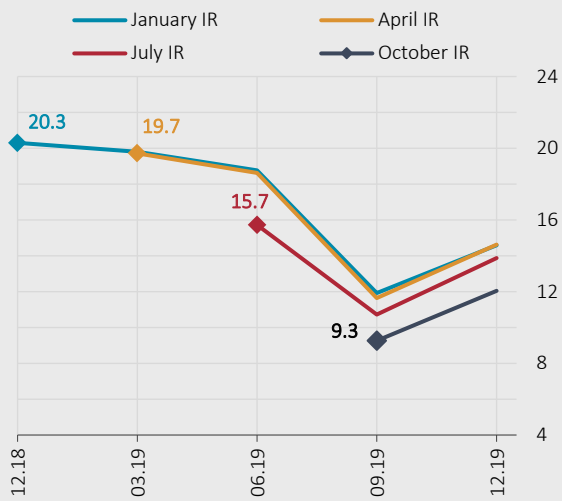
With a tight policy stance that focused on bringing inflation down and providing macroeconomic rebalancing through enhanced policy coordination, consumer inflation was projected to be 14.6 percent at end-2019 (Chart 1.b).

Chart1.a: Revisions to Average Output Gap Forecasts (%)



Source: CBRT.

Chart1.b: Revisions to Inflation Forecasts in 2019*, ** (%)



Source: CBRT, TURKSTAT.
* The series show the projected inflation path from the start of the corresponding period to the end of year.
** The initial points in series show the actual inflation values.

April Inflation Report (2019-II)

In line with the January Inflation Report projections, consumer inflation declined to 19.7% in the first quarter of 2019 (Chart 1.b). Meanwhile, core inflation posted a more visible decline, standing at 17.7%, a level that was below the projection of 19.2%. The fall in headline inflation was rather limited relative to the fall in core inflation because of high unprocessed food inflation.

Economic activity was forecast to follow a stronger course in the first half of 2019 relative to the previous report with the support of public expenditures, easing financial conditions thanks to fiscal incentives and an improved risk premium, and the strong contribution of net exports. Accordingly, output gap forecasts for the first half of the year were revised upwards (Chart 1.a).

In this period, the global risk appetite improved slightly on the back of prospects of a prolonged monetary policy normalization across advanced economies. However, Turkey's risk premium was not substantially improved as a result of some geopolitical developments. Moreover, unfavorable supply conditions brought the assumption for food price inflation up from 13% to 16% for 2019. Despite these factors, with a tight policy stance that focused on bringing inflation down and providing macroeconomic rebalancing through enhanced policy coordination, the January Inflation Report year-end inflation forecast remained intact at 14.6% in the April Inflation Report.

July Inflation Report (2019-III)

Consumer inflation slowed to 15.7% in the second quarter of 2019, a rate that was lower than the April Inflation Report forecast of 18.6%. The lower-than-expected consumer inflation was mostly driven by the sharp decline in unprocessed food inflation and the fall in oil prices. Additionally, a mild domestic demand and the tight monetary stance supported the fall in inflation.

Based on the assumption that net exports would continue to stimulate growth, and financial conditions would gradually ease owing to an improved inflation outlook and a reduced country risk premium, output gap forecasts for the year were revised upwards (Chart 1.a).

The second quarter's consumer inflation that came in 2.9 points lower than the April Inflation Report projection, the impending fall in the underlying trend of inflation, and the downward revisions to assumptions for oil prices, TL-denominated import prices and food prices brought the year-end inflation forecast down by 0.7 points from the April forecast to 13.9% (Chart 1.b).

October Inflation Report (2019-IV)

In the third quarter of 2019, consumer inflation fell to 9.3%, nearing the lower bound of the July Inflation Report forecast. The significant slowdown in inflation observed since September 2019 was driven by the stable course of the Turkish lira, the improvement in inflation expectations, mild domestic demand conditions, and the high base effect from the previous year.

In line with the backward revisions to national income data and the data flow since the previous reporting period, output gap forecasts were revised upwards for the first three quarters of the year. For the final quarter, based on the assumption that financial conditions would be more supportive, the output gap was predicted to close slightly (Chart 1.a).

On the back of favorable supply conditions, assumption for the year-end food inflation forecast was lowered by 5 points to 10%. In addition, following the downward revisions to oil and TL-denominated import prices and the improvement in the underlying inflation trend, the year-end consumer inflation forecast was lowered by 1.9 points from the previous report to 12.0% (Chart 1.b).

Actual Inflation at the end of 2019

The year-end consumer inflation was 0.2 points below the October Inflation Report projections. The key drivers were the stable Turkish lira, a mild domestic demand, and a more favorable than projected underlying inflation trend. Food inflation stood at 10.9%, overshooting the October Inflation Report assumption of 10%, while TL-denominated import prices rose at a slightly slower rate than the assumptions. The last column of Table 2 displays how each of these factors contributed to the deviation between expected and actual year-end inflation rates.

Table 2: Revisions to end-2019 Inflation Forecasts

	January IR	April IR	July IR	October IR
Inflation Forecasts (%)	14.6	14.6	13.9	12.0
Sources of Revisions*				
	Apr-Jan	Jul-Apr	Oct-Jul	Dec-Oct
Food	0.7	-0.2	-1.2	0.2
Import Prices (TL)	0.3	-0.3	-0.3	-0.1
Underlying Inflation	-0.3	-0.6	-1.1	-0.3
Output Gap	-0.1	0.2	0.1	0
Adjustments to Alcoholic Beverages, Tobacco Products and Other Taxes	-0.6	0.2	0.6**	0

Source: CBRT.
* The first three columns show the sources of revisions in the inter-reporting period, while the last column shows the sources of the deviation between actual inflation and the October Inflation Report forecast. Inflation ended 2019 at 11.8%.
** The increase in prices of tobacco products in the October Inflation Report.

In conclusion, end-2019 inflation forecasts were gradually revised downwards throughout the year. These revisions were enabled by the positive impact the tight policy monetary stance and the disinflation-oriented strong policy coordination had on main inflation drivers including exchange rate, pricing behavior and expectations. Downward revisions to assumptions for food inflation and oil prices as of the second quarter of the year also played a major role. The CBRT has transparently communicated to the public the revisions to forecasts and their reasons through Inflation Reports, fulfilling the commitment of accountability on a regular basis.