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 for the upcoming 3-year horizon.

7.1. Current State, Short-Term Outlook and Assumptions

Financial Conditions

Having surged considerably in the third quarter of 2016, portfolio flows to emerging economies reversed in the fourth quarter due to prospects for accelerated growth in the US amid the adoption of expansionary fiscal policies and the expectations for earlier rate hikes by the Fed. The Turkish economy also experienced portfolio outflows in this period, which were more pronounced in bond markets than stock markets.

In the last quarter of 2016, financial markets have been more volatile amid the heightening fluctuations in global markets, the geopolitical tensions and the domestic uncertainty, which caused the exchange rate and market rates to diverge negatively in Turkey from those of other emerging economies. On the other hand, loans continued to grow mildly on the back of financial-stability-promoting macroprudential policies as well as the CBRT's liquidity measures and public incentives.

The CBRT maintains a stabilizing stance for FX liquidity and a supportive stance for financial stability in order to restrict the negative effects of global and domestic financial market volatilities on exchange rates and lending standards. To curb the adverse impact of exchange rate movements spurred by heightened global uncertainty and volatility on inflation expectations and the pricing behavior, the CBRT opted for some monetary tightening in November and raised the marginal funding rate and the 1-week repo rate by 25 and 50 basis points, respectively. In January, the CBRT adopted a series of liquidity measures against the excessive volatility in the financial markets. Accordingly, 1-week repo auctions have been suspended as of 12 January 2017 and given the restricted marginal funding, a part of the funding need of the system has to be provided through the late liquidity window lending rate as of 16 January 2017. This, in turn led to a rise in the CBRT average funding rate and the BIST Interbank Repo-Reverse Repo Market rate. At the January MPC meeting, the CBRT decided to tighten the monetary policy further against the deteriorating inflation outlook driven by excessive fluctuations in exchange rates. Thus, the marginal funding rate and the late liquidity window lending rate were raised by 75 and 100 basis points to 9.25 and 11 percent, respectively. Against this background, the yield curve shifted upwards especially in shorter term maturities compared to the previous reporting period.

Inflation

Consumer inflation ended the last quarter at 8.53 percent, remaining above the October Inflation Report forecast. Despite the downside effects from economic activity, the higher-than-projected increases in prices were driven by tax hikes, stronger cost pressures and the partial surge in food prices (Box 7.1). In particular, aggravated costs amid the depreciated Turkish lira imposed significant upside pressure on inflation in this period. Accordingly, inflation excluding unprocessed food and tobacco products also exceeded the October Inflation Report forecasts. On the other hand, demand conditions have remained weak since the previous Report, which helped to restrain the deterioration in the inflation outlook.

Demand Conditions

In the third quarter of 2016, economic activity proved slightly weaker than estimated in the October Inflation Report. Economic activity saw a pick-up in the last quarter as working day losses due to extended religious holidays and the mid-July turmoil were compensated. However, the underlying trend of the economic activity is estimated to improve only modestly in this period. In addition, given the comprehensive revision in the national income estimations, the output gap estimate for the third and fourth quarters were revised downwards in the inter-reporting period (Table 7.1.1, Box 4.2).

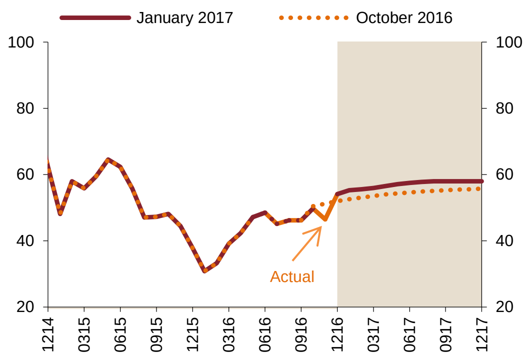
External demand was not subject to a noticeable revision on account of the global growth outlook. In fact, the annual growth rate of the export-weighted global production index, which is updated according to current growth forecasts of Turkey's export partners, has remained almost unchanged since the October Inflation Report (Table 7.1.1).

Oil, Import and Food Prices

Owing to the recent developments, assumptions for crude oil prices for the upcoming period were revised upwards compared to the October Inflation Report, while assumptions for USD-denominated import prices saw a minor downward revision (Table 7.1.1, Charts 7.1.1 and 7.1.2). The crude oil price assumption in annual averages was raised to 57 USD for 2017. It should be noted that in terms of Turkish lira, import prices were subject to a considerable upward revision compared to the previous reporting period.

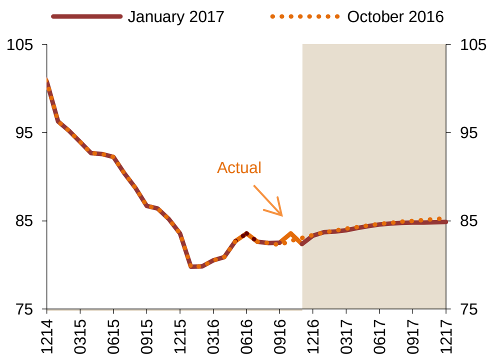
The year-end food inflation, which was estimated to be 6 percent in the October Inflation Report, remained broadly consistent with the projections at 5.65 percent. However, given the probable effects of the recent adverse weather conditions on the food supply coupled with the effects of the depreciated Turkish lira, food inflation is likely to rise in 2017. On the other hand, the ongoing subsided food demand due to the sluggish tourism sector accompanied by the measures taken by the Food Committee are expected to limit this rise to some extent. Accordingly, the assumption for food price inflation has been revised upwards from 7 percent to 9 percent for end-2017 since the October Inflation Report, while that for 2018 has remained intact at 7 percent.

Chart 7.1.1.
Oil Prices
(USD/bbl)



Source: Bloomberg, CBRT.

Chart 7.1.2.
Import Prices
(2010=100)



Source: CBRT, TURKSTAT.

Fiscal Policy and Tax Adjustments

The contribution of adjustments in administered prices to consumer inflation was well above the historical averages in 2016. Forecasts for 2017 and onwards are based on the assumption that adjustments to taxes and administered prices will be consistent with the inflation target and automatic pricing mechanisms. The medium-term fiscal policy stance is based on the MTP projections covering the 2017-2019 period.

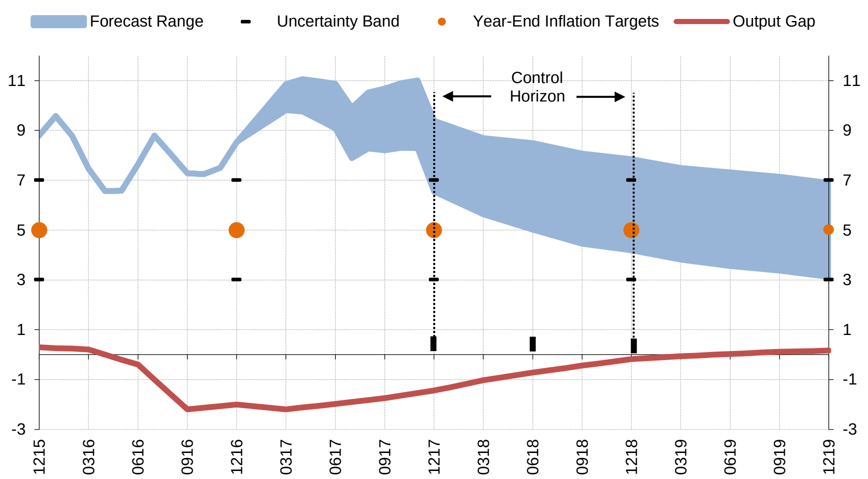
Table 7.1.1.
Assumptions

		October 2016	January 2017
Output Gap	2016Q3	-1.5	-2.2
	2016Q4	-1.2	-2.0
Food Prices (Year-end Percent Change)	2017	7.0	9.0
	2018	7.0	7.0
Import Prices (Average Annual Percent Change, USD)	2016	-9.2	-9.2
	2017	3.2	3.0
	2018	-	0,7
Oil Prices (Average, USD)	2016	44	44
	2017	54	57
	2018	-	58
Export-Weighted Global Production Index (Average Annual Percent Change)	2016	1.7	1.8
	2017	1.8	1.9
	2018	-	1.9

7.2. Medium-Term Forecasts

Given a tight policy stance that focuses on bringing inflation down, inflation is estimated to gradually converge to the 5-percent target. Accordingly, inflation is likely to be 8 percent in 2017, and stabilize around 5 percent in 2019 after falling to 6 percent in 2018. Hence, inflation is expected to be, with 70 percent probability, between 6.6 percent and 9.4 percent (with a mid-point of 8 percent) at end-2017 and between 4.2 percent and 7.8 percent (with a mid-point of 6 percent) at end-2018 (Chart 7.2.1).

Chart 7.2.1.
Inflation and Output Gap Forecasts*
(Percent)



* Shaded area denotes the 70 percent confidence interval for the forecast.
Source: CBRT.

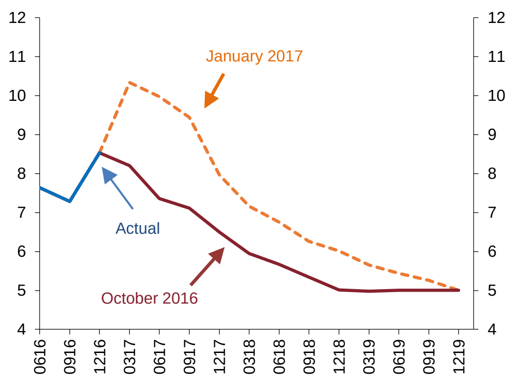
Year-end inflation forecasts for 2017 and 2018 were revised upwards by 1.5 and 1 points, respectively, compared to the 2016 October Inflation Report (Chart 7.2.2). Due to the recent depreciation in the Turkish lira coupled with soaring oil prices, assumptions for TL-denominated import prices for the upcoming period have been revised upwards compared to the previous reporting period. This revision is estimated to drive the inflation forecast for end-2017 upwards by 1.3 points. On the other hand, recent indicators suggest that the domestic demand may recover at a slower pace in 2017 than envisaged in the October Inflation Report amid fluctuations in domestic markets and the aggravation in perceived uncertainty. Accordingly, output gap forecasts were revised downwards (Chart 7.2.3). The revision in output gap forecasts was also due to the adoption of the new national income series (Box 4.2). Hence, the downward revision in the output gap is estimated to pull the end-2017 inflation forecast down by 0.4 points.

Another factor affecting forecasts was the revision of food inflation forecasts for 2017 from 7 percent to 9 percent. This revision added 0.4 points to the inflation forecast for 2017 compared to the previous reporting period. Lastly, the higher-than-expected realization in inflation at end-2016 and the rising core inflation indicators are estimated to push the year-end inflation for 2017 up by 0.2 points. Accordingly, the consumer inflation forecast for end-2017, which was 6.5 in the October Inflation Report, was raised to 8 percent. On the other hand, the consumer inflation forecast for end-2018 was revised from 5 percent to 6 percent. The 1-point upward revision in end-2018 forecast from the October Inflation Report was driven by 1-point upward revision in TL-denominated import prices, 0.2-point upward revision in the underlying trend of inflation and 0.2-point downward revision in the output gap. The projection of a decline in inflation from 8 percent by end-2017 to 6 percent by end-2018 is based on an outlook where cumulative exchange rate effects will diminish and economic activity will remain moderate.

For an accurate evaluation of inflation forecasts, it is essential to take into account that the monetary policy will have limited effects on inflation in the short term, whereas its effects on inflation will be more pronounced within one to two years, namely during the control horizon. Hence, in view of the current level of inflation and the presence of exchange-rate-driven cost pressures, the CBRT took into account the fact that an aggressive and comprehensive monetary tightening needed to lower inflation in a very short time may dampen economic activity further under existing uncertainties. Thus, it is envisioned that inflation will exceed the uncertainty band around the inflation target at end-2017 and will decline gradually to the 5-percent target. The projection that inflation will converge gradually to target-consistent levels in the medium term is based on the assumption that inflation-oriented monetary policy stance will be maintained and structural reforms will be put into effect resolutely.

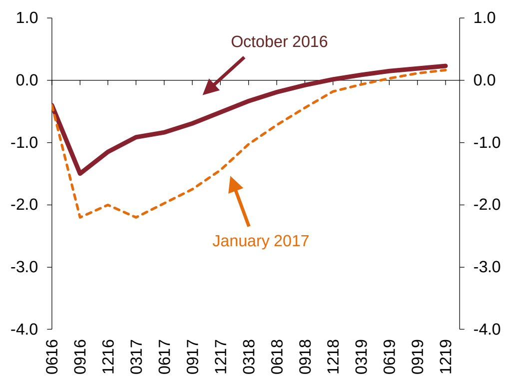
Annual inflation is anticipated to fluctuate during 2017 due particularly to the base effects in the unprocessed food inflation (Chart 7.2.1). Accordingly, owing to the cumulative effects of the recent exchange rate developments accompanied by the expected rise in unprocessed food inflation, consumer inflation is projected to rise in the first quarter, and then register a gradual decline until July. Inflation is estimated to decrease markedly in July and rebound afterwards until November. Nevertheless, in December, it is projected to decrease sharply to 8 percent due to the base effect from the unprocessed food, alcoholic beverages, tobacco products and energy prices.

Chart 7.2.2.
Inflation Forecasts
(Percent)



Source: TURKSTAT, CBRT.

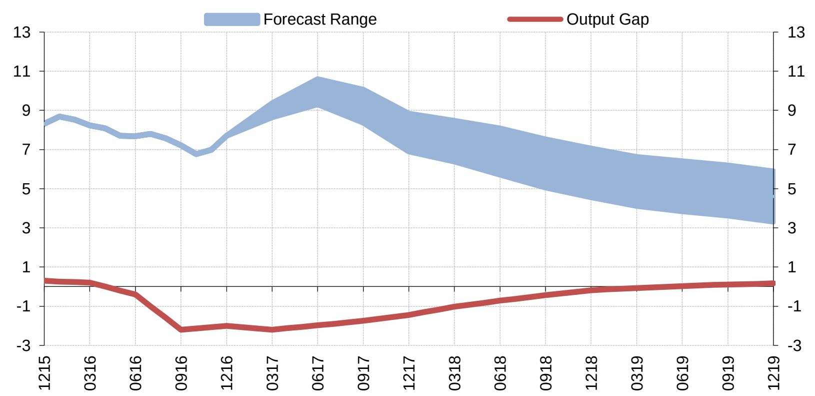
Chart 7.2.3.
Output Gap Forecasts
(Percent)



Source: CBRT.

Unpredictable price fluctuations in items beyond the monetary policy domain, such as unprocessed food and tobacco products, are among major factors that cause a deviation in inflation forecasts. Hence, inflation forecasts excluding unprocessed food and tobacco products are also announced. Accordingly, inflation forecasts excluding unprocessed food, alcoholic beverages and tobacco products are presented in Chart 7.2.4. The inflation indicator as measured above is expected to have a downward trend following the second quarter of 2017 and decline gradually to 4.6 percent in the medium term.

Chart 7.2.4.
Inflation Forecast Excluding Unprocessed Food, Alcoholic Beverages and Tobacco Products*
(Percent)



* Shaded area denotes the 70 percent confidence interval for the forecast.
Source: CBRT.

Comparison of the CBRT's Forecasts with Inflation Expectations

It is critical that economic agents take the inflation target as a benchmark in their plans and contracts and focus on the underlying trend of medium-term inflation rather than on temporary price fluctuations. Likewise, it is crucial that the CBRT's current inflation forecasts be compared with inflation expectations of other economic agents to serve as a reference guide. Currently, the year-end, 12-month-ahead and 24-month-ahead inflation expectations of the Survey of Expectations' respondents are above the CBRT's baseline scenario forecasts (Table 7.2.1). The hovering of inflation expectations above the target and particularly the exceeding of the 24-month-ahead inflation expectations beyond the uncertainty band necessitate close monitoring of expectations and the pricing behavior.

Table 7.2.2.
CBRT Inflation Forecasts and Expectations

	CBRT Forecast	CBRT Survey of Expectations*	Inflation Target
2017 Year-end	8.0	8.5	5.0
12-month-ahead	7.7	8.2	5.0
24-month-ahead	5.9	7.6	5.0

* As of January 2017.
Source: CBRT.

7.3. Risks and Monetary Policy

Global economic uncertainties intensified following the US elections in November 2016. In this period, long-term interest rates surged in advanced economies, while capital flows towards emerging economies subsided. The increased prospects for the adoption of protective policies in the US pose a downside risk to the pace of growth and employment in emerging economies. In addition, the growing possibility of US to adopt accommodative fiscal policies may lead to accelerated rate hikes by the Fed, which may result in further tightening of financial conditions in emerging economies.

In addition to the ongoing uncertainties in global markets, the geopolitical and domestic developments also caused fluctuations in domestic financial markets in the fourth quarter of 2016. The adverse impact of these on financial conditions is partly compensated by liquidity measures, macroprudential arrangements and other incentives. In fact, consumer loans and TL-denominated commercial loans have recently shown signs of recovery. On the other hand, consumer loans may lose some pace in the first quarter of 2017 as the demand for automobiles and durable goods was brought forward amid tax arrangements and exchange rate developments in the last quarter.

Recently released data hint at a noticeable economic slowdown in the third quarter of the year. Thanks to the accommodative incentives and measures, domestic demand recorded an improvement in the last quarter. Nevertheless, the improvement has been rather restricted on a sectoral basis and the underlying trend of economic activity registered a mild growth. Recent indicators suggest that the depreciation in the Turkish lira and the aggravating uncertainty may lead to a slowdown in domestic demand in the first quarter of the year. However, as uncertainties and volatility in financial markets wane, the economy is expected to normalize and grow moderately in 2017. On the other hand, the pace of recovery in tourism revenues, the global economic outlook, uncertainties regarding the monetary policies of advanced economies and geopolitical developments pose downside risks to the economic activity, while possible lagged effects of recent incentives and measures are considered as the upside risk factor. Maintaining price stability as the main objective, the CBRT closely monitors the downside risks to economic activity with respect to its reverberations on financial stability as well.

In the last quarter, inflation increased due to energy, alcoholic beverages, tobacco products and unprocessed food prices. The effects of the rapid depreciation in the Turkish lira were evident mainly in items such as energy and durable goods in which exchange rate pass-through to inflation is relatively fast. Recent tax adjustments, particularly those in tobacco products, also had a significant upside effect on inflation. Although aggregate demand conditions continued to be disinflationary, the depreciation of the Turkish lira and higher commodity prices increased the underlying trend of core inflation. In the short term, the base effect from unprocessed food prices and developments in the TL-denominated import prices are expected to drive inflation upwards significantly. Hence, even though mild aggregate demand conditions are expected to support disinflation, inflation is projected to remain high for a while due to cost pressures and decline gradually as of the second half of the year. Despite the tourism-induced slowdown in food demand and the support from the actions taken by the Food Committee, the base effect from unprocessed food prices, probable consequences of adverse weather conditions on the food supply and the exchange rate developments are expected to push the end-2017 food inflation up compared to the previous Report.

Inflation forecasts accommodate both downside and upside risks, yet upside risks to end-2017 inflation forecast seem more evident. Recently, the marked rise in FX market volatility has posed an upside risk to inflation through expectations and the pricing behavior as well as from the cost channel. On the other hand, demand conditions may prove more disinflationary should economic activity recover more slowly than expected in the period ahead. Risks to food inflation – another major determinant of forecasts – are considered to be balanced. Despite the possibility of a higher-than-expected food inflation amid adverse weather conditions and the reverberations of the exchange rate, measures taken by the Food Committee are believed to counterbalance these risks. The CBRT will closely monitor the developments regarding inflation outlook and continue to take necessary policy measures to achieve price stability.

Against this background, starting from January 2017, the CBRT has taken a series of liquidity measures in response to the excessive exchange rate volatility and deterioration in the inflation outlook and decided to impose stronger tightening in the monetary policy in the January MPC meeting. The CBRT will continue to use all available instruments in pursuit of the price stability objective. Future monetary policy decisions will be conditional on the inflation outlook. Inflation expectations, pricing behavior and other factors affecting inflation will be closely monitored and further monetary tightening will be delivered, if needed. Moreover, necessary liquidity measures will be taken in case of speculative pricing in the foreign exchange market that cannot be justified by economic fundamentals.

Foreign exchange markets experienced heightened volatility in January 2017 despite the absence of a change in the macroeconomic framework or economic fundamentals. This required the adoption of a dynamic framework, which includes various liquidity instruments. While a simple policy framework enhances the effectiveness of the transmission mechanism, it does not rule out such dynamic reactions.

Developments in fiscal policy and tax adjustments are monitored closely with regard to their effects on the inflation outlook. The contribution of adjustments in administered prices to consumer inflation was above historical averages in 2016. This was one of the main reasons for the actual inflation to surpass the CBRT's forecasts announced at the beginning of the year. The baseline monetary policy stance for the upcoming period is formulated under the assumption that fiscal discipline will be maintained and there will be no unanticipated hikes in administered prices. A revision of the monetary policy stance may be considered, should the fiscal policy deviate significantly from this framework, and consequently, have an adverse effect on the medium-term inflation outlook.

In recent years, sustaining fiscal discipline has been one of key factors in lowering the sensitivity of the Turkish economy against external shocks. Moreover, the room provided by the fiscal discipline facilitated the implementation of an expansionary fiscal policy without causing a permanent deterioration in budget balances. However, in the conduct of fiscal policy, other macroeconomic variables such as growth, domestic savings and inflation should also be taken into account besides the budget balance. This enhances the coordination of monetary and fiscal policy, and improves macroeconomic stability.

Box 7.1

An Evaluation of end-2016 Inflation Forecasts

Under the inflation targeting regime, the CBRT shares comprehensive evaluations on inflation developments with the public through reports. This box provides a summary of the end-2016 inflation forecasts announced in Inflation Reports throughout 2016, linking the changes in forecasts with regard to changes in main assumptions.

The end-2016 inflation forecast was kept at 7.5 percent throughout 2016. However, certain revisions were introduced to main assumptions underlying the forecasts, which eventually offset each other. Considering that upside revisions to assumptions on TL-denominated import prices will be counterbalanced by downward revisions to assumptions on food inflation and domestic demand across the year, end-2016 inflation forecasts were kept unchanged (Table 1, Chart 1).

Throughout 2016, depreciation of the Turkish lira amid volatile global financial markets and domestic turmoil in the second half of the year pushed inflation up, particularly in items sensitive to changes in the exchange rate, and also deteriorated inflation expectations. Moreover, tax adjustments, primarily in tobacco products, were one of the main reasons for the rise in inflation above projections in 2016. On the other hand, the weak demand conditions and the favorable course of food prices curbed the increase in inflation. Against this background, the inflation rate exceeded the October Inflation Report forecast of 7.5 percent and hit 8.5 percent at end-2016.

2016 January Inflation Report

Medium-term forecasts in January 2016 were based on the assumption that the CBRT's policy stance would be tight against the TL liquidity, stabilizing for the FX liquidity and supportive of financial stability given the inflation outlook. Taking into account the minimum wage rise, the adjustments to administered prices and the fall in oil prices, consumer inflation, which hit 8.8 percent at end-2015, was estimated to decline to 7.5 percent at end-2016.

2016 April Inflation Report

In the fourth quarter of 2015, economic activity remained broadly in line with the projections of the January Inflation Report. Thus, output gap forecasts for 2016 were unchanged (Chart 1). Moreover, TL-denominated import prices also remained unchanged after the release of the January Inflation Report. The projected path of food prices was revised, yet the year-end food inflation assumption remained intact, resulting in the year-end consumer inflation forecast to be kept at 7.5 percent.

Table.1. Inflation Report Assumptions for 2016

	January 2016	April 2016	July 2016	October 2016	Actual
Food Prices (Annual Percent Change)	9.0	9.0	8.0	6.0	5.7
Export-Weighted Global Production Index (Annual Average Percent Change)	2.2	1.8	1.7	1.7	1.8*
Import Prices (Annual Average Percent Change)	-5.5	-8.9	-8.5	-9.2	-9.2*
Brent Crude Oil Price per Barrel (USD)	37	40	44	44	44

* Forecast.

2016 July Inflation Report

In the first quarter of the year, economic activity remained in line with the outlook presented in the April Inflation Report. On the other hand, in view of possible downside risks to emerge due to the mid-July domestic turmoil, particularly in the short term, the output gap forecasts for the second quarter of 2016 were revised downwards (Chart 1).

In the second quarter of 2016, the deceleration in unprocessed food prices lost pace while oil prices increased. Forecasts were based on the assumption that food prices may be subject to a downward revision, while the upside effects of the rise in TL-denominated import prices and price adjustments in tobacco products may be limited due to the improvement in underlying inflation and the developments in economic activity. Hence, the year-end inflation forecast for 2016 remained intact.

2016 October Inflation Report

In the second quarter of 2016, the economic activity remained consistent with the outlook presented in the July Inflation Report. On the other hand, the mid-July domestic turmoil was projected to limit domestic demand particularly in the short term. Thus, the output gap forecasts were revised considerably downwards for the remainder of the year (Chart 1). Following the release of the July Inflation Report, TL-denominated import price assumptions were revised upwards, while food inflation assumption was lowered by 2 percentage points to 6 percent amid favorable developments in food prices. Overall, the year-end inflation forecast for 2016 was retained as upside risks were assumed to be offset by downside risks to inflation.

Table 2. Revisions in end-2016 Inflation Forecasts

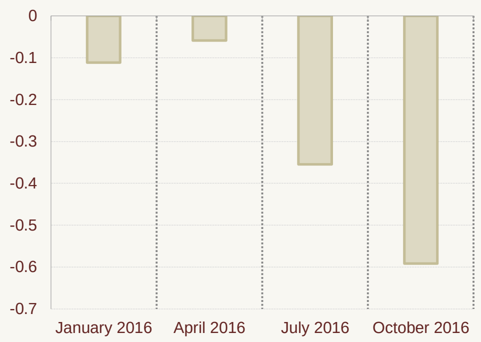
	January 2016	April 2016	July 2016	October 2016
Inflation Forecast	7.5	7.5	7.5	7.5
Sources of Revisions*				
	April-January	**July-April**	**October-July**	**December-October**
Food	0.0	-0.2	-0.5	-0.1
Import Prices (TL)	0.0	0.1	0.4	0.5
Underlying Inflation	0.0	-0.1	0.3	0.1
Output Gap	0.0	-0.2	-0.2	-0.1
Tax Adjustments in Administered Prices	0.0	0.4	0.0	0.6

* The first three columns show the sources of revisions in the inter-reporting period, while the last column shows the sources of difference between actual inflation and the October Inflation Report forecast.
Source: CBRT.

2016 Year-End Inflation Realization

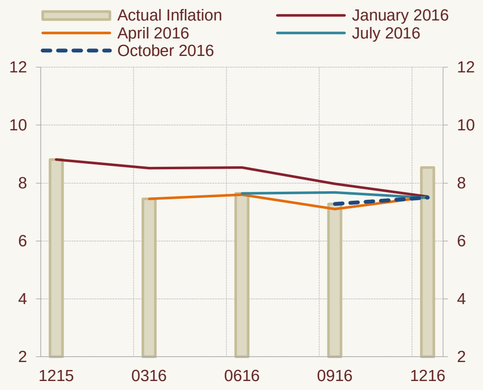
The year-end inflation, which was estimated to be 7.5 percent in the October Inflation Report, was realized as 8.5 percent. The overshooting of the inflation forecast was caused by the higher-than-projected increase in TL-denominated import prices and the deterioration of the underlying inflation amid the depreciation of the exchange rate as well as the tax adjustments in tobacco products and the SCT adjustments in automobiles in the last quarter. On the other hand, the actual end-2016 food inflation at 5.6 percent stood quite close to the October Inflation Report forecast, which was 6 percent, while demand conditions were weaker than anticipated in the October Inflation Report. Table 2 presents the revisions in end-2016 inflation forecasts and also the sources of revisions in the inter-reporting periods together with the sources of the difference between the October Inflation Report forecast and the year-end inflation realization.

Chart 1. Revisions in Output Gap



Source: CBRT.

Chart 2. Revisions in Inflation Forecast*



* Dashed lines denote the projected path of the consumer inflation.
Source: TURKSTAT, CBRT.

In sum, despite some revisions in assumptions, end-2016 inflation forecasts were unchanged and remained intact at 7.5 percent throughout 2016 as these revisions would eventually cancel out each other with respect to their effects on end-2016 inflation forecasts (Chart 2). The difference between end-2016 inflation forecasts in October Inflation Report and the actual year-end inflation is attributed to tax adjustments and the higher-than-projected depreciation in the exchange rate. The CBRT explains revisions to forecasts and their reasons transparently to the public through Inflation Reports and fulfills the liability of accountability on a regular basis.