7. Medium-Term Forecasts

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

The two main factors that determined the dynamics of global financial markets in the inter-reporting period were the Fed's long-awaited rate hike in December and the Chinese stock market crash. Due to tumbling commodity prices and geopolitical tensions, commodity-exporting economies witnessed increased uncertainty related to economic activity. Against this background, the exchange rate volatility in emerging economies has increased dramatically since the previous reporting period. Moreover, emerging markets experienced outflows in equities and bonds in the fourth quarter of 2015.

Risk premium indicators rose for both Turkey and other emerging economies in line with global developments. As a result, Turkish stock and bond markets suffered capital outflows. Yet, Turkey diverged positively from other emerging economies in the foreign exchange market during the fourth quarter as the exchange rate volatility decreased slightly. Over the first few weeks of 2016, however, the global market fluctuations sent Turkey's risk premiums higher on par with those of other emerging economies, heightening both the level and volatility of exchange rates. Spillovers from global financial markets to Turkey were influential on domestic financial conditions. In fact, despite some quarter-on-quarter improvement in the fourth quarter, the FCI still points to tight financial conditions. As announced previously, the CBRT's fourth-quarter policy stance was tight against Turkish lira liquidity, stabilizing for the FX liquidity and supportive of the financial stability.

Inflation

Consumer inflation increased by 0.9 points quarter-on-quarter to 8.8 percent in the final quarter of 2015, remaining above projections of the October Inflation Report.[1] This fourth-quarter rise in inflation was mostly attributed to the rapid rise in prices of core goods driven by the lagged effects of the Turkish lira depreciation through 2015. The depreciation of the exchange rate and the base effect from energy prices were passed through to annual CPI inflation in line with the October Inflation Report's assumptions. The main reason behind the overshoot of the inflation forecast was surging food prices. The acceleration of unprocessed food inflation, notwithstanding increased agricultural production, had a negative impact on the highly inertial services inflation across 2015, particularly through restaurants and hotels. The fall in import prices, oil prices in particular, was reflected on consumer inflation only slightly because of the Turkish lira depreciation. Furthermore, with consumer price inflation hovering above the target for quite some time, inflation expectations also remained elevated across the whole year. Hence, the underlying trend of inflation has deteriorated in recent months.

[1] The difference between the actual inflation at end-2015 and the October 2015 forecast, and revisions in end-2015 forecasts over the entire year are presented in Box 7.1.

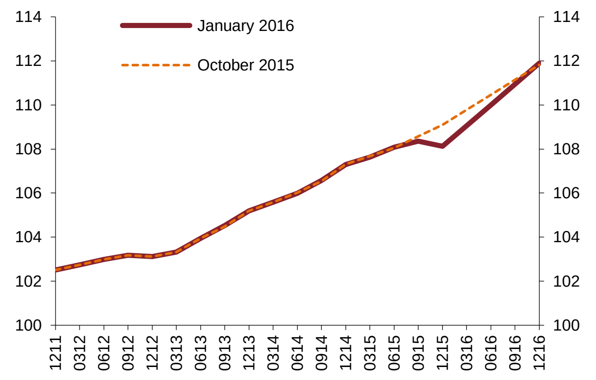
Demand Conditions

In the third quarter of 2015, economic activity followed a stronger course than envisioned in the October Inflation Report. The GDP posted a quarterly 1.3 percent and a yearly 4.0 percent growth in the third quarter. Accordingly, the output gap estimate was revised upwards for the third quarter of 2015 (Table 7.1.1 and Chart 7.2.3). On a year-on-year basis, this upturn was spurred by the agricultural value added and net taxes, while, in quarterly terms, the main driver was the value added from services. On the other hand, the industrial value added provided a limited contribution to growth. As predicted in the previous Report, net exports made a notably higher contribution to quarterly growth, while consumption spending continued to be the main driver of yearly growth thanks to a robust first half.

The last quarter data suggest that industrial production rose above its third-quarter average in the October-November period, while sales, production and import indicators for the domestic demand point to a quarterly deceleration in final domestic demand. The non-gold export volume index increased amid strong EU demand during October and November. Yet, geopolitical tensions pose a downside risk to exports. Accordingly, despite having narrowed slightly during the final quarter, the output gap continues to put downward pressure on inflation (Table 7.1.1 and Chart 7.2.3).

External demand appears as a major threat against growth over the upcoming period, but the ongoing European recovery might offset the negative effects on Turkey's exports. Thus, the annual growth rate of the export-weighted global production index revised by January forecasts posted a limited decline compared to the October Inflation Report (Chart 7.1.1).

Chart 7.1.1. Export-Weighted Global Economic Activity Index
(2008Q2=100)



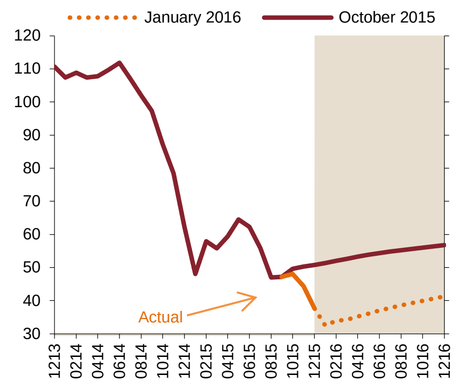
Source: Bloomberg, Consensus Forecasts, CBRT.

Oil, Import and Food Prices

International commodity prices, oil prices in particular, continued to trend downwards in the last quarter of 2015. Owing mostly to the insufficient demand in China and other emerging economies, this caused import prices in the Turkish economy to recede in USD-denominated terms. Hence, crude oil prices and USD-denominated import prices were revised downwards (Table 7.1.1). With regard to annual averages, crude oil price assumptions were reduced from 54 USD to 37 USD for 2016. Also, assumptions for annual percentage changes in average import prices were revised downwards by 4.9

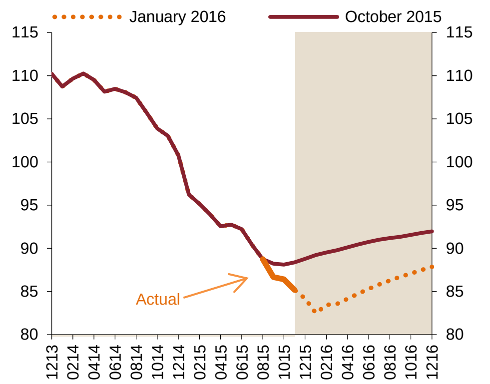
points for 2016. The assumption for food price inflation was revised upwards from 8 percent to 9 percent for 2016 mostly due to the effects of minimum wage adjustments on costs and demand.

Chart 7.1.2.
Revisions in Oil Prices*
(USD/bbl)



Source: Bloomberg, CBRT.

Chart 7.1.3.
Revisions in Import Prices*
(2010=100, USD)



Source: TURKSTAT, CBRT.

Fiscal Policy and Tax Adjustments

Effective as of January 2016, certain items with administered prices saw price increases. The additional effect on the year-end inflation of the portion of these increases that remain above 5 percent is estimated to be 0.4 points in 2016. Meanwhile, the effect of the minimum wage rise on budget balance and tax adjustments is being carefully monitored. The effect of wage developments on production costs, aggregate demand and inflation depends on fiscal policy and the change in employment. Hence, the interaction of the minimum wage rise with the fiscal policy is also being closely monitored. The medium-term forecasts are based on an outlook that adjustments to taxes and administered prices, excluding those already announced in January, will be consistent with inflation target and automatic pricing mechanisms. The medium-term fiscal policy stance is based on the MTP projections covering the 2016-2018 period. Conditional on this outlook, inflation is expected to improve gradually and reach the 5-percent target in the medium term.

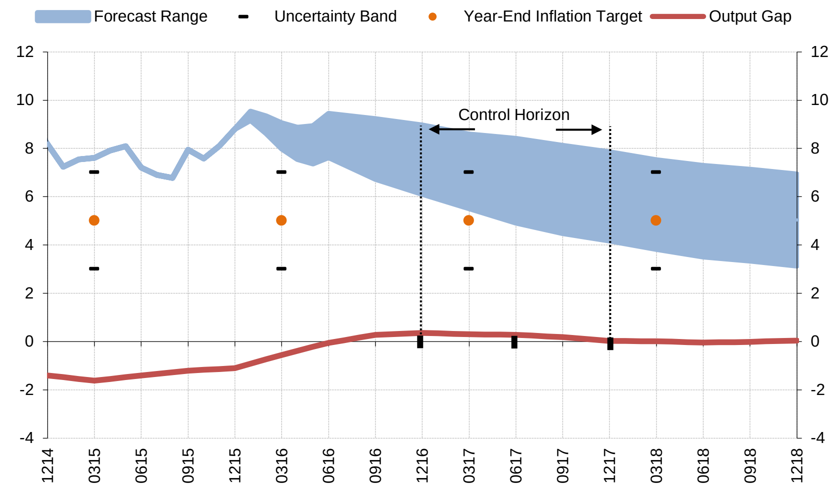
Table 7.1.1. Revisions in Assumptions

		October 2015	January 2016
Output Gap	2015Q3	-1.45	-1.2
	2015Q4	-1.2	-1.1
Food Prices (Year-end Percent Change)	2016	8.0	9.0
	2017	8.0	8.0
Import Prices (Average Annual Percent Change, USD)	2015	-14.7	-15.5
	2016	-0.6	-5.5
	2017	-	5.1
Oil Prices (Average, USD)	2015	54	52
	2016	54	37
	2017	-	44
Export-Weighted Global Production Index (Average Annual Percent Change)	2015	1.9	1.6
	2016	2.3	2.2

7.2. Medium-Term Forecasts

Given a decisive policy stance that focuses on reducing inflation, the 5-percent target is expected to be achieved gradually; inflation is likely to stabilize around 5 percent as of 2018 after falling to 7.5 percent in 2016 and to 6 percent in 2017. Accordingly, inflation is expected to be, with 70 percent probability, between 6.1 percent and 8.9 percent (with a mid-point of 7.5 percent) at end-2016 and between 4.2 percent and 7.8 percent (with a mid-point of 6 percent) at end-2017 (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.

The year-end inflation forecasts for 2016 and 2017 were revised upwards by 1 percent and 0.5 percent, respectively, compared to the October Inflation Report forecasts (Chart 7.2.2). As stated above, driven mostly by oil prices, USD-denominated import prices have registered a considerable decline since October 2015. Together with the exchange rate developments, the downward revision in the assumption for oil and import prices is expected to pull the end-2016 inflation forecast down by 0.6 percent compared to the October Inflation Report forecast. On the other hand, the portion of January 2015 public price adjustments which exceeds the inflation target is projected to push the end-2016 inflation forecast up by 0.4 percent. Another influential factor on forecasts in this period proved to be the rise in net minimum wages. Given the announced support by the government and the effects of this minimum wage rise on demand and costs to the employer, the end-2016 inflation forecast was revised upwards by 1 percent. Of this estimated effect of the minimum wage rise, 0.3 percent is attributed to the food inflation that was raised from 8 to 9 percent for 2016. Lastly, a higher-than-projected actual inflation rate at the end of 2015 compared to the October Inflation Report forecast and the rise in core inflation indicators are estimated to push the end-2016 inflation by 0.2 percent. In sum, of the total change in the year-end inflation forecast for 2016 compared to the previous reporting period, 1 percent stemmed from the minimum wage hike, 0.4 percent was caused by administered price changes that are above the inflation target and 0.2 percent was owed to the rise in the underlying trend of inflation. Meanwhile, the revision in the assumptions for TL-denominated oil and import prices had a downward effect by 0.6 points (Table 7.2.1).

Table 7.2.1.
Revisions in end-2016 and end-2017 Inflation Forecasts
(Percent)

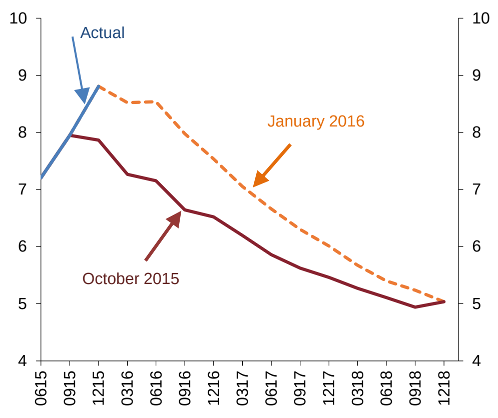
	2016	2017
Revisions in the Inter-Reporting Period	1.0	0.5
Sources of Revisions		
Minimum Wage Rise (Total)	1.0	0.2
Contribution to Food Inflation	0.3	0
Contribution to CPI (excl. unprocessed food and tobacco)	0.7	0.2
Import Prices (TL)	-0.6	0
Underlying Inflation (including exchange rate effect)	0.2	0.3
Administered Prices	0.4	0

Source: CBRT.

Moreover, of the 0.5 percent upward revision in end-2017 inflation forecast, which was stated as 5.5 percent in the October Inflation Report, 0.2 percent was caused by the lagged effects of the minimum wage increase and 0.3 percent stemmed from the upward revision in the end-2016 inflation forecast and the deterioration in the underlying trend of inflation (Table 7.2.1).

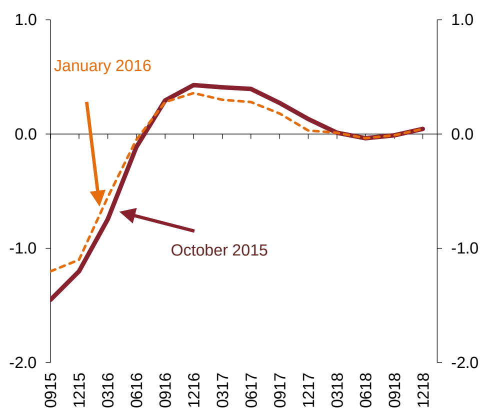
Revised output gap forecasts are displayed in Chart 7.2.3. As the national income realizations in the third quarter of 2015 turned out to be stronger than envisioned in the previous reporting period, output gap values pertaining to this period were revised slightly upwards. Likewise, the output gap forecasts for the fourth quarter of 2015 and the first and second quarters of 2016 were revised slightly upwards compared to the October Inflation Report.

Chart 7.2.2.
Inflation Forecasts



Source: TURKSTAT, CBRT.

Chart 7.2.3.
Output Gap Forecasts

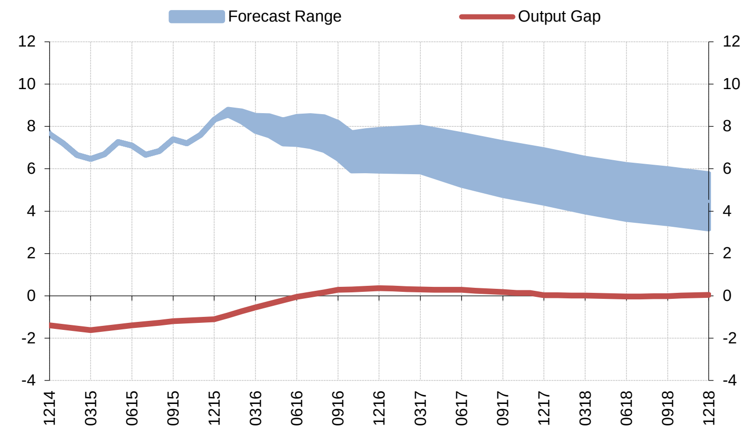


Source: CBRT.

Unpredictable price fluctuations in items beyond the monetary policy domain, such as unprocessed food and tobacco, are among major factors that cause a deviation in inflation forecasts. Hence, inflation forecasts excluding unprocessed food and tobacco prices are also announced.

Accordingly, inflation forecasts excluding unprocessed food, tobacco and alcoholic beverages are presented in Chart 7.2.4. The inflation indicator as measured above is expected to decline gradually to 4.5 percent.

Chart 7.2.4.
Inflation Forecast Excluding Unprocessed Food, Tobacco and Alcoholic Beverages*
(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. Accordingly, 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 7.2.2). Furthermore, the increase in the 24-month-ahead inflation expectations to around 7 percent necessitates 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
2016 Year-end	7.5	8.2	5.0
12-month-ahead	7.4	7.9	5.0
24-month-ahead	5.9	7.1	5.0

* January 2016 survey period results.
Source: CBRT.

Box 7.1 Sources of Revisions in end-2015 Inflation Forecasts

Throughout 2015, the main drivers behind the revisions in year-end inflation forecasts have been exchange rate movements and developments in import prices, particularly in crude oil. The depreciation of the Turkish lira, which has been induced by uncertainties over external financial markets and domestic conditions, drove the inflation rate higher through 2015, especially in items sensitive to exchange rate fluctuations. This also had an adverse effect on inflation expectations. The exchange rate driven upside effects on inflation was partially offset by the decline of import prices throughout the year. However, the larger-than-expected rise in food prices during the first and last quarters of 2015 pushed inflation higher. Thus, inflation increased to 8.8 percent at end-2015, overshooting the October Inflation Report forecast at 7.9 percent.

The CBRT is accountable to the public by publishing reports as per the inflation targeting regime. Accordingly, this box provides a summary of the revisions in the year-end inflation forecasts throughout 2015, along with the underlying reasons.

January Inflation Report

In January 2015, the medium-term forecasts were based on a framework in which the tight monetary policy stance would be maintained by keeping the yield curve almost flat and the annual loan growth rate would remain at reasonable levels amid the adopted macroprudential measures. Ending December 2014 at 8.2 percent, the consumer inflation was projected to be 5.5 percent at the end of 2015 given falling commodity prices, mostly oil prices. Base effects were estimated to be the main driver of inflation in 2015. Accordingly, annual inflation was projected to assume a downtrend until the third quarter and see a slight increase to 5.5 percent in the fourth quarter due to base effects.

Table.1. Inflation Report Assumptions in 2015

	January 2015	April 2015	July 2015	October 2015	Actual
Food Prices (Year-end Percent Change)	9.0	9.0	8.0	8.0	10.9
Export-Weighted Global Production Index (Average Annual Percent Change)	2.0	1.9	1.9	1.9	1.6*
Import Prices (Average Annual Percent Change, USD)	-7.3	-11.1	-12.8	-14.7	-15.7*
Brent Oil Prices (USD/bbl)	55	60	59	54	52

* Forecast.
Source: CBRT.

April Inflation Report

In the first quarter, the US dollar appreciated remarkably against many currencies, crude oil prices surpassed the trajectory envisaged in the January Inflation Report, and USD-denominated import prices stood below the projected path. The upward revision in oil prices was estimated to outweigh the effect of the downward revision in import prices through the remainder of the year. Despite the larger-than-anticipated rise in food prices during the first quarter, the food price assumption was kept at 9 percent given the likely correction in the second quarter, particularly in unprocessed food prices. Economic activity was estimated to grow more modestly in this quarter, thus leading to a downward revision in output gap forecasts.

Accordingly, the inflation forecast for end-2015 was revised upwards by 1.3 percentage points from 5.5 percent in the January Inflation Report to 6.8 percent. The upward revision in oil prices and the rise in TL-denominated import prices raised the year-end inflation forecast by 1.4 percentage points compared to the previous Report (Table 1). On the other hand, the downward revision in economic activity and the output gap lowered the end-2015 inflation forecast by 0.1 percent (Chart 1).

July Inflation Report

In the first quarter of 2015, economic activity proved stronger than projected in the April Inflation Report; hence the output gap was revised slightly upwards for the first quarter (Chart 1).

Global financial markets grew volatile and uncertain as of end-2014 until the second quarter of 2015. The vagueness regarding the Fed's policy rate hike was prominent in this quarter, with interest rates and exchange rates following a fluctuating course in tandem with the data releases for the US.

The annual consumer inflation declined further from 7.61 percent in the first quarter to 7.20 percent in the second quarter. Inflation declined due to food prices in the second quarter, yet the depreciation of the Turkish lira restricted this fall. In the second quarter, oil prices slightly exceeded the envisioned path, whereas import prices in USD stood a little below the path projected in the previous Report. Assumptions for the annual percentage change in average oil prices and import prices were revised downwards by 2 and 1.7 percent, respectively, for 2015 (Table 1). Parallel to this downward revision, the end-2015 inflation forecast was lowered by 0.1 percent. Unprocessed food prices saw a notable correction in the second quarter of 2015. Given the projections that this correction would continue, the food inflation assumption for end-2015 was revised downwards from 9 percent to 8 percent (Table 1). The change in the food price assumption brought the year-end inflation forecast down by 0.3 points. On the other hand, exchange rate movements delayed the improvement in core goods inflation, pushing the end- 2015 inflation forecast upwards by 0.5 points. As a result, the end-2015 inflation forecast was revised upwards by 0.1 percent from the April Inflation Report to 6.9 percent (Table 2 and Chart 2).

October Inflation Report

In the second quarter of 2015, economic activity followed a stronger course than envisioned in the July Inflation Report. The accelerating GDP growth in the second quarter was mostly attributed to the industrial value added. Accordingly, the output gap assumption was raised by 0.2 points for the second quarter of 2015 (Table 1).

The environment of uncertainty, which dominated the global financial markets throughout 2015, led to market volatility in the third quarter as well. Signs of slowdown in emerging economies spurred by the adverse outlook in China along with the perceived vagueness regarding the Fed's future monetary policy stood out as the prominent causes of volatility in financial markets.

The fall in international commodity prices, especially energy prices, continued at an increasing pace into the third quarter, causing the end-2015 oil price assumption to drop from 59 USD in July 2015 to 54 USD in October 2015. Likewise, the USD-denominated import prices, which were projected to decline by 12.8 percent in annual terms in the July Inflation Report, were assumed to decrease by 14.7 percent with a 1.9 percent downward revision (Table 1).

The food inflation assumption was kept unchanged from the July Inflation Report at 8 percent in 2015. In this reporting period, the rise in core inflation due to the exchange rate developments in the third quarter was expected to push the end-2015 inflation forecast up by 1.2 points. Yet, improvement of import prices pulled down year-end inflation forecast by 0.2 points. Accordingly, the end-2015 inflation forecast was revised upwards by 1 percent from the previous Report to 7.9 percent (Table 2 and Chart 2).

Table 2. Revisions in end-2015 Forecasts (Percent)

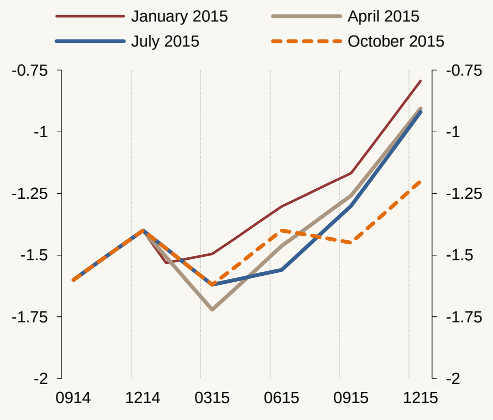
	January 2015	April 2015	July 2015	October 2015
Inflation Forecast	5.5	6.8	6.9	7.9
Sources of Revisions in the Inter-Reporting Period				
	April-January	**July-April**	**October-July**	**Actual-October**
Food	0.0	-0.3	0.0	0.7
Import Prices (TL)	1.4	-0.1	-0.2	0.0
Underlying Inflation (including exchange rate effect)	0.0	0.5	1.2	0.1
Output Gap	-0.1	0.0	0.0	0.1

Source: CBRT.

Actual Inflation at end-2015

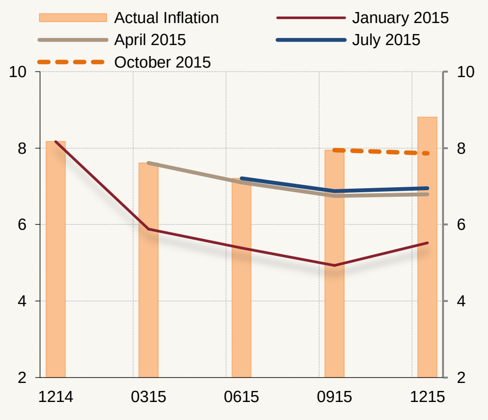
Food prices were the main drivers of the higher–than-expected inflation in the fourth quarter of 2015. The unanticipated upsurge of unprocessed food prices accounts for 0.7 points of the difference between October's end-2015 forecast at 7.9 percent and the actual year-end inflation at 8.8 percent. The GDP recorded a higher-than-expected growth in the third quarter. Thus, the output gap estimate was revised slightly upward from the October Inflation Report, which explains about 0.1 percent of the difference between October's end-2015 forecast (7.9 percent) and the actual year-end inflation (8.8 percent). The exchange rate driven deterioration of the pricing behavior continued into the fourth quarter, contributing by 0.1 percent to the deviation of the actual year-end inflation from October's end-2015 forecast (Table 2).

Chart 1. Revisions in Output Gap Forecasts in 2015



Source: CBRT.

Chart 2. Revisions in Inflation Forecasts in 2015



Source: Turkstat, CBRT.

In conclusion, the inflation forecast for end-2015 changed across reporting periods mainly due to developments in the exchange rate and import prices, while the unforeseen rise in food prices explains the deviation of the actual year-end inflation from the October's year-end forecast. The CBRT has clearly informed the public about the revisions in inflation forecasts accompanied by the reasons via Inflation Reports, thus fulfilling the liability of accountability on a regular basis (Table 2, Charts 1 and 2).