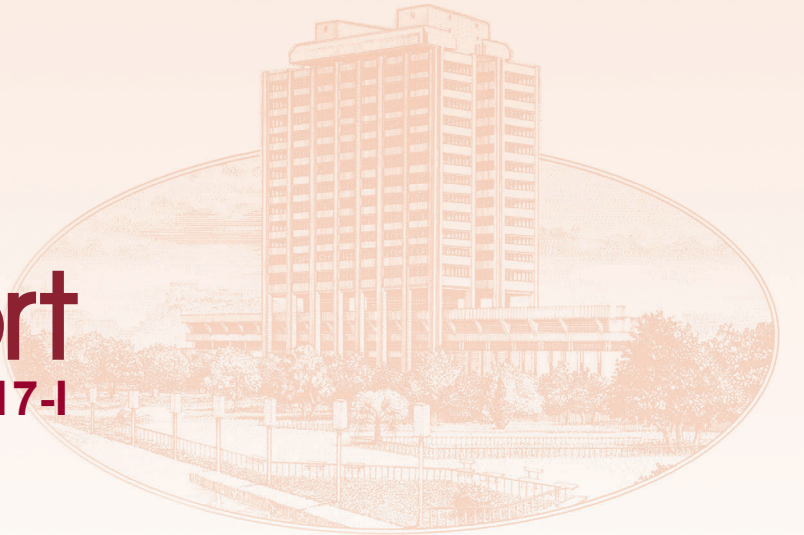


inflation report

2017-I

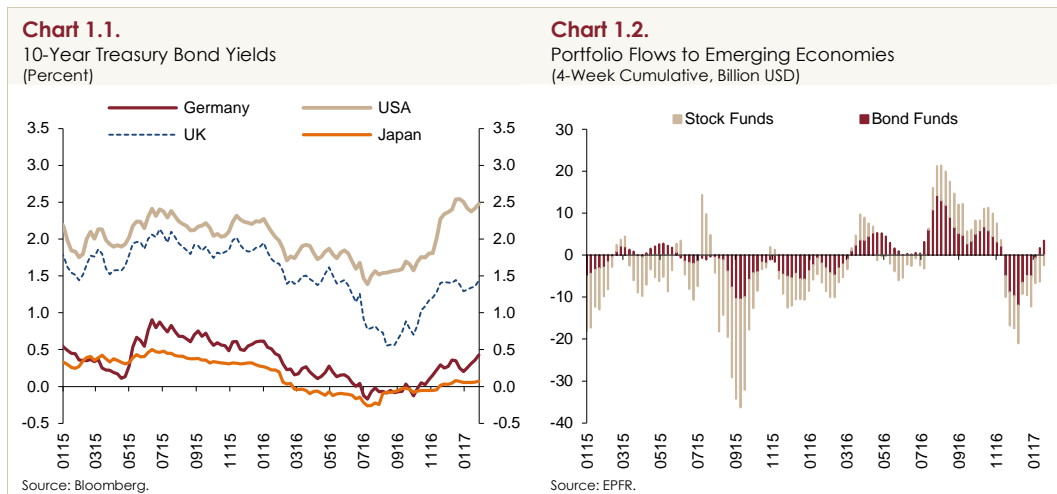


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1. Overview

Global economic uncertainty intensified following the US presidential election in November 2016, fostering prospects for accelerated growth in the US amid accommodative fiscal policies and increasing the possibility of a more aggressive Fed monetary tightening. Accordingly, interest rates in advanced economies surged in the fourth quarter and the US dollar appreciated (Chart 1.1). These developments directed capital away from emerging markets into advanced economies as of November (Chart 1.2).

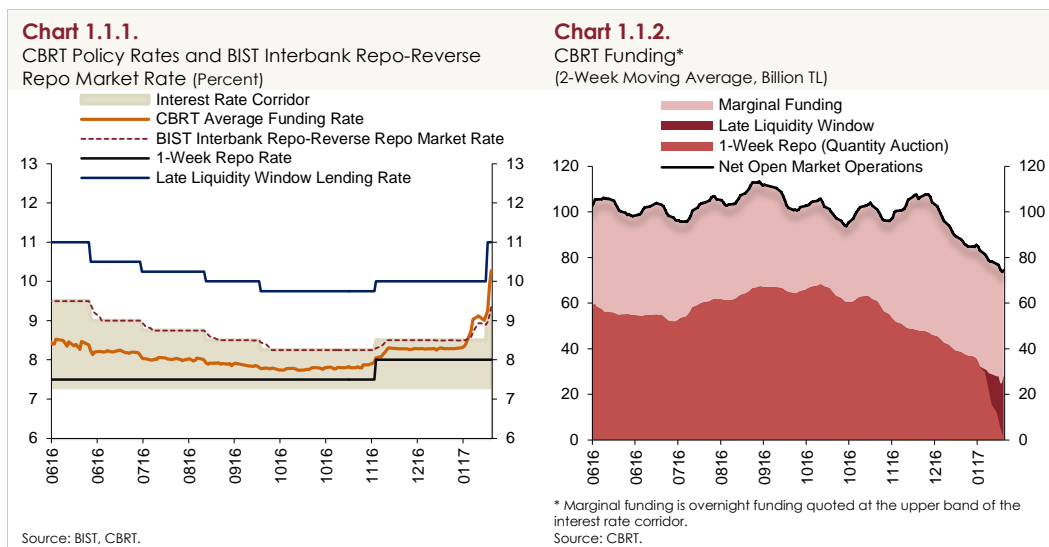


In addition to the volatility in global markets, both geopolitical tensions and domestic uncertainties sent domestic financial markets into a spin over the fourth quarter of 2016, causing exchange rate and market rates in Turkey to be affected more adversely compared to other emerging economies. In this period, all emerging markets, including Turkey, experienced portfolio outflows, which were more pronounced for bond markets than for stock markets. Credit use has shown some improvement thanks to macroprudential policies that support the financial system, the lagged effects of the CBRT's liquidity measures and public incentives. In the fourth quarter of 2016, loan growth remained on a moderate uptrend on the back of the recovery in consumer loans and TL commercial loans. Moreover, due to the government's loan program for businesses, interest rates on commercial loans to SMEs are on the decline.

Consumer inflation picked up from the previous quarter and ended the year at 8.53 percent amid the depreciation in the Turkish lira, tax adjustments and the partial increase in food prices. Economic activity posted a quarterly decline in the third quarter, as predicted in the October Inflation Report, while current indicators signal a modest recovery in the underlying trend for the fourth quarter. Domestic demand remained relatively subdued but the growing EU demand continues to stimulate exports. Thanks to accommodative measures and incentives, economic activity is likely to remain on a moderate upward track. Lastly, commodity prices are expected to have a gradually lessening positive effect on the current account in the upcoming period. However, the current account balance will continue to improve with the recovery in the net exports of goods.

1.1. Monetary Policy and Financial Conditions

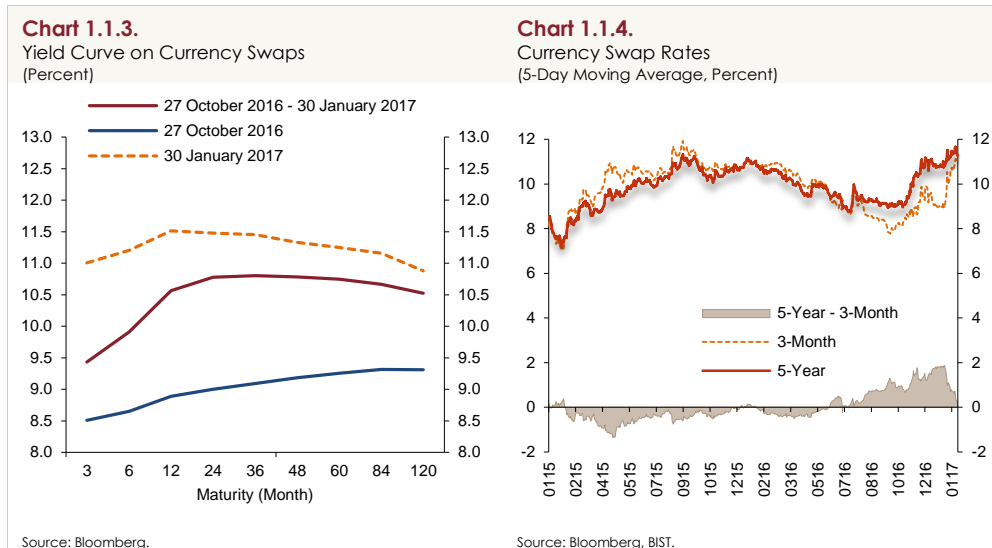
To contain the negative effects of global and domestic financial market volatilities on exchange rates and lending standards, the CBRT maintained a stabilizing stance for FX liquidity and a supportive stance for financial stability in the final quarter of 2016. Moreover, in order to restrict the adverse impact of exchange rate developments 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 (Chart 1.1.1). In December, interest rates were kept unchanged to monitor the stabilizing effects of aggregate demand on upside risks to inflation due to exchange rate developments and rising oil prices.



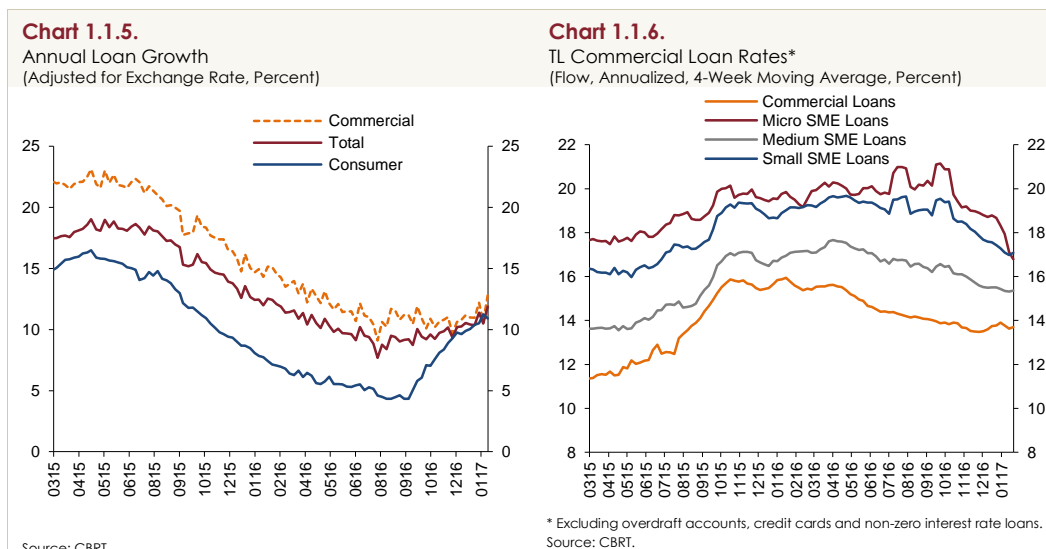
The CBRT adopted a series of liquidity measures in January, particularly against the excessive volatility in the foreign exchange market. Accordingly, 1-week repo auctions have been suspended as of 12 January 2017. Given restrictions on marginal funding, a part of the net funding need of the system has been provided through the late liquidity window as of 16 January on any day deemed necessary (Chart 1.1.2). This in turn led to a rise in the CBRT average funding rate and the BIST Repo-Reverse Repo Market rate (Chart 1.1.1). Furthermore, with the aim of enhancing flexibility and instrument diversity of the TL and FX liquidity management, Foreign Exchange Deposits against Turkish Lira Deposits Market has been put in place. At the MPC meeting on 24 January, the CBRT decided to tighten the monetary policy further in order to contain the deterioration in the inflation outlook driven by the excessive fluctuations in exchange rates. Thus, the marginal funding rate and the late liquidity window lending rate were hiked by 75 and 100 basis points to 9.25 and 11 percent, respectively.

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.

Although the yield curve shifted upwards in all maturities from the previous reporting period amid mounting global, geopolitical and domestic uncertainties and higher inflation expectations, it has also become flatter due to the recent monetary tightening (Charts 1.1.3 and 1.1.4).



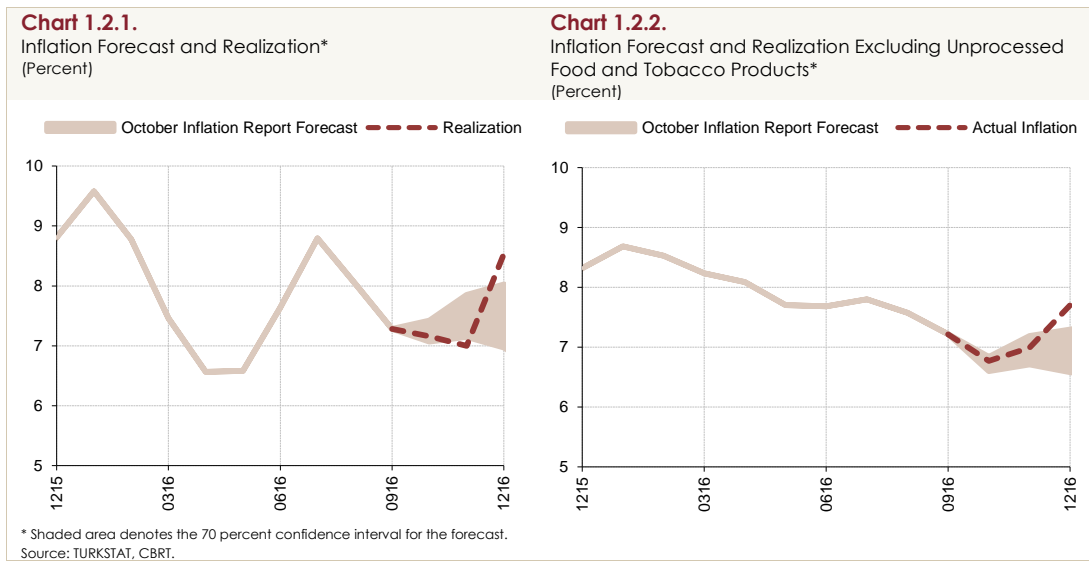
The annual growth rate of loans extended to the non-financial sector picked up in the fourth quarter of 2016 owing to accommodative macroprudential measures, the lagged effects of the CBRT's liquidity measures and government incentives (Chart 1.1.5). Across subcategories, commercial loans inched up on the back of TL loans, while consumer loans grew at a faster pace amid recovering consumer confidence and lagged effects of new measures. This upsurge was spread across all types of consumer loans. Lending standards remained rigid due to tighter domestic and external funding conditions in the fourth quarter of 2016. Meanwhile, interest rates on TL commercial loans to SMEs saw a decline in the final quarter thanks to accommodative government policies (Chart 1.1.6).



1.2. Macroeconomic Developments and Main Assumptions

Inflation

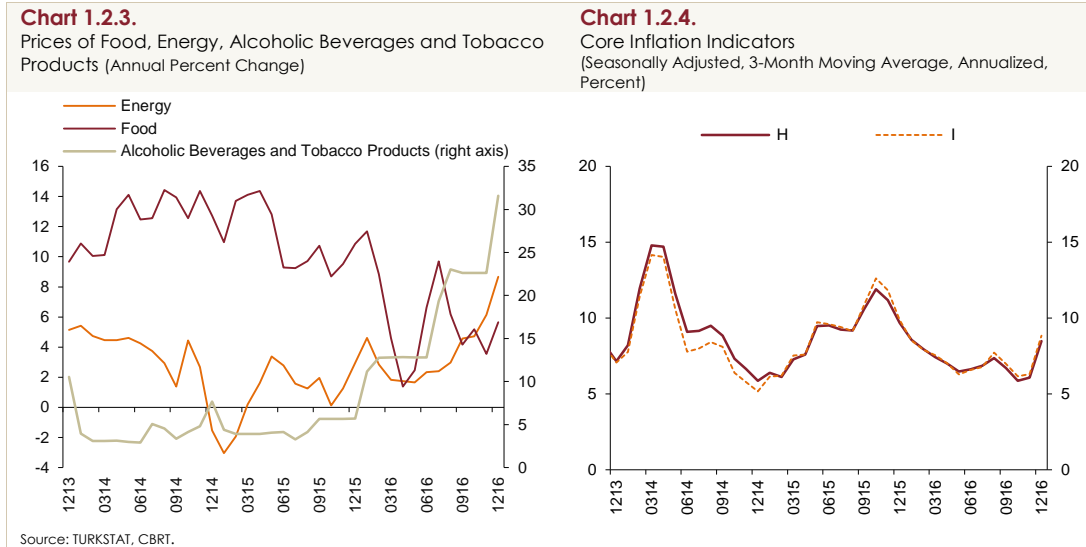
Having gradually slowed down after July, consumer inflation reached 7 percent in November, remaining close to the lower band of the October Inflation Report forecast. However, largely due to the volatility in unprocessed food prices and adjustments in the prices of tobacco products, consumer inflation ended the year at 8.53 percent, exceeding the upper band of the forecast (Chart 1.2.1). Exchange rate depreciation and tax adjustments were also influential on inflation excluding unprocessed food and tobacco products, which posted a smaller upturn (Chart 1.2.2).



The effects of the large depreciation in the Turkish lira were firstly reflected in energy prices, which are subject to a faster exchange rate pass-through. Moreover, with the additional upward pressure from rising crude oil prices, energy inflation increased sharply (Chart 1.2.3). Higher exchange rates put further upward pressure on core goods inflation, which, having followed a downward trend until November, surged in December owing also to tax increases.

Recent tax adjustments, especially in tobacco products, had a significant upward effect on inflation. The SCT on automobiles was adjusted in November while the SCT on alcoholic beverages and tobacco products was raised for the second time in December after the January 2016 hike (Chart 1.2.3). Thus, tax adjustments and administered prices made a historically high contribution to inflation in 2016.

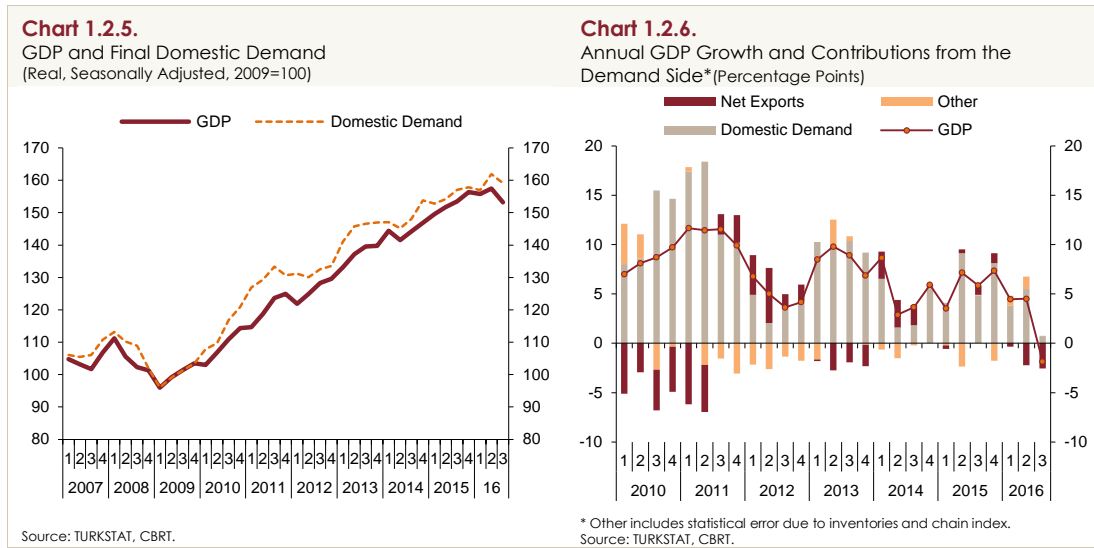
Food inflation followed a modest path until November, making a relatively smaller contribution to inflation than in previous years. In December, however, the plunging Turkish lira and adverse weather conditions pushed food inflation higher (Chart 1.2.3). Despite this increase, owing both to the slump in tourism and the measures in effect, annual food inflation ended the year at 5.65 percent, which is a historically low rate. Annual food inflation remained mostly in line with the projections of the October Inflation Report.



In the fourth quarter, prices varied across subcategories of core goods, with inflation slowing in sectors such as clothing and furniture and rising in sectors posting strong domestic sales. Despite the favorable food inflation outlook and weak demand conditions, services inflation remained elevated amid rising real unit labor costs and higher rents, especially in Istanbul. Pressures from producer prices were more severe towards the end of the year, with diffusion indices signaling a growing tendency to hike prices, especially in December. Accordingly, the underlying core inflation indicators turned upward as of December (Chart 1.2.4). A similar upturn was recorded in the alternative core inflation indicators followed by the CBRT. In short, despite the downward pressure from economic activity, inflation outlook recently deteriorated due to tax hikes, strong cost pressures and the partial increase in food prices.

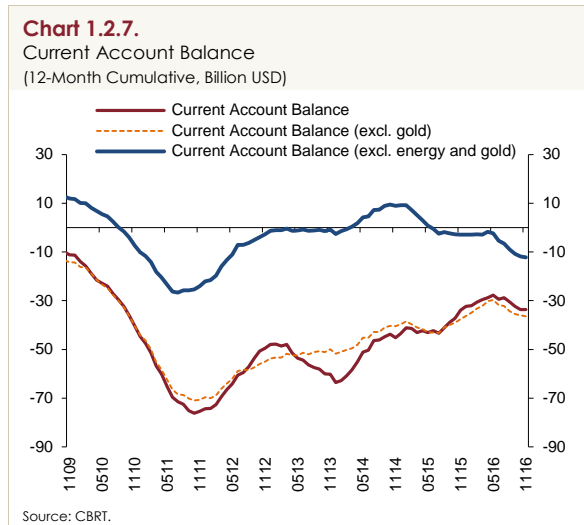
Supply and Demand

Economic activity slowed down significantly in the third quarter. The GDP declined by 2.7 and 1.8 percent in quarter-on-quarter and year-on-year terms, respectively (Chart 1.2.5). Having already slowed due to dropping tourism revenues, the economy decelerated further as a result of the negative repercussions of the July incidents on domestic demand (Chart 1.2.6). The marked increase in public consumption spending by 23.8 percent in annual terms and the favorable outlook of the construction industry contained the negative effects of the fall in other domestic demand components on growth. In addition, the loss of working days driven by extended religious holidays and the mid-July turmoil weighed on economic activity. Therefore, despite slowing down, the underlying trend in economic activity is assessed to be stronger than implied by the currently available data. Adjusted for working day losses as well as normal calendar effects, economic activity is estimated to have registered a limited growth rate rather than a contraction in the third quarter on an annual basis.



Indicators for the fourth quarter of 2016 point to a mild growth in economic activity, apart from the technical recovery due to the compensation of the third quarter's working day losses. In addition to increased lending spurred by new measures and incentives, the demand brought forward for durable goods stimulated the private consumption in the third quarter. However, the demand for goods excluding durables remained weak, preventing the recovery in private consumption demand from spreading across sectors in the fourth quarter. Meanwhile, investment is recovering at a slower pace than consumption spending. Against this background, domestic demand is expected to pick up slightly in annual terms in the final quarter. Although terms of trade are likely to become less favorable for the current account deficit in the coming months, net exports will contribute to a recovery in quarterly growth rate thanks to restored relations with Russia and the depreciation of the Turkish lira (Chart 1.2.7).

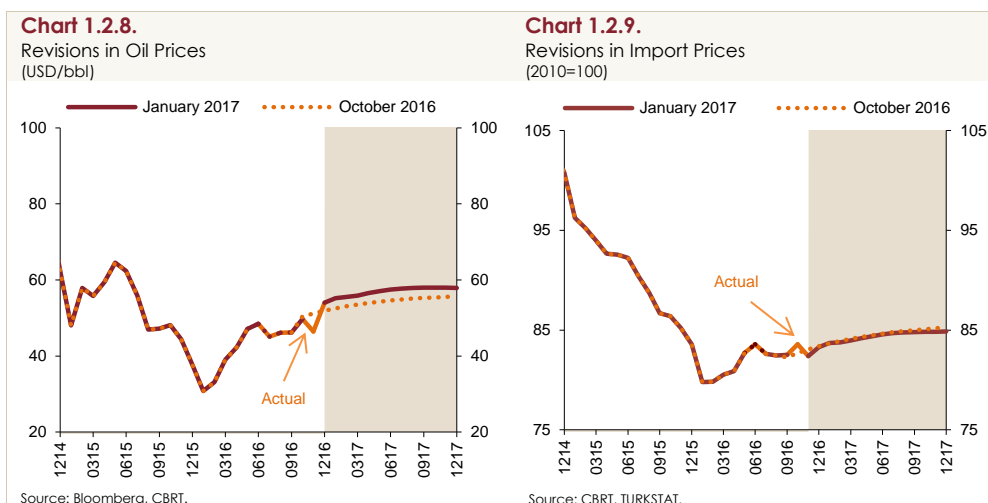
In the forthcoming period, despite the lack of a signal for improvement in the prospects for tourism, the mild recovery trend in economic activity is expected to continue owing to the recent accommodative incentives and measures. However, the heightened sense of uncertainty may restrict domestic demand both from consumption and investment channels. The global growth outlook, uncertainties regarding monetary policies of advanced economies, the weak course of capital flows and geopolitical developments pose a downside risk to growth in 2017 as well. Meanwhile, the improvement in the current account balance is expected to continue. Despite the rise in commodity prices, the mild growth outlook is estimated to limit the increase in imports in the upcoming period. Notwithstanding the restrictive impact of geopolitical developments, the current account balance is projected to improve in 2017 due to the normalization of the relations with neighboring countries, the sustained increase in the EU demand and the flexibility in diversifying exports.



Oil, Import and Food Prices

Assumptions for crude oil prices, which were 54 USD in the October Inflation Report, were revised upwards to 57 USD for 2017 in light of the recent developments. Meanwhile, assumptions for USD-denominated import prices saw a limited downward revision for 2017 due to the relatively low course of commodity prices excluding crude oil (Chart 1.2.8). However, in TL terms, import prices also witnessed a notable upward revision compared to the previous reporting period.

Food inflation, which was estimated to be 6 percent at the end of 2016 in the October Inflation Report, remained broadly consistent with the projections standing 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 depreciation in the Turkish lira, food inflation is likely to increase 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 and Agricultural Products Markets Monitoring and Evaluation Committee (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 as 7 percent.

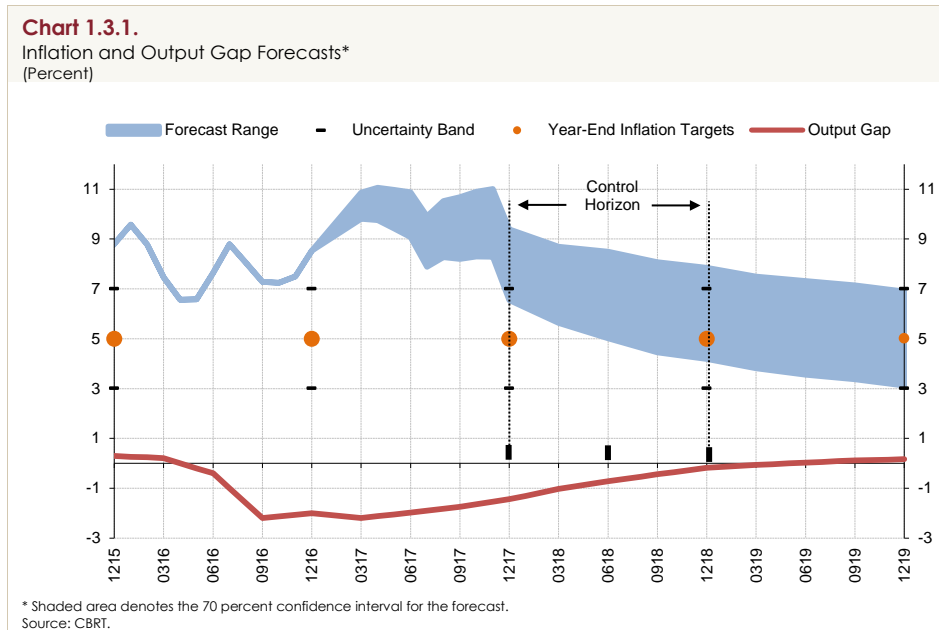


Fiscal Policy and Tax Adjustments

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.

1.3. Inflation and Monetary Policy Outlook

Given a tight policy stance that focuses on bringing inflation down, inflation is estimated to converge gradually 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 1.3.1).



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. Assumptions for TL-denominated import prices for the upcoming period were subject to a sizeable upward revision compared to the previous reporting period. This revision is estimated to drive the year-end inflation forecast for end-2017 upwards by 1.3 points compared to the previous Report. On the other hand, recent indicators suggest that the recovery in domestic demand may prove slower in 2017 than envisioned in the October Inflation Report. Accordingly, output gap forecasts were revised downwards, which 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 actual inflation at end-2016 than projected in the October

Inflation Report and the rise in core inflation indicators are estimated to drive inflation at end-2017 upwards by 0.2 points. Accordingly, the consumer inflation forecast for end-2017, which was 6.5 percent 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 additional 1-point to end-2018 forecast from the October Inflation Report was caused by the upward revision in TL-denominated import prices and the rise in the underlying trend of inflation by 1 point and 0.2 points respectively, while the downward revision in output gap is projected to offset these effects by 0.2 points. 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.

1.4. 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.

2. International Economic Developments

After a modest post-crisis recovery, the global economy continued to grow by about 3 percent in the third quarter of 2016. The uncertainty over the global growth outlook was aggravated further in the final quarter, largely due to advanced economies. The UK's exit from the EU (Brexit) and its implications for the global economy remain unclear, while the result of the US presidential election heightened the uncertainty about economic policy in the US. These two incidences, which are likely to trigger some policy responses in other countries through spillover effects, will determine the future path of global economic policies.

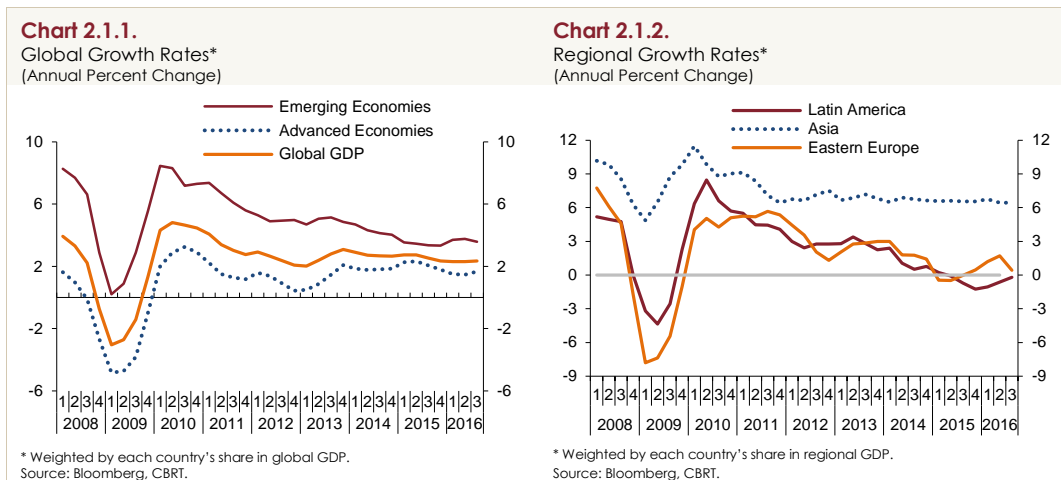
The uncertainty surrounding global economic policies is likely to have implications through various channels (Box 2.1). Despite the difficulty of estimating the final impact of the transmission channels on the global economy, recent developments had their first-round effects on the global financial markets, with interest rates rising and assets being re-priced in the fourth quarter. Long-term bond rates rallied across advanced economies, leading to steepening and upward-shifting yield curves in emerging economies amid increasing prospects of a tighter post-election US monetary policy and the ensuing December policy rate hike by the Fed.

Higher interest rates in advanced economies led to massive portfolio outflows from emerging economies in the last quarter, causing local currencies to depreciate. This is likely to pose risks to financial stability, particularly across emerging economies.

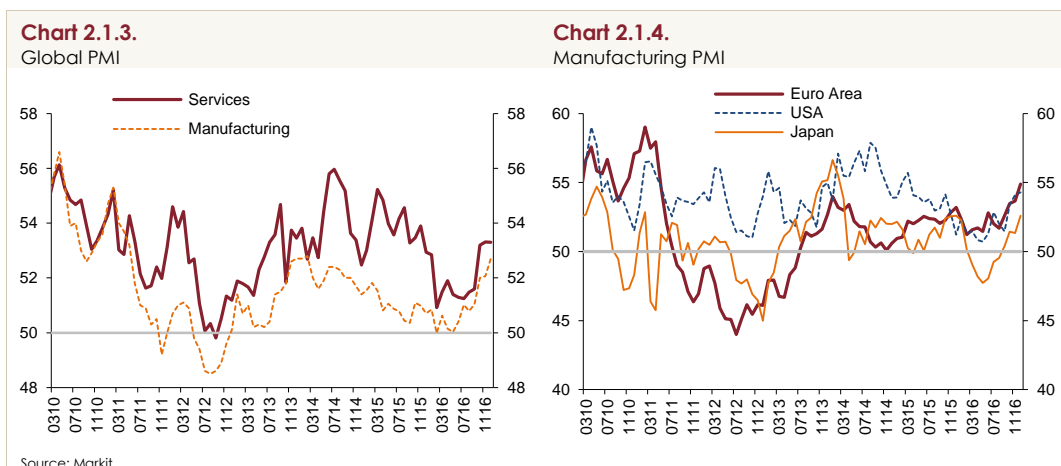
The effective use of fiscal policy is crucial for the global economy to escape from the low-growth trap in an environment of already existing accommodative monetary policies. It is expected that the global economy could benefit from a strengthening US growth in the upcoming period assuming that the Trump administration opts for expansionary fiscal policies to stimulate domestic investment and consumption. Similarly, the likely adoption of expansionary fiscal policies in other advanced economies as well as China's fiscal stimulus packages may also boost the global economy. However, the growing tendency for foreign trade protectionism may put severe downward pressure on the currently sluggish global trade volume; thus, on the global growth, and may therefore offset the benefits from expansionary fiscal policies. In this regard, macroeconomic policies should be used jointly and effectively to stimulate aggregate demand in the short term and boost potential growth in the long term, which would eventually help to veer from the low-growth path.

2.1. Global Growth

Global economic growth performed well in the third quarter of 2016, gaining momentum across advanced economies and slowing across emerging economies (Chart 2.1.1). Among advanced economies, the US, the Euro area, the UK and Japan posted accelerated growth, with the US and the UK economies growing at a particularly stronger pace compared to previous periods.



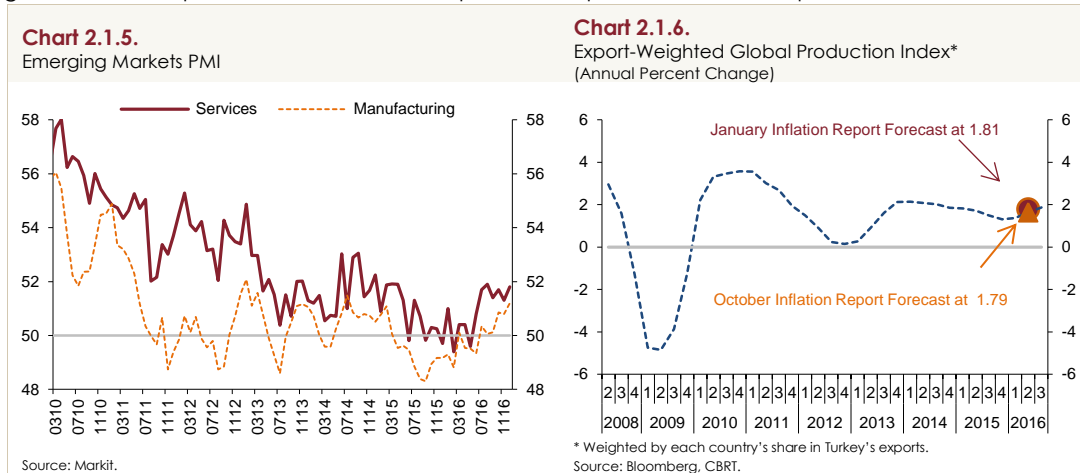
In the third quarter of 2016, emerging economies, excluding China and India, suffered from poor growth performances, which weighed heavily on emerging market growth. The abating, yet ongoing, recession in Russia and Brazil, the economic slowdown in Eastern European economies such as Romania, Hungary and Czechia, and the contraction in Turkey caused emerging markets to grow at a slower pace. On the other hand, emerging Asia's growth remained steady, while Eastern European growth was significantly slower; yet, Latin America posted a more robust growth compared to the previous quarter (Chart 2.1.2).



PMI data for the fourth quarter signal a more favorable economic growth compared to previous periods (Charts 2.1.3 and 2.1.4). Both PMI and other leading indicators suggest that growth is likely to gain momentum in the US, the Euro area and Japan in the last quarter.

In the final quarter of 2016, the emerging markets PMI increased quarter-on-quarter for the manufacturing, but remained horizontal for services (Chart 2.1.5). The manufacturing PMI registered a quarterly upturn in Eastern European countries such as Poland, Czechia and Russia. As a major energy-exporter, Russia is likely to benefit from the fourth-quarter energy price hike. However, the manufacturing PMI for Latin America, especially Mexico, deteriorated in the fourth quarter, particularly in December. Therefore, emerging Latin America may see a more subdued economic growth in the final quarter. The election of Trump, who advocated protectionist foreign trade policies throughout his

presidential campaigns, the Fed's December rate hike and the subsequent accelerated capital outflows from emerging markets were the key drivers of the weakening Latin American growth. On the other hand, the manufacturing PMI increased quarter-on-quarter for China but remained flat for India in the fourth quarter. In this period, the Chinese economy grew at a slightly accelerated pace by 6.8 percent in year-on-year terms. Thus, the growth performance of Asian economies is expected to register a minor improvement in the fourth quarter compared to the third quarter of 2016.



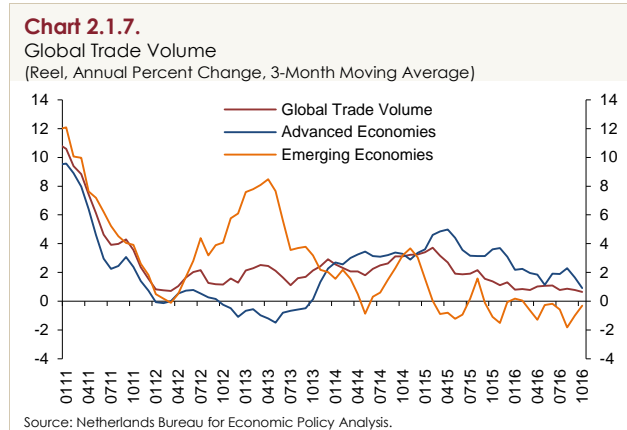
Against this backdrop, global economic activity is expected to accelerate in the fourth quarter of 2016, particularly on the back of advanced economies, while emerging economies will make a smaller contribution to global growth. According to January's Consensus Forecasts for end-2016 and end-2017, global growth remained unchanged from the previous reporting period (Table 2.1.1). Across advanced economies, forecasts were revised upward for the US, the UK and Japan, yet hint at only a modest rise for the Euro area for end-2017. On the emerging economies front, growth forecasts for Latin America and India were revised down from the previous reporting period (Table 2.1.1). Accordingly, the 2016 growth rate of the export-weighted global production index, which is revised by the January growth forecasts, has barely changed since the October Inflation Report (Chart 2.1.6). Therefore, the external demand outlook for Turkey remained horizontal in the fourth quarter.

Table 2.1.1.
Growth Forecasts for end-2016 and end-2017
(Average Annual Percent Change)

	October		January	
	2016	2017	2016	2017
Global	2.5	2.8	2.5	2.8
<i>Advanced Economies</i>				
USA	1.5	2.2	1.6	2.3
Euro Area	1.6	1.3	1.6	1.4
Germany	1.8	1.3	1.8	1.3
France	1.3	1.2	1.2	1.3
Italy	0.8	0.7	0.9	0.7
Spain	3.1	2.1	3.2	2.4
Japan	0.6	0.9	0.9	1.1
UK	1.9	0.9	2.0	1.4
<i>Emerging Economies</i>				
Asia-Pacific	5.7	5.6	5.7	5.6
China	6.6	6.3	6.7	6.4
India	7.6	7.7	6.8	7.5
Latin America	-0.3	2.1	-0.5	1.7
Brazil	-3.2	1.2	-3.4	0.7
Eastern Europe	1.5	2.3	1.3	2.2
Russia	-0.6	1.2	-0.6	1.1

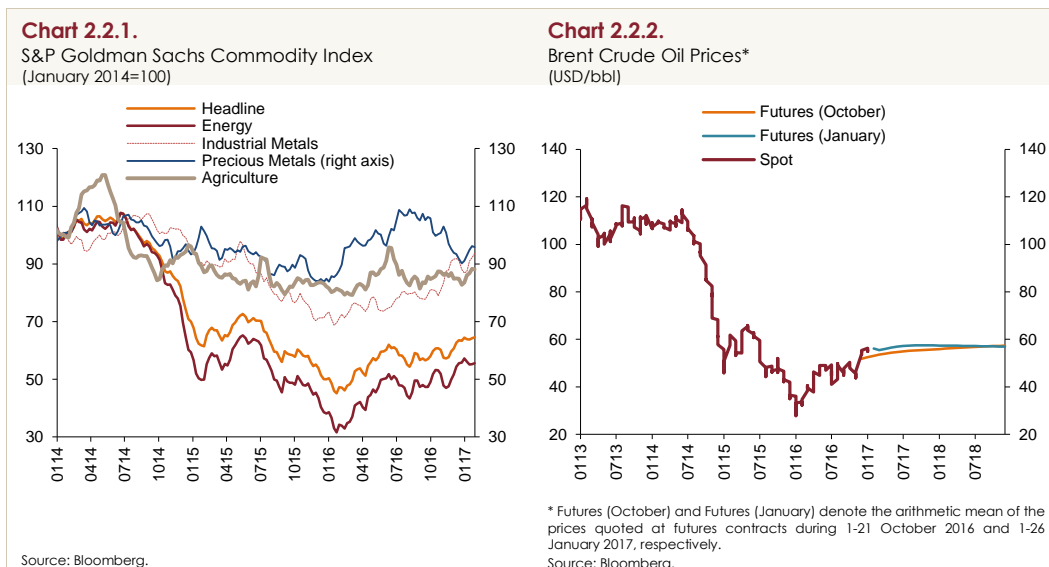
Source: Consensus Forecasts.

Global trade continues to expand at a sluggish rate amid the anemic global recovery and weak investments since the financial crisis (Chart 2.1.7). As a key driver of global trade, China's gradual shift from investment-led growth to consumption-led growth since 2011 remains a drag on global trade. Additionally, the growing protectionism in foreign trade, especially in advanced economies, appears to be one of the major hurdles to global trade growth.



2.2. Commodity Prices and Global Inflation

The headline commodity index edged higher in the fourth quarter of 2016, with energy and industrial metals indices up by 9.8 and 8.9 percent, respectively, by an average increase of 5.7 percent from a quarter ago. The rising construction demand in China and prospects for stronger infrastructure investment in the post-election US were the main drivers of higher industrial metal prices. The upsurge in energy prices, on the other hand, was due to the crude oil price jump after the end-November OPEC meeting. However, having fallen in the summer amid a record-high output in 2016, global agricultural prices remained flat on the back of high level of inventories, despite the fourth-quarter's harsh weather conditions. Mounting prospects of post-election stimulus packages in the US as well as the Fed's December rate hike and a more hawkish tone on monetary policy for the coming months caused gold prices to plunge toward the end of the year. Thus, the precious metals index was down 9.4 percent quarter-on-quarter in the fourth quarter (Chart 2.2.1).

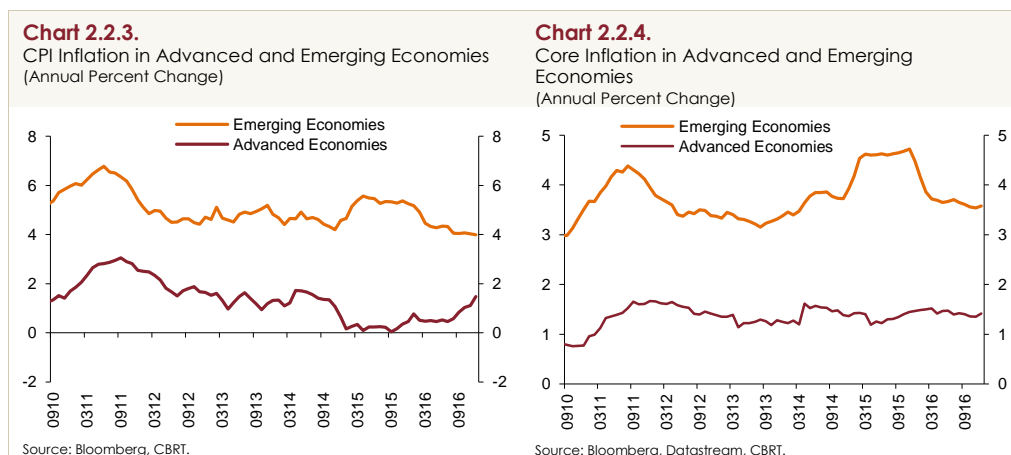


At its regular meeting on 30 November 2016, the OPEC decided to limit production in order to balance the oil market. The decision, to be effective as of January 2017, was endorsed by all 14 OPEC members, and also welcomed by other non-OPEC oil-exporting countries, particularly Russia, causing oil prices to jump after the meeting. After ranging between 40 to 50 USD in the third quarter of 2016, crude oil prices broke above 50 USD per barrel in the final quarter. The Brent crude oil price per barrel hit 55.5 USD as of 26 January 2017. Accordingly, the December 2017 contract for Brent crude oil was traded at 57.4 USD on average as of 26 January 2017, up from an average of 55.8 USD in the previous reporting period (Chart 2.2.2). However, there are both supply and demand-side risks that may limit the rise in crude oil prices in the upcoming period.

The OPEC production cut deal was determined to last for the first six months of 2017, but decided to be extended for another six months, if necessary. Saudi Arabia, the United Arab Emirates and Kuwait agreed to shoulder most of the output cut. Saudi Arabia offered to cut its production further to help bring the market into balance. Meanwhile, Libya, Nigeria and Iran were exempt from this deal. However, historically, OPEC members have usually escaped from quotas and have continued to overproduce to favor their fiscal balances. Moreover, after the plunge in crude oil prices, the US continues to ramp up shale oil amid lower extraction costs backed by technological breakthroughs. In fact, after hitting bottom in May 2016, the oil rig count recovered in line with rising oil prices, ending 2016 with a 50 percent increase.

On the demand side, the 2017 growth forecasts for oil demand were kept unchanged by the International Energy Agency. Especially, the assumptions for demand growth in China and India were left overly conservative. The crude oil demand is expected to decline should the protectionist foreign policies across advanced economies aggravate and dampen the already slow global trade in 2017. In fact, Brent crude oil prices at December 2017 and December 2018 contracts also remain flat (Chart 2.2.2). In short, oil prices may rise only modestly in the upcoming period, with the post-OPEC meeting upswing likely to be short-lived.

In the inter-reporting period, headline inflation rates increased in advanced economies but edged down in emerging economies (Chart 2.2.3). Meanwhile, core inflation rates inched up in advanced economies but were slightly down in emerging economies (Chart 2.2.4). Inflation forecasts for end-2017 were revised upward from the previous reporting period for both advanced and emerging economies (Table 2.2.1).



On the advanced economies front, the fourth-quarter rise in inflation was driven by the more benign economic outlook and soaring oil prices. The US dollar began to appreciate amid a post-election proposal for fiscal stimulus and expectations over the Fed's policies. In the upcoming period, Euro area inflation rates may also see a minor rise on the back of moderately rising energy prices, while Japan's medium-term inflation rate is likely to remain below the target for quite some time. On the other hand, due to the depreciation of the British sterling fueled by the uncertainty over the UK-EU relations following Brexit, the UK's inflation rate is estimated to hover above the 2-percent target in 2017 and 2018, before returning to the target afterwards. Major factors to impose upside risks to global inflation are possible hikes in commodity prices, particularly for oil, prospects for the near-term expansionary policies in the US, possible currency depreciations across emerging economies triggered by expectations over the Fed's decisions and protectionist measures to curb foreign trade on a global scale.

Table 2.2.1.

Inflation Forecasts for end-2017
(Average Annual Percent Change)

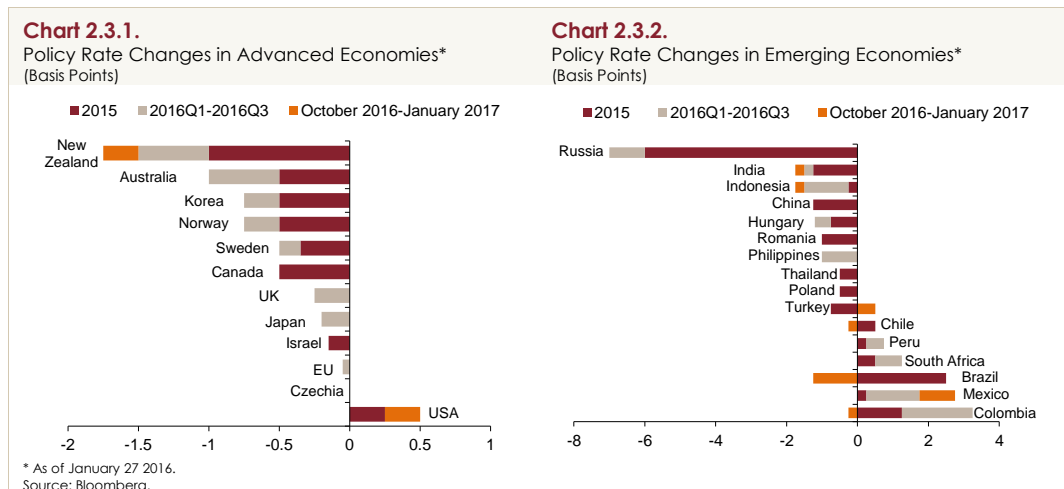
	October 2016	January 2017
Global	2.8	3.0
<i>Advanced Economies</i>		
USA	2.3	2.4
Euro Area	1.3	1.4
Germany	1.5	1.7
France	1.2	1.2
Italy	0.8	0.9
Spain	1.3	1.6
Greece	0.8	0.7
UK	2.3	2.5
Japan	0.4	0.6
<i>Emerging Economies</i>		
Asia-Pacific	2.3	2.2
China	1.9	2.2
India	5.1	5.0
Latin America	8.9	10.9
Brazil*	5.2	4.9
Eastern Europe	4.9	5.0
Russia*	5.3	4.8

* December-on-December.

Source: Consensus Forecasts.

2.3. Global Monetary Policy

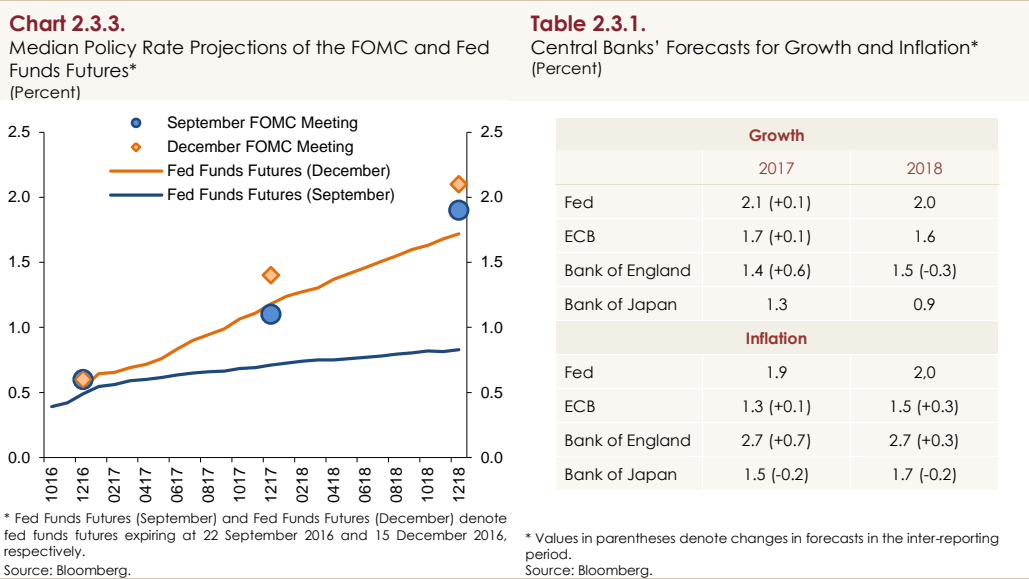
In the final quarter of the year, inflation expectations in the US were driven higher by a stronger recovery in the labor market, the accelerated pace of economic growth and prospects for the adoption of expansionary fiscal policies after the presidential election. Accordingly, the Fed delivered a policy rate hike by 25 basis points in December and also tightened its policy stance for 2017. Following the US presidential election, the Reserve Bank of New Zealand lowered its policy rate by 25 basis points, while other major central banks kept their policy rates unchanged (Chart 2.3.1). On the emerging economies front, the Reserve Bank of India and Bank Indonesia cut their policy rates by 25 basis points in October. Meanwhile, in Mexico and Turkey, the currencies of which were most adversely affected in the aftermath of the US elections, policy rates were hiked by 100 and 50 basis points, respectively, as opposed to Brazil, Colombia and Chile, where the respective central banks reduced their policy rates after the election (Chart 2.3.2).



The Fed decided to increase its benchmark policy rate at the December meeting, as expected, and tightened its policy stance and forecasts for 2017 and beyond. Policy rate expectations signaled that interest rates would rise at a faster pace than previously projected and the median projection has been raised to three rate hikes in 2017, from the formerly predicted two rate hikes. In addition, in the inter-reporting period, the policy rate path implied by the Fed funds futures has moved closer to the policy rate projections of the FOMC (Chart 2.3.3). This indicates that market expectations have been more compatible with the policy rate projections of the FOMC. Meanwhile, the Bank of England delivered less monetary easing compared to the previous reporting period. Accordingly, in the November 2016 issue of the Inflation Report, the Bank of England has scrapped plans for a previously signaled policy rate cut against the deteriorated inflation outlook due to heightening exchange rate volatility and the depreciation of the British sterling led by the Brexit-driven uncertainty. Similarly, the Bank of Japan kept its policy rates constant despite expectations for further cuts in the already negative rate. The ECB, on the other hand, extended the bond-buying program, which was due to end in March 2017, until the end of 2017, but cut monthly purchases as of April from 80 billion EUR to 60 billion EUR. It was stated by the ECB that this reduction should not be interpreted as a tightening since the total amount of bonds to be purchased is increased.

These policy decisions imply a relatively tighter monetary policy stance for these major central banks compared to the previous period. Recently, there have been frequent debates about potential financial market fragilities in case advanced economies adhere to near-zero and even negative interest rates as well as large-scale asset purchases for a prolonged period of time. In this context, though uttered only by the Fed, a strong tendency has been observed in monetary policy normalization. Economic data for advanced economies, except the US, have yet to provide evidence for such a normalization, but the latest forecasts of central banks point to both an upward revision in the growth outlook and inflation rates nearing targets (Table 2.3.1).¹

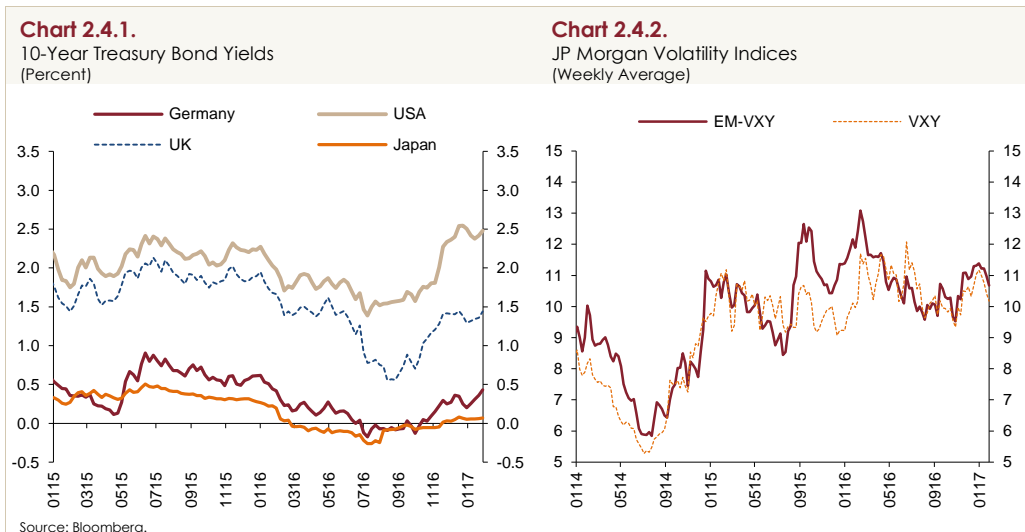
¹ The Bank of Japan's latest forecasts are as of October and signal a drop in inflation, but the MPC statement in December indicates improved economic outlook and increased inflation expectations, with the new forecasts to be released on 31 January.



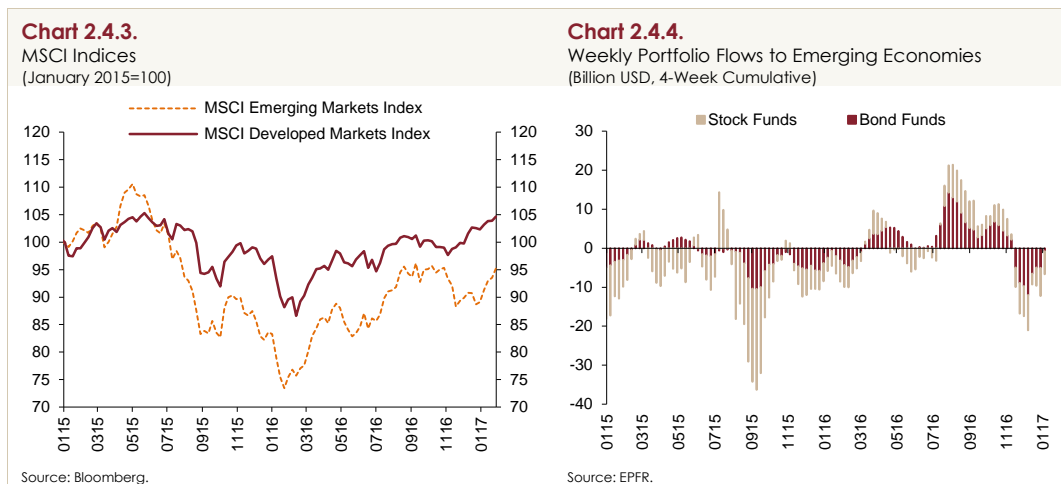
Against this background, emerging economies are likely to face stronger challenges with regards to their monetary policies. Expectations for monetary tightening in advanced economies lead to higher inflation in emerging economies through increased import prices amid depreciated currencies, while higher interest rates increase borrowing costs, thus pose an additional burden on emerging economies, relying on external funds. Moreover, the uncertainty over fiscal and foreign trade policies to be adopted by the new US administration is another factor to hinder proper policy responses in emerging economies.

2.4. Global Risk Indicators and Portfolio Flows

In the fourth quarter of 2016, long-term interest rates in advanced economies were mainly driven by the Fed policy rate (Chart 2.4.1). The rise in long-term interest rates was induced by the anticipation of a tighter Fed monetary policy in 2017 and the expected demand boost to be fueled by the US economy.



In the final quarter of 2016, global financial markets were dominated by the US presidential election and the Fed's policy rate decision. The uncertainty and the subsequent volatility that surrounded global markets before the November election mounted after Trump's win and the announcement of the fiscal spending proposal (Chart 2.4.2). Moreover, the early-December political turmoil in Italy and escalating Euro area banking troubles, again led by Italy, sent global financial markets into a tailspin in the fourth quarter. All in all, global financial markets fluctuated dramatically, while global funds flew away from emerging economies and into the US. Thus, stock prices tumbled in emerging economies but picked up in advanced economies over the fourth quarter (Chart 2.4.3).



The third quarter's portfolio inflows towards emerging markets continued into October; whereas in November and December, emerging economies saw massive outflows. Along with the long-awaited Fed rate hike in December, the growing sentiment of a post-election tightening cycle prompted most of the portfolio outflows. Accordingly, both bond and stock markets suffered continuous outflows from the week after the election until the end of December (Chart 2.4.4). Across regions, the heaviest losses occurred in Asia and Latin America (Table 2.4.1). Outflows in Asia were mostly from stock markets and driven by China, while in Latin America, outflows were largely from bond markets and led by Mexico. As of January 2017, emerging stock markets continue to suffer from outflows, while emerging bond markets have enjoyed some inflows. These inflows were led by Brazil in Latin America and Russia in the Emerging Europe. Investors fleeing emerging stock markets after November shifted mostly towards US stocks.

Table 2.4.1.
Composition and Regional Distribution of Fund Flows to Emerging Economies
(Quarterly, Billion USD)

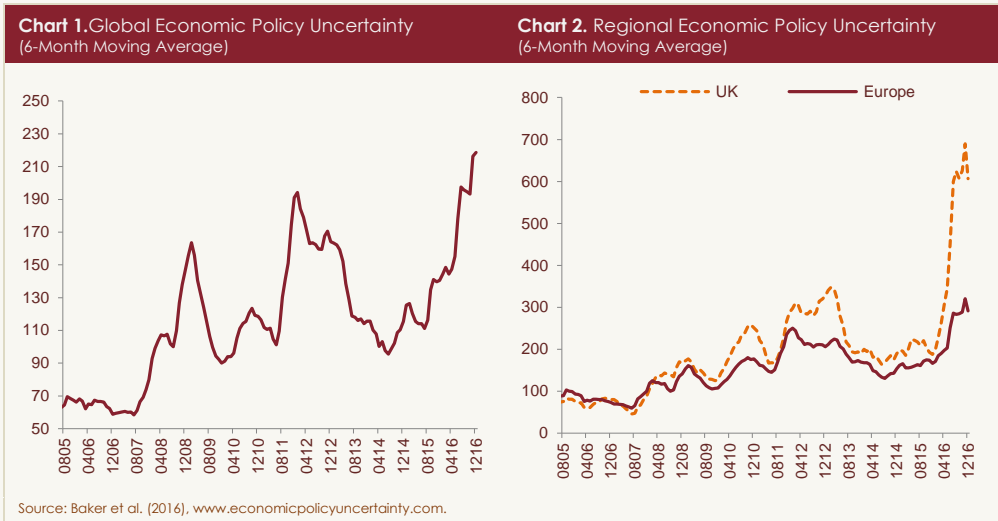
		Total	Fund Composition		Regional Distribution			
			Bond Funds	Equity Funds	Asia	Europe	Latin America	MENA
2015	Q1	-8.6	1.9	-10.5	-8.1	2.2	-2.4	-0.2
	Q2	-8.0	1.4	-9.4	-6.9	0.4	-2.0	0.4
	Q3	-45.3	-16.5	-28.8	-23.8	-6.5	-10.8	-4.1
	Q4	-22.3	-12.7	-9.6	-11.1	-3.0	-6.4	-1.9
2016	Q1	-4.5	-1.2	-1.6	-2.5	-1.4	-0.3	-0.3
	Q2	-1.4	7.3	-8.7	-4.5	0.7	1.9	0.6
	Q3	42.4	26.1	16.3	17.9	7.5	12.4	4.7
	Q4	-17.4	-9.3	-8.1	-12.6	-0.8	-2.7	-1.3

Source: EPFR.

Box
2.1

Recent Global Uncertainties and Its Implications

As the global economy is still struggling to recover from the latest financial crisis, current policies face growing aversion, and therefore the political ground has shifted in many countries. The uncertainty over economic policies has also increased in line with the changing political climate. Accordingly, the uncertainty about global economic policies has reached historic-highs since the previous peak in 2011 (Chart 1). This box gives an analysis of the reasons behind this mounting uncertainty and its potential implications for emerging economies.



One key driver of the changing political climate is the UK's vote to leave the EU. Contrary to expectations, the UK opted to exit the EU at the referendum on 23 June 2016, sparking uncertainty over economic policies in Europe (Chart 2). Later, Trump's win in the US presidential election on 8 November 2016, who, as a candidate, vowed to implement more inward-looking policies, triggered additional uncertainty regarding the elections to be held across Europe.

Due to the uncertainty and volatility these events have caused, the ongoing global political ground has led to significant challenges for policymaking in both advanced and emerging economies. These developments might affect the world economy through trade, finance, monetary policy and capital flows. Although it is quite difficult, at this stage, to foresee the transmission and final impacts of these channels, the immediate reflections of the recent developments in global financial markets are observed as higher interest rates and re-priced assets.

The US policy path in the Trump era is one of the main sources of uncertainty for the future direction of the global economy. Changes in US economic policies are expected to occur mainly in trade, fiscal and monetary policies. The expectation of a more protectionist foreign trade policy might put upward pressure on US inflation rates and weigh on global growth, particularly through emerging economies. The imminent fiscal expansion will probably translate into stronger US growth, higher inflation and rising bond yields in the upcoming period. The spillover effects of strong expansionary fiscal policies may hint at better growth for emerging economies; yet, these may be outweighed by the negative effects of trade protectionism in the medium term. Hence, it may be concluded that the strength and timing of trade and fiscal policies remain highly uncertain, and measuring their net effects is rather difficult. However, both policies have fueled hopes of stronger US growth and higher inflation, therefore reinforcing prospects for a Fed tightening cycle, which sent bond rates soaring in advanced economies while local currencies plummeted across emerging economies. In the coming months, emerging markets may gain competitive advantage with respect to their net exports by the depreciation of their currencies. On the other hand, through balance sheet effects and international funds, the depreciation of local currencies may lead to contraction in emerging economies that borrowed in US dollar during the post-crisis period of ample liquidity. Capital flows are another fast spillover channel of the increased uncertainty about global policies and the expected US tightening cycle. Indeed, emerging economies suffered massive portfolio outflows in the aftermath of the US presidential election.

The uncertainty surrounding global economic policies is expected to linger over the medium term. These developments affect economies through various channels and in opposite directions. For instance, a strong US fiscal expansion might, on one hand, encourage emerging market capital inflows, by stimulating global demand, and thus emerging market growth, and on the other hand, discourage emerging market capital inflows as advanced economies would also raise their interest rates. In such an environment, one may expect emerging market monetary policies to be affected to ward off the negative spillover effects of exchange rates. Fiscal and macroprudential stimulus packages might be needed in order to offset any downward pressure from tight monetary policy on economic activity. The implementation of such a policy and possible challenges may be different for each country depending on the discrepancies in the prevailing domestic conjuncture in each country and country-specific factors. For example, countries with ample fiscal space may focus more on fiscal stimulus programs, whereas countries with already large debts may adopt macroprudential measures. Such macroeconomic and macroprudential policies save time for policymakers, yet it is common knowledge that policies, which enhance the resilience of economies against shocks are actually the structural policies. Therefore, tough periods are challenging as they provide set the ground to undertake structural reforms, and all relevant institutions and authorities should coordinate in order to build monetary, fiscal, macroprudential and structural reforms in both advanced and emerging economies.

REFERENCES

Baker, S.R., N. Bloom and S.J. Davis, 2016, Measuring Economic Policy Uncertainty, *Quarterly Journal of Economics*, 131(4): 1593-1636.

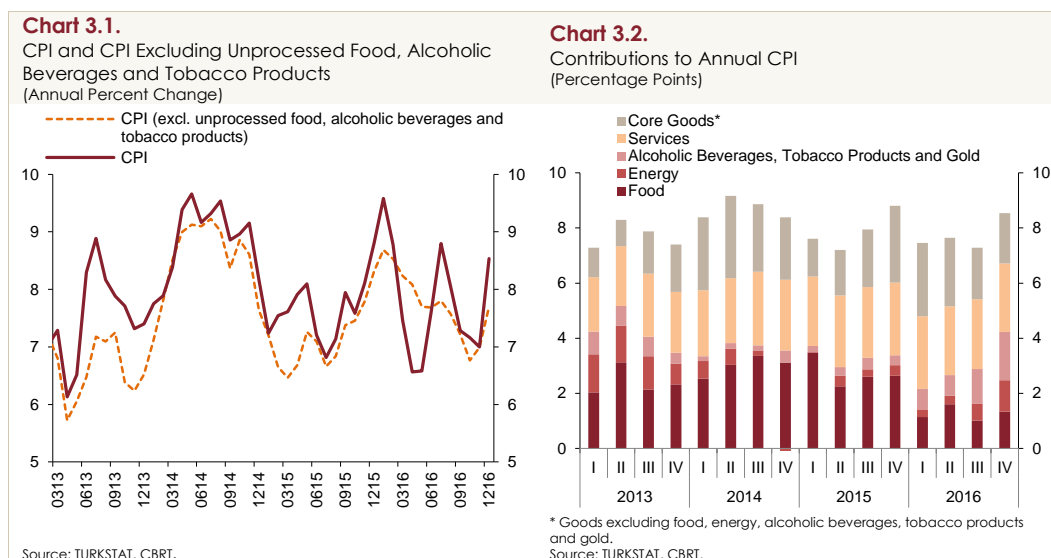
www.economicpolicyuncertainty.com.

3. Inflation Developments

Consumer inflation increased by 1.25 points to 8.53 percent on a quarterly basis at end-2016 (Chart 3.1). Upon a gradual slowdown after July, consumer inflation fell to 7 percent in November, but surged in December and remained above the uncertainty band around the inflation target. This was driven by the depreciation in the Turkish lira, adjustments in taxes and the partial rise in food prices. Across subcategories, energy prices displayed marked changes over the quarter, while price developments in alcoholic beverages, tobacco products, food and core goods were remarkable in December. The post-September depreciation of the Turkish lira was first reflected in energy prices, which have a relatively faster exchange rate pass-through. Moreover, energy inflation was also spurred by the crude oil prices.

Recent tax adjustments, particularly on tobacco products, also gave a notable push to inflation. The September SCT rise in fuel products was followed by the tax adjustments in automobiles in November and the December SCT rise in alcoholic beverages and tobacco products, which was imposed for the second time in 2016 after the January hike. Thus, tax hikes within the last four months drove inflation higher by 0.7 points in total. Taking into account the January adjustments, the administered prices contributed to inflation well beyond historical averages in 2016.

After a moderate course up to November, food prices surged in December due to depreciating Turkish lira and adverse weather conditions. Despite this acceleration, food inflation completed the year with historic-lows at 5.65 percent, due both to the faltering tourism sector and the measures in effect. Core goods inflation slowed steadily until November, but increased in December amid the price developments in durable goods, which were driven by tax adjustments in automobiles and the surge in the exchange rate. Services inflation, on the other hand, remained high by not recording a noticeable change on a quarterly basis. Against this background, annual inflation in core indicators trended upwards in December. Despite subsided demand conditions, the last quarter of the year was marked by dominating cost-side pressures amid the depreciated Turkish lira and soaring commodity prices, which led to a higher tendency to increase prices.

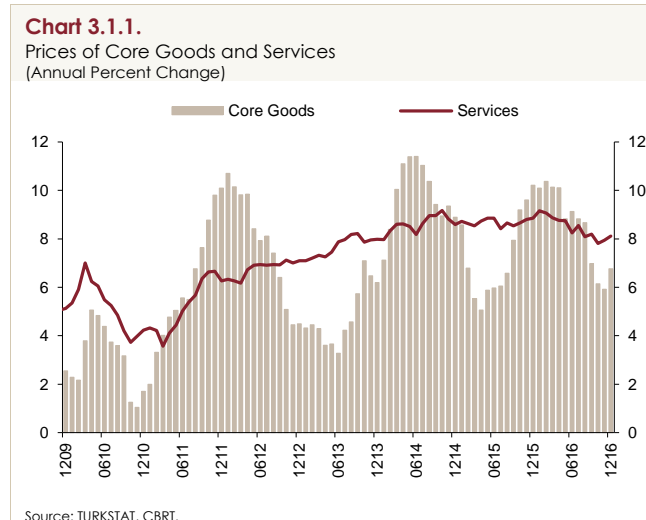


Among subcategories, contribution of energy, alcoholic beverages and tobacco products, and food increased by 0.5, 0.4 and 0.3 points, respectively, to annual inflation in the fourth quarter, while that of core goods and services was unchanged (Chart 3.2). Hence, the contribution of core items to consumer inflation remained flat quarter-on-quarter.

Overall, despite the disinflationary effect of economic activity, the inflation outlook deteriorated in the last quarter due to tax hikes, aggravating cost pressures and the partial increases in food prices. In particular, the inflation outlook has deteriorated mainly due to the depreciation in the Turkish lira. In the meantime, labor-intensive sectors, mostly services, experienced the adverse effects of the rise in real wages throughout the year, while medium-term inflation expectations remained high by deteriorating further in the last quarter. The recent exchange rate movements constitute upside risks to inflation prospects for the coming period. On the other hand, aggregate demand developments may partly contain these exchange-rate-driven effects. Leading indicators show that food prices, which increased slightly in December, rose further in January amid aggravated winter conditions. In the February-April period, annual food inflation is expected to remain high also due to the low base from the previous year. Lastly, it should be noted that inflation is subject to demand-driven downside risks as well, conditional on prospects for a further slowdown in economic activity.

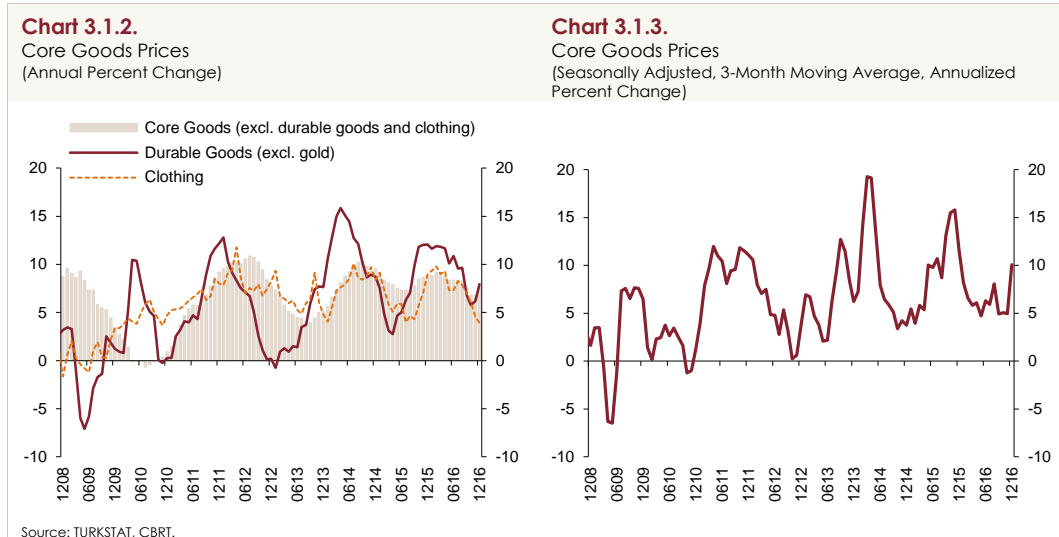
3.1. Core Inflation Outlook

Annual core goods inflation inched down by 0.21 points to 6.77 percent in the fourth quarter (Table 3.1.1, Chart 3.1.1). Given the slowdown in domestic demand, clothing prices fell beyond seasonal averages, causing annual inflation in this category to drop by 3.07 points to 3.92 percent. Inflation in durable goods surged amid the depreciated Turkish lira, while inflation in core goods excluding clothing and durables recorded a relatively minor increase in this period (Chart 3.1.2).



In the last quarter of 2016, prices of durable goods soared beyond historical averages with annual inflation rising above 1 point to 7.93 percent (Chart 3.1.2). This was caused by the depreciation in the Turkish lira, which had various effects on subcategories depending on sectoral demand conditions. Across subcategories, the most marked price increase was experienced in automobiles and white goods in this period, which registered robust domestic sales (Table 3.1.1). In addition to the

exchange rate, the hikes in automobile prices were also fueled by the change in SCT rates in motor vehicles as per the fiscal measures of late November. On the other hand, furniture prices remained almost flat amid modest demand conditions.



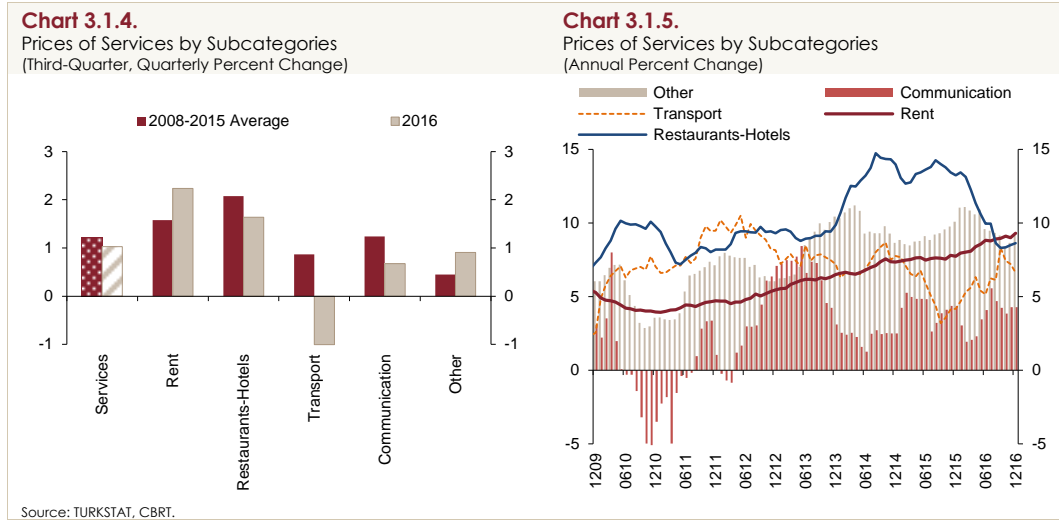
After a horizontal course in October and November, the underlying trend of core goods inflation recorded a jump in December (Chart 3.1.3). Overall, changes in core goods prices diverged across subcategories in the last quarter with inflation decelerating in clothing and furniture, but accelerating amid the depreciating Turkish lira in sectors with relatively strong domestic sales.

Table 3.1.1.
Prices of Goods and Services
(Quarterly and Annual Percent Change)

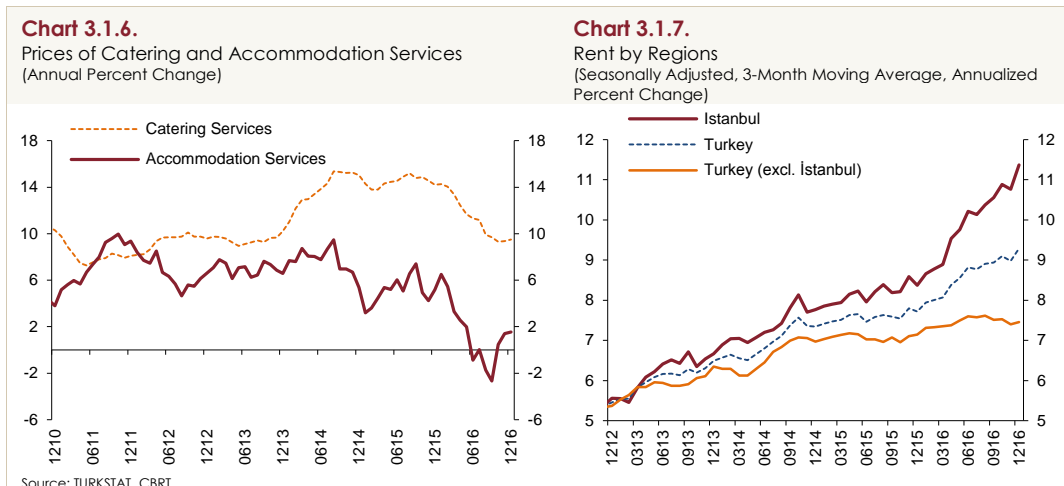
	2015		2016				
	IV	Annual	I	II	III	IV	Annual
CPI	2.44	8.81	1.75	1.84	1.05	3.64	8.53
1. Goods	3.02	8.79	1.51	1.85	0.32	4.83	8.72
Energy	0.24	2.96	0.85	1.94	1.46	4.18	8.67
Food and Non-Alcoholic Beverages	3.03	10.87	2.65	-1.97	0.46	4.51	5.65
Unprocessed Food	4.07	13.83	2.49	-5.29	-0.48	8.19	4.52
Processed Food	2.11	8.33	2.80	1.01	1.25	1.46	6.67
Core Goods	5.15	10.22	-1.18	5.63	-2.54	4.95	6.77
Clothing and Footwear	15.34	9.00	-12.42	20.44	-12.06	12.02	3.92
Durable Goods (excl. gold)	1.66	12.05	3.70	0.57	0.74	2.74	7.93
Furniture	2.32	10.70	5.72	1.03	0.98	0.38	8.27
Electrical and Non-Electrical Appliances	1.96	9.69	1.38	-1.04	-0.46	1.87	1.73
Automobile	1.07	14.01	4.95	1.28	1.45	4.71	12.91
Other Durable Goods	2.94	12.28	0.87	2.40	1.11	2.02	6.55
Core Goods (excl. clothing and durable goods)	2.32	8.79	2.06	1.48	1.44	2.49	7.68
Alcoholic Beverages, Tobacco Products and Gold	-0.94	6.56	11.14	0.35	10.20	6.80	31.25
2. Services	1.10	8.85	2.33	1.83	2.71	1.03	8.11
Rent	1.90	7.73	1.80	2.48	2.49	2.23	9.30
Restaurants-Hotels	1.34	13.23	2.53	1.46	2.73	1.64	8.62
Transport	0.56	4.17	1.47	1.61	4.48	-1.01	6.63
Communication	0.63	4.36	0.00	1.87	1.69	0.67	4.29
Other Services	0.92	10.09	3.65	1.84	2.47	0.91	9.15

Source: TURKSTAT, CBRT.

Prices of services increased below historical averages in the last quarter by 1.03 percent, while annual services inflation remained high at 8.11 percent (Charts 3.1.1 and 3.1.4). As increases in rents accelerated in this period, annual rent inflation climbed to 9.3 percent (Chart 3.1.5). On the other hand, price hikes in restaurants-hotels, communication and transport services remained below last-quarter historical averages (Chart 3.1.4).

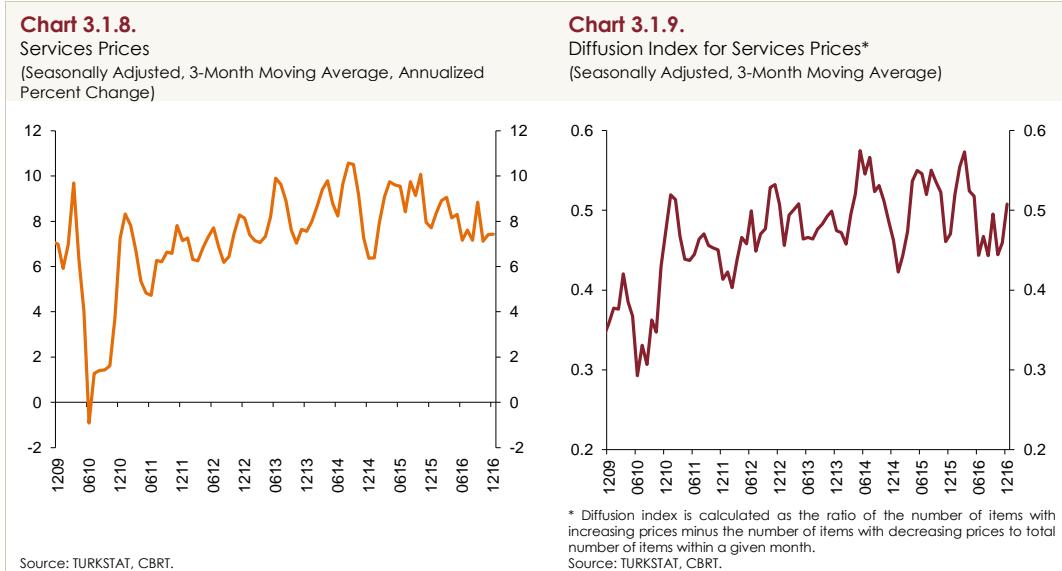


A detailed analysis of restaurants and hotels shows that annual inflation in catering services remained high at 9.50 percent with a limited slowdown, despite the relatively mild course of food prices (Chart 3.1.6). Being a labor-intensive sector, the minor fall in inflation in catering services was driven by minimum-wage-driven labor costs, which put a lid on the deceleration of inflation in other services categories as well. Unlike catering services, inflation in accommodation services remained low at 1.53 percent amid the languishing demand conditions in the tourism sector. In this period, rising fuel prices notwithstanding, transport services inflation decelerated due also to the slowing economic activity. As for other services, inflation decreased owing to package tour prices in October, while it climbed to 9.15 percent afterwards. Services inflation remained high also on the back of rents, which have been climbing since early 2011 (Chart 3.1.5). Rent inflation has recently diverged on a regional basis (Chart 3.1.7). Accordingly, annual rent inflation in provinces other than İstanbul remained relatively flat at 7.5 percent, while it boosted sharply by 11.4 percent in İstanbul.

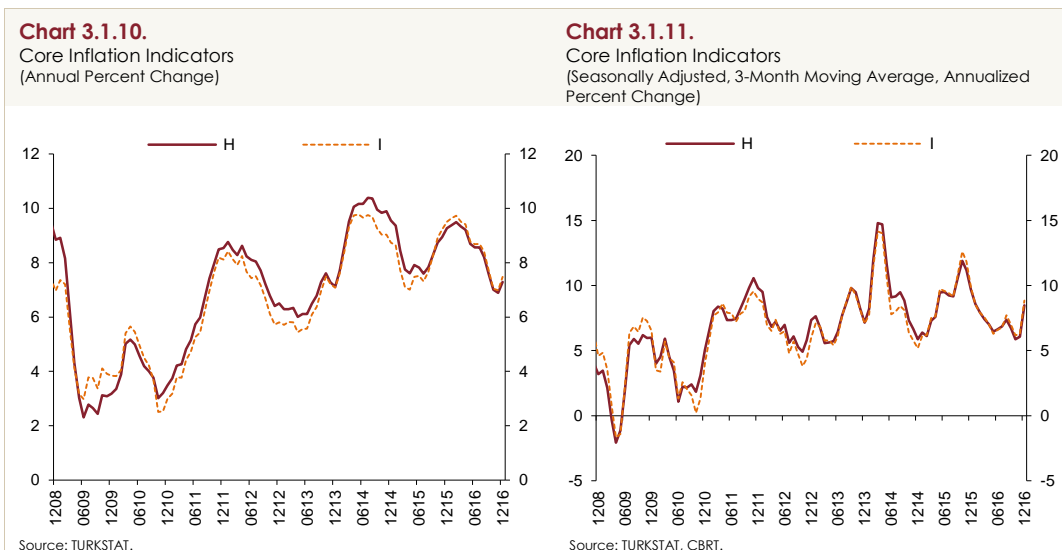


The underlying trend of services inflation inched down in this period, while the tendency to increase prices as monitored by the diffusion index displayed some acceleration as of December (Charts 3.1.8 and 3.1.9). In sum, the languishing demand conditions accompanied by the tourism slump

led to disinflation in services, which, however, was hindered by accelerating rents and wage developments. Services inflation remain high also due to the inflation level as well as inflation expectations.

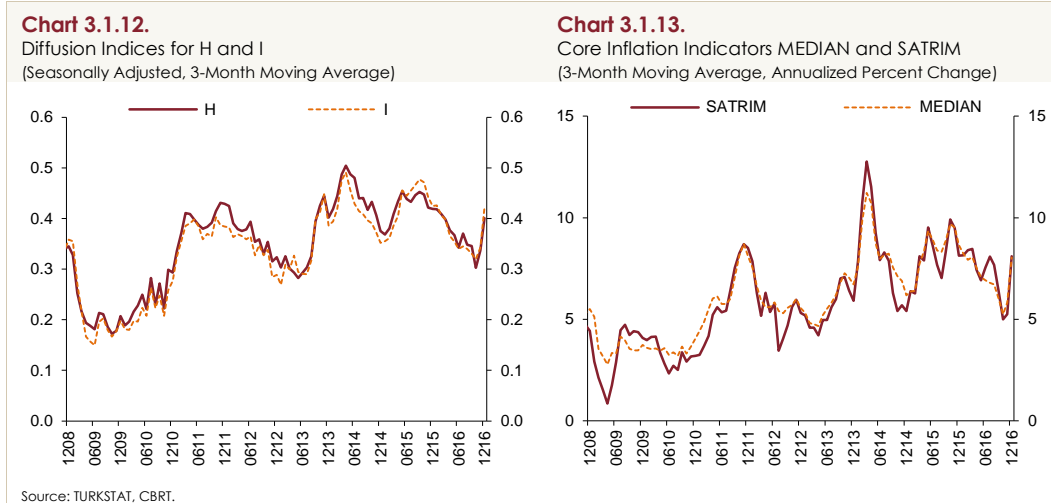


Annual inflation in H and I core inflation indicators declined slightly quarter-on-quarter to 7.29 and 7.48 percent, respectively, particularly on the back of the lower cumulative exchange rate effect on core goods inflation (Chart 3.1.10). On the other hand, the underlying trend of core inflation indicators recorded a quarterly deterioration with the pass-through of the recent depreciation of the Turkish lira to consumer prices in December (Chart 3.1.11).



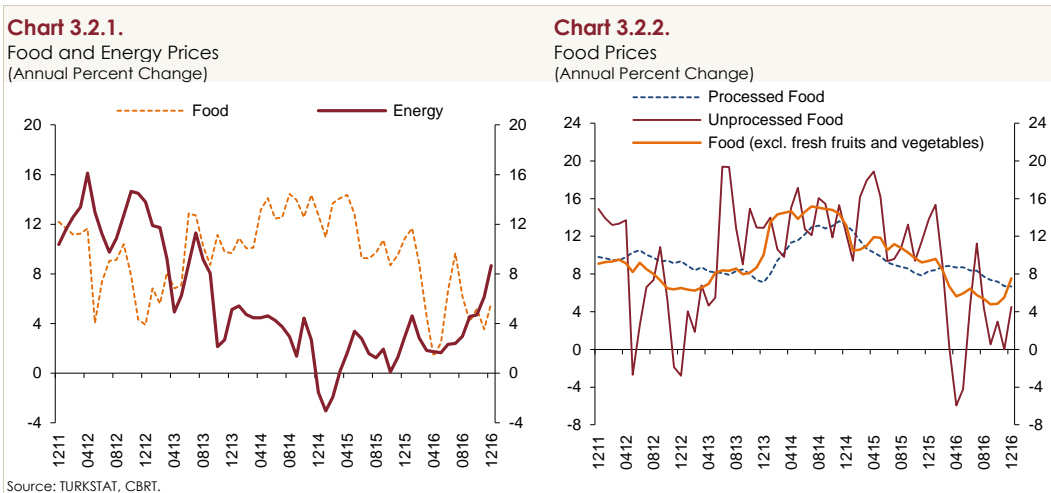
In this period, the diffusion indices for core indicators suggest a higher tendency for price increases compared to the third quarter (Chart 3.1.12). This observation can also be supported by SATRIM and MEDIAN, which are alternative core inflation indices monitored by the CBRT (Chart 3.1.13).

Hence, a joint analysis of these indicators on tendency and pricing behavior suggests that the underlying trend of inflation deteriorated remarkably compared to the previous quarter.

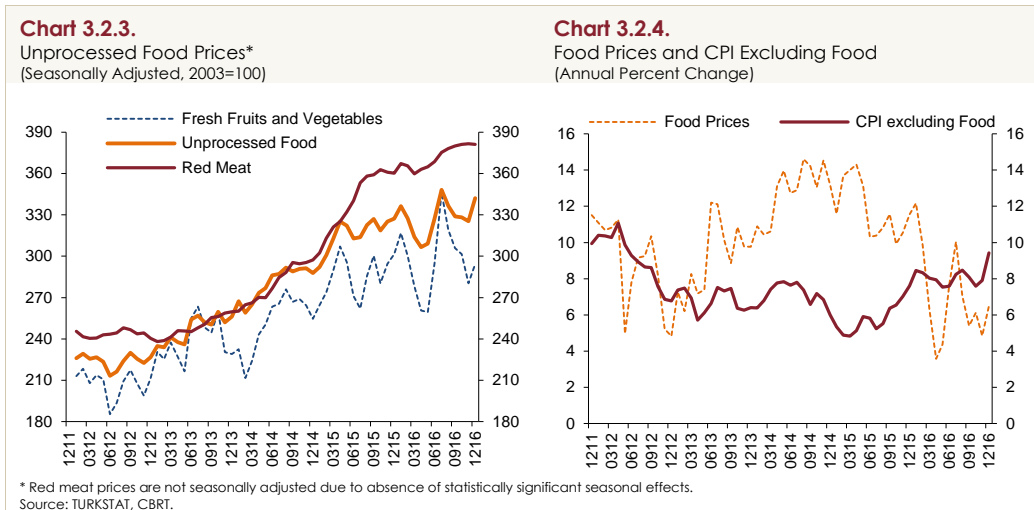


3.2. Food, Energy and Alcohol-Tobacco Prices

Upon a slight fall in the third quarter, annual food inflation increased by 1.49 points to 5.65 percent in the last quarter (Chart 3.2.1). Thus, annual food inflation remained relatively incompatible with the path projected in the October Inflation Report.

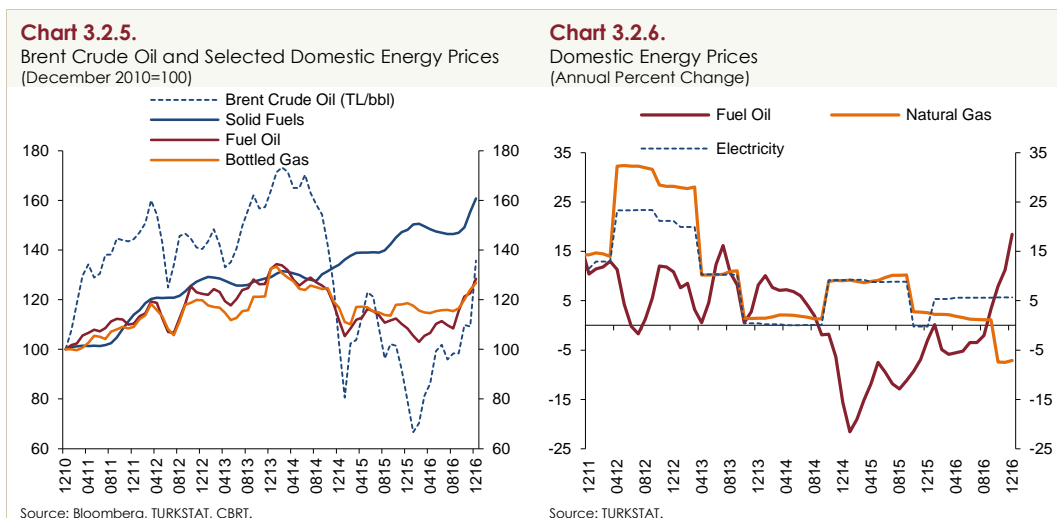


After following a favorable course at the end of the third quarter, annual unprocessed food inflation surged by 3.98 points to 4.52 percent in the last quarter (Chart 3.2.2). Seasonally adjusted unprocessed food prices point to a decline in October and November, but an upsurge in December (Chart 3.2.3). The rise in December was driven by prices of fresh fruits and vegetables, which hiked amid the adverse weather conditions. Unprocessed food inflation was also fueled by other subcategories such as white meat, legumes and eggs, the annual inflation of which climbed to 16.01, 20.31 and 35.43 percent, respectively. The annual red meat inflation, which has been declining due to the adopted measures, continued to hover mildly in the last quarter. Red meat prices are expected to remain moderate on the back of these measures.



On the processed food front, annual inflation fell by 0.68 points to 6.67 percent in the fourth quarter due to the prices of bread and cereals as well as fats and oils (Chart 3.2.2). Bread and cereals registered moderate price increases in this period, yet annual inflation remained high. On the other hand, subcategories recorded robust price hikes. Particularly, exchange rate developments had marked effects on fats and oils as well as coffee and tea. Lastly, analysis of food prices and CPI excluding food shows that the last-quarter rise in annual CPI inflation was mostly driven by non-food prices (Chart 3.2.4).

Energy prices surged by 4.18 percent in the fourth quarter due mainly to fuel, bottled gas and solid fuel prices (Table 3.1.1, Chart 3.2.5). Having stood at 46 USD at the end of the third quarter, Brent crude oil prices per barrel followed a fluctuating course and surged to 54 USD on average in December. In addition to the gradual increases in oil prices, the depreciation in the Turkish lira drove fuel and bottled gas prices up by 11.26 and 8.8 percent, respectively, on a quarterly basis. Taking the September SCT hike into account, fuel prices increased by 18.5 percent in cumulative terms in the last four months. Against these developments, annual energy inflation rose by 4.11 points to 8.67 percent in this period, despite the reduction in natural gas prices (Charts 3.2.1 and 3.2.6). Accordingly, the contribution of energy prices to consumer inflation increased markedly in this period.



Prices of alcoholic beverages and tobacco products increased by 7.33 percent in the last quarter. This was spurred by the December hike in SCT on alcoholic beverages and tobacco products and price increases introduced by firms on tobacco products above the level implied by the lump-sum SCT tax. Double SCT adjustment and price hikes imposed by cigarette producers pushed annual inflation up to 31.59 percent, which in turn, added 1.57 points to consumer inflation. The December hike will also be reflected in prices in January, albeit at relatively minor pace.

3.3. Domestic Producer Prices

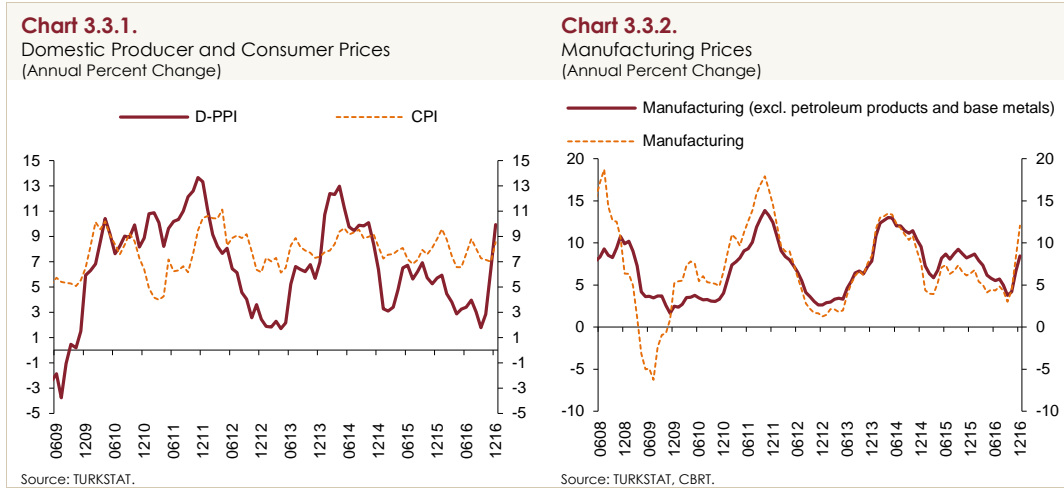
Domestic producer prices soared by 5.92 percent in the fourth quarter amid manufacturing price developments. Annual inflation in domestic producer prices posted a quarter-on-quarter increase by 8.16 points to 9.94 percent, leading to remarkably higher cost-side pressures (Table 3.3.1, Chart 3.3.1). In this period, international commodity prices, oil and metal in particular, increased and had an adverse effect on producer prices, which spilled over into D-PPI subcategories.

Table 3.3.1.
D-PPI and Subcategories
(Quarterly and Annual Percent Change)

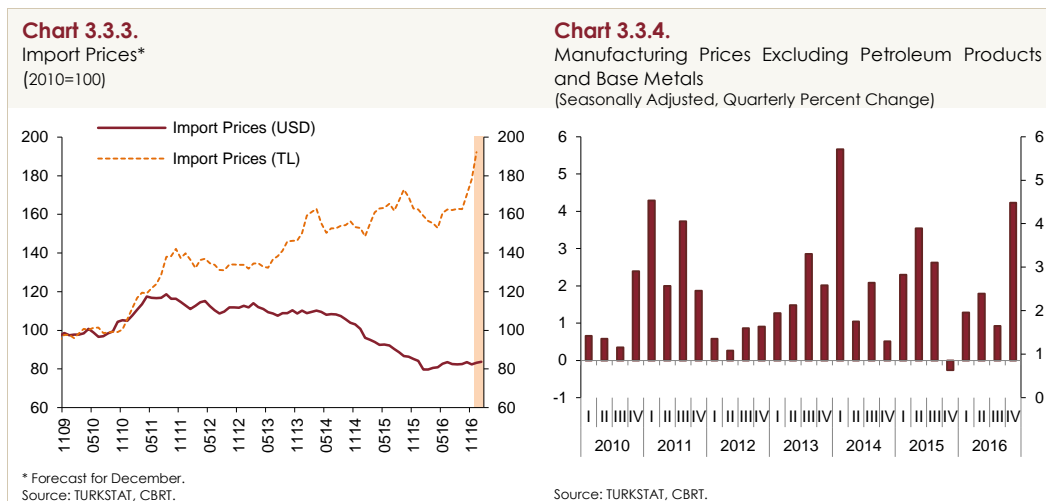
	2015		2016				
	IV	Annual	I	II	III	IV	Annual
D-PPI	-1.94	5.71	0.75	2.43	0.58	5.92	9.94
Mining	-1.08	-0.69	-1.36	6.49	-0.17	3.01	8.01
Manufacturing	-1.89	6.38	1.33	2.75	0.84	6.73	12.07
Manufacturing (excl. petroleum products)	-1.32	7.28	1.56	2.14	0.87	5.92	10.83
Manufacturing (excl. petroleum products and base metals)	-0.57	8.44	1.66	1.49	1.16	3.92	8.46
Electricity and Gas	-3.39	0.19	-4.99	-2.96	-2.20	-2.17	-11.79
Water	2.89	19.95	3.27	1.52	0.27	1.98	7.21
Main Subcategories of D-PPI							
Intermediate Goods	-2.30	5.69	1.19	2.59	0.43	9.17	13.83
Durable Goods	-0.40	12.48	4.76	2.56	2.15	1.82	11.75
Durable Goods (excl. jewelry)	2.54	11.78	3.31	0.97	0.59	2.14	7.17
Non-Durable Goods	-0.52	6.73	1.55	1.81	0.88	2.04	6.41
Capital Goods	-0.45	10.08	1.59	1.03	1.61	4.82	9.32
Energy	-5.54	-2.57	-4.86	4.46	-1.31	6.57	4.53

Source: TURKSTAT, CBRT.

Manufacturing prices surged by 6.73 percent quarter on quarter, while annual inflation climbed to 12.07 percent (Table 3.3.1, Chart 3.3.2). Similarly, manufacturing prices excluding petroleum products and base metals recorded an upsurge (Chart 3.3.2). In this period, import prices remained relatively flat in USD terms, but increased in TL-denominated terms amid exchange rate developments (Chart 3.3.3).



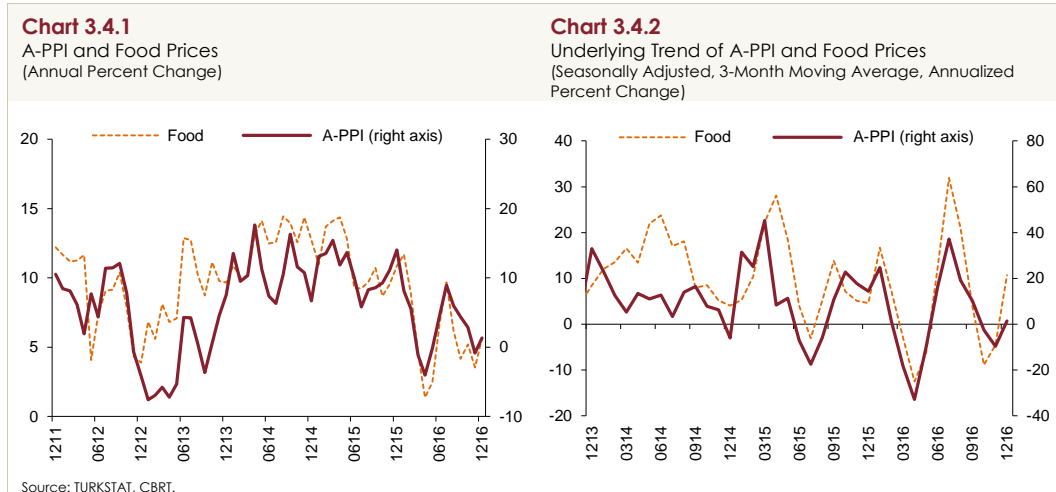
Across major categories, quarterly increases in prices were significantly higher in intermediate goods, energy and capital goods (Table 3.3.1). Price increases in intermediate goods were mostly driven by precious metals, iron-steel and ferroalloys as well as other products that are used in steel processing. Energy prices rose owing to prices of petroleum products. On the capital goods front, prices increased due to metal construction products and motor vehicle accessories. Against this background, the underlying inflation in manufacturing prices excluding petroleum products and base metals, which entails information on the underlying trend of producer prices, recorded a quarterly upsurge (Chart 3.3.4). All in all, cost pressures on consumer prices driven by producer prices remained robust in the last quarter.



3.4. Agricultural Producer Prices

In the fourth quarter of the year, agricultural producer prices increased by 0.95 percent, while annual inflation in this category fell by 3.06 points to 1.33 percent (Chart 3.4.1). Despite soaring prices of cereals and legumes, inflation in agricultural producer prices remained low in 2016 on the back of falling prices of fresh fruits and vegetables, vegetables in particular. Meanwhile, cereal prices followed a moderate path in the last quarter. Following the decline in October, wheat prices rebounded in the last two months, catching up with the third-quarter readings. On the other hand, legumes, particularly

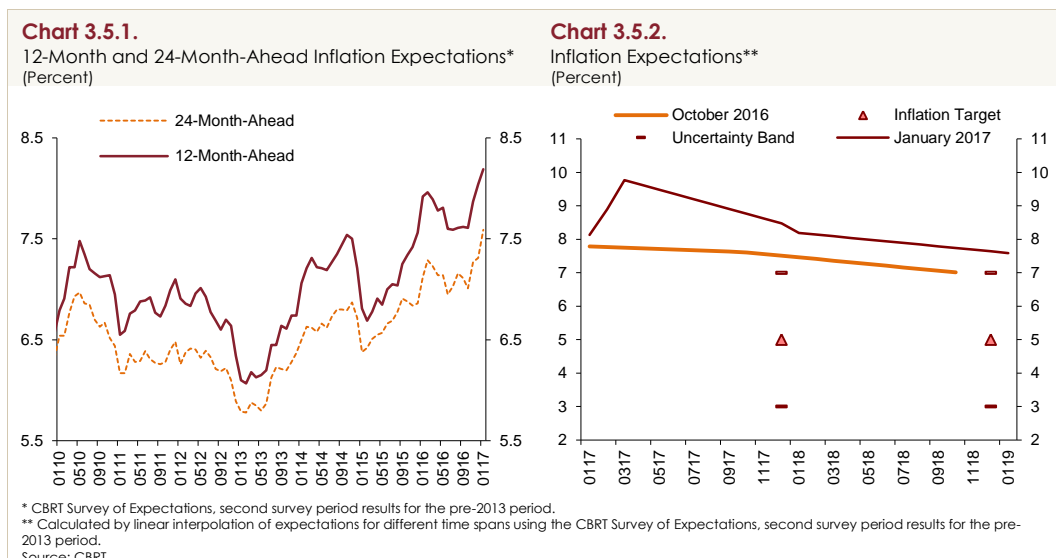
chickpeas and white beans, saw further price hikes, while live cattle prices remained on an uptrend in this period.



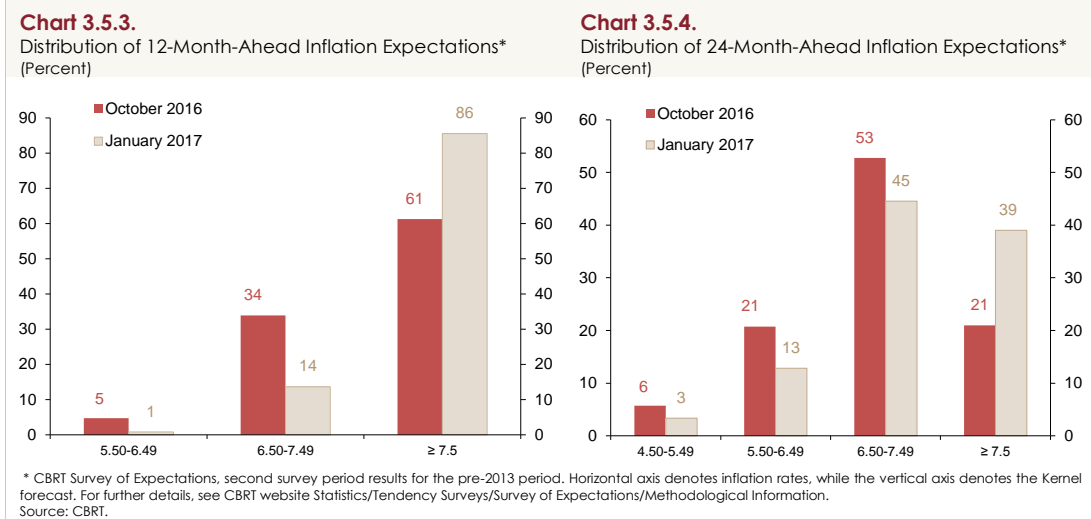
In seasonally adjusted 3-month moving average terms, the underlying trend of agricultural producer prices reveals a notable downturn in the first two months of the fourth quarter, but a slight rise in December. Consumer prices for food moved similarly, however, at a more accelerated pace than agricultural producer prices (Chart 3.4.2).

3.5. Expectations

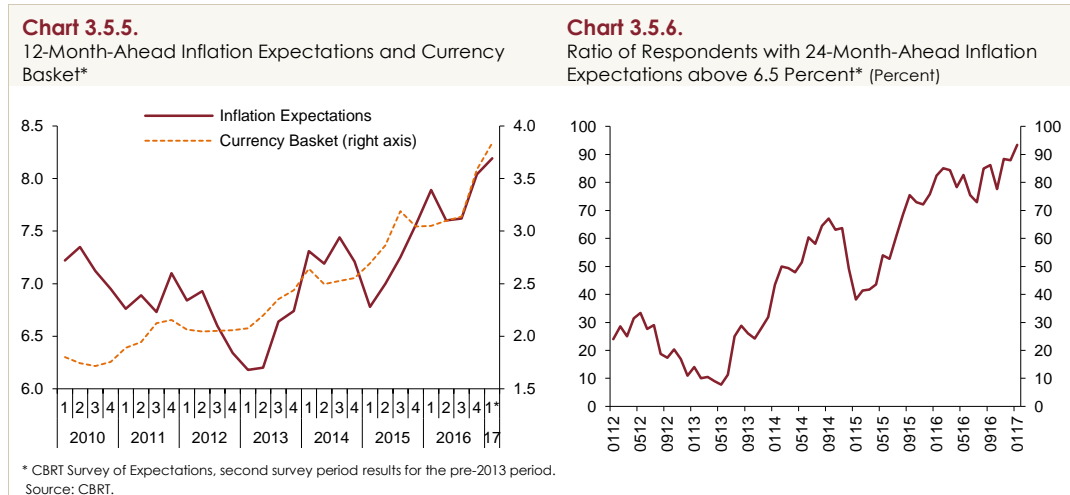
Upon an improvement in the first half of 2016 amid the favorable course of consumer inflation, medium-term inflation expectations remained flat in the third quarter. However, expectations deteriorated due to the depreciation of the Turkish lira in the last quarter (Charts 3.5.1 and 3.5.5). Medium-term expectations worsened further owing to the recent exchange rate developments as well as the higher-than-expected inflation realization in December 2016. 12-month and 24-month-ahead expectations hit 8.2 and 7.6 percent, respectively, in January (Chart 3.5.1). Across maturities, inflation expectations were revised considerably upwards quarter-on-quarter for the short-term, but were raised relatively mildly for the longer term (Chart 3.5.2).



The dispersion of medium-term inflation expectations confirms the deterioration in inflation expectations compared to October Inflation Report (Charts 3.5.3 and 3.5.4). In January, the percentage of respondents expecting 12-month-ahead inflation to be between 6.5 and 7.49 percent decreased, whereas those expecting it to be 7.5 percent or above increased (Chart 3.5.3).



In January, the deterioration in 24-month-ahead inflation expectations, which hit the historic-high, is more remarkable. Particularly due to the recent plunge in the Turkish lira, the ratio of respondents with 24-month-ahead inflation expectations above 6.5 percent climbed above 90 percent in January.



Box
3.1

Pass-Through from Import Prices and Exchange Rate to CPI and Subcategories

Import prices and exchange rates are major determinants of inflation. Particularly in periods in heightened volatility driven by global uncertainties, exchange rates and import prices have an increased impact on consumer prices. Import prices and the exchange rate affect domestic consumer prices indirectly through producer prices owing to the use of imported inputs, and directly via the prices of imported consumption goods. Thus, the effect of import prices and the exchange rate on inflation is first observed through the cost channel. For aggregated indices, this effect is estimated usually by VAR models and impulse-response functions. However, since the CPI is composed of heterogeneous subcategories, the pass-through coefficient for each subcategory may vary. Therefore, this box analyzes the pass-through from import prices and the exchange rate to the CPI and subcategories by using detailed price indices.¹

Accordingly, pass-through from import prices and the exchange rate is analyzed individually for 152 sub-indices. In the spirit of Ögünç et al. (2017), a VAR model is constructed comprising of import prices (USD-denominated import unit value index), exchange rate (currency basket), output gap, price index (CPI subcategories) and wages (non-farm real unit wage) as endogenous variables. The output gap is in levels, while other variables are in terms of quarterly percentage changes. The model also includes global growth, the global risk appetite, unprocessed food excluding fresh fruits and vegetables and the tax on energy products as the exogenous variables. The sampling period is 2005Q1-2015Q2.

CPI subcategories were selected on the basis of the statistical and economic significance of their impulse responses to shocks in import prices and exchange rates. Cumulative pass-through to the main CPI subcategories is calculated by the pass-through coefficients measured for each selected subcategory and their share in the CPI. The main results are presented in Table 1.

Table 1. Pass-Through from Import Prices and Exchange Rate to CPI and Subcategories
(Cumulative Effect at the end of 2 years, Percent)

	CPI	CPI*	CPI**	Core Goods	Services	Processed Food	Unprocessed Food	Energy
Cumulative response to exchange rate shock	17.4	17.5	19.1	24.8	11.5	27.1	23.5	7.5
Cumulative response to import price shock	14.0	14.8	15.3	17.0	4.2	15.4	12.8	30.5

* CPI excluding unprocessed food, alcoholic beverages and tobacco products.

** CPI excluding fresh fruits and vegetables, alcoholic beverages and tobacco products.

As illustrated, the effect of import prices and the exchange rate can vary widely across main subcategories. In particular, both import prices and the exchange rate have a significant effect on core goods prices. This is not surprising as this category includes mostly imported items like automobiles, televisions and mobile phones. Moreover, pass-through from the exchange rate to core goods can be completed within a shorter time than that from import prices. As for energy, pass-through from import prices is considerably higher than the exchange rate, which is also expected given that Turkey is an energy-importing country.

This box is mostly concerned with services and food categories. In this regard, the pass-through from the

¹ For further details, see Özmen and Topaloğlu (2017).

exchange rate is estimated to be quite high (above 10 percent) for services, which is dominated by domestic cost factors (e.g. wages) and mostly not subject to trade. In particular, the exchange rate pass-through is stronger in some services priced in foreign currency (hotels, package tours, etc.) and those using imported inputs (maintenance-repair, dentistry services, etc.). On the food front, both processed and unprocessed food are subject to high pass-through from import prices and the exchange rate. The pass-through in the food category can mostly be observed through imported products (oils, etc.), the use of imported inputs (coffee, cocoa, etc.), and goods subject to international trade (dried fruits, eggs, etc.). Exchange rate pass-through is rather unexpected in food — a category that is more sensitive to domestic supply conditions. However, pass-through becomes plausible when the use of imported inputs and the export potential of certain products are taken into account.

In aggregated terms, the cumulative pass-through from import prices and the exchange rate to the CPI is estimated to be 14 and 17.4 percent, respectively, (Table 1, Chart 1). These results seem to comply well with earlier findings², which help to conclude that results obtained for subcategories are also reliable.

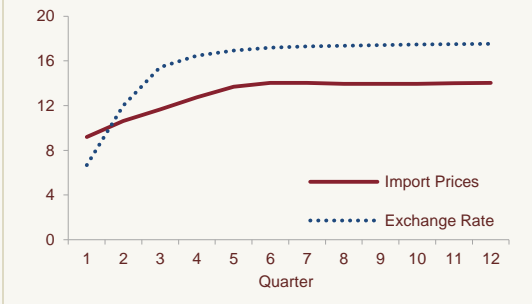
In sum, this study finds that pass-through from import prices and the exchange rate varies widely across

CPI subcategories. In addition to expected pass-through to core goods and energy, the study also finds significant pass-through to services and food prices. This suggests that the inflationary effects of especially the exchange rate have spilled over across CPI subcategories.

REFERENCES

- Kara, H. and F. Ögünç, 2012, Döviz Kuru ve İthalat Fiyatlarının Yurt İçi Fiyatlara Etkisi (in Turkish), İktisat İşletme ve Finans, 27(317): 09-28.
- Ögünç, F., M.U. Özmen and Ç. Sarıkaya, 2017, Türkiye'de Enflasyon Dinamiklerine Bayesçi Bir Yaklaşım (in Turkish), Paper in progress.
- Özmen, M.U. and M. Topaloğlu, 2017, Disaggregated Evidence for Exchange Rate and Import Price Pass-Through in the Light of Identification Issues: Aggregation Bias and Heterogeneity, Paper in progress.

Chart 1. Import Prices and Exchange Rate Pass-Through to CPI (Cumulative Effect, Percent)



² Ögünç et al. (2017) estimate pass-through coefficients for more recent periods. Also, using alternative models for 2002-2011, Kara and Ögünç (2012) estimate exchange rate pass through to be 15 percent within one year and 17 percent within two years.

4. Supply and Demand Developments

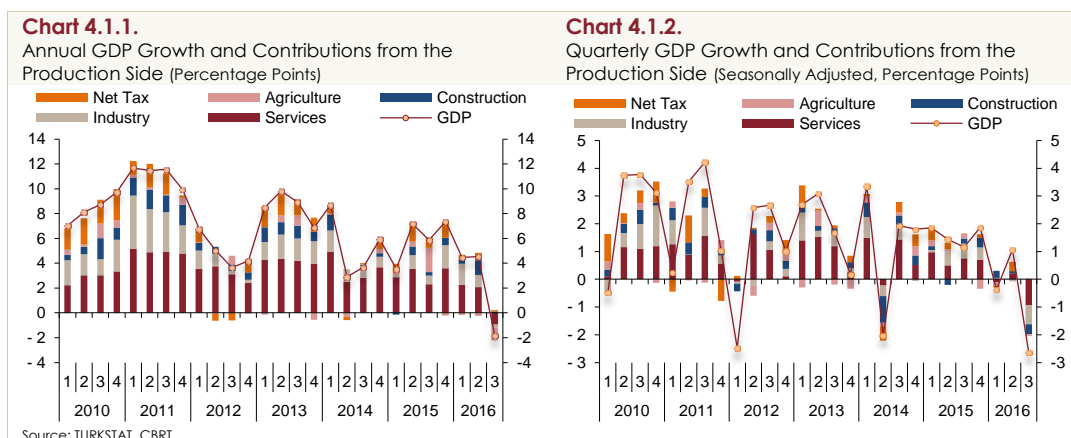
The third-quarter economic activity was weaker than projected in the October Inflation Report. Falling tourism revenues had a more severe impact in this period, which was amplified by the mid-July turmoil and the loss of workdays due to extended religious holidays. Adjusted for both regular and irregular calendar effects, the slowdown in the underlying economic activity is not quite as deep as signaled by the third-quarter GDP data.

Current indicators point to quarterly economic recovery for the fourth quarter, which, however, is moderate apart from the negated workday losses of the third quarter. New measures and incentives have stimulated the demand for houses and durable goods through increased borrowing, but the lackluster job market and weakening consumer confidence seemingly put a lid on private consumption. Meanwhile, no notable recovery was observed on the private investment front. The recently restored relations with Russia had a favorable effect on exports of goods and services, whereas the slowing domestic demand rendered imports relatively weaker, suggesting that net exports will have a smaller negative contribution.

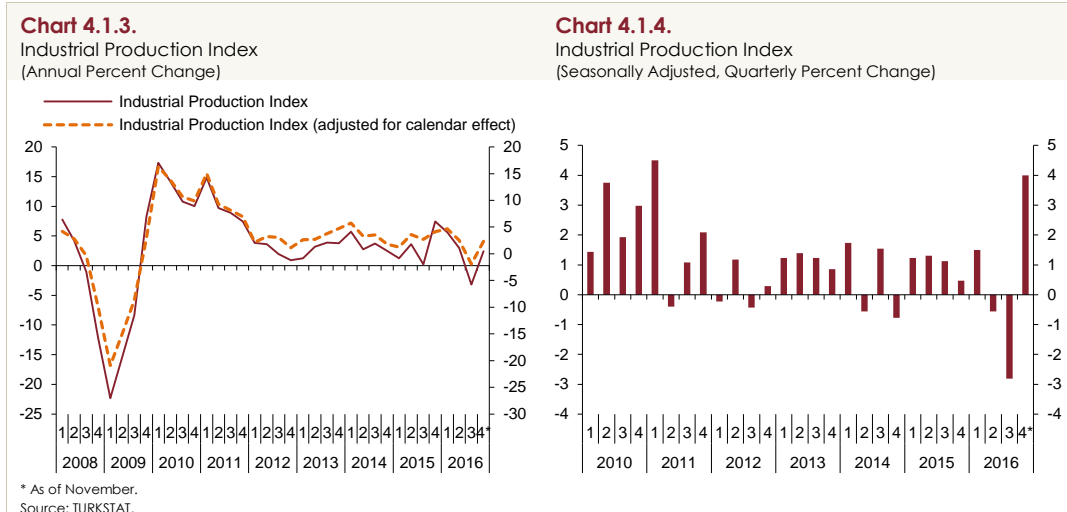
The tourism outlook remains gloomy, but economic activity is expected to see further modest recovery owing to accommodative incentives and measures. Nevertheless, due to recent rise in uncertainty, the growth outlook faces more downside risks. The fragile global growth, the uncertainty over monetary policies in advanced economies, the course of capital flows and geopolitical tensions pose a downside risk to growth for 2017, as in the recent past. Lastly, commodity prices are likely to become gradually less favorable for the current account deficit in the coming months.

4.1. Supply Developments

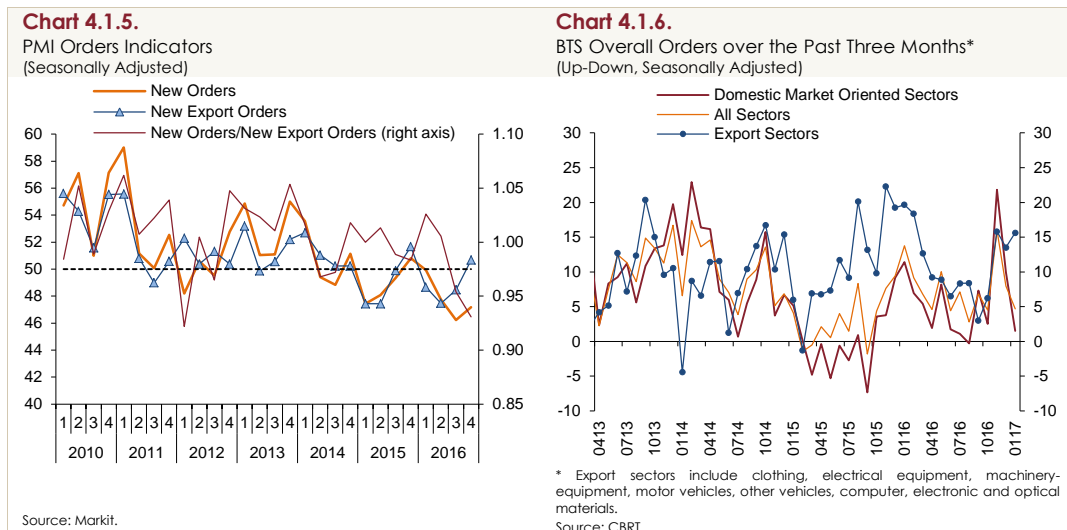
The GDP posted a year-on-year decrease by 1.8 percent in the third quarter of 2016 and posted a quarter-on-quarter contraction of 2.7 percent on a seasonal and calendar-adjusted basis. The yearly and quarterly downturn spread across all sectors (Charts 4.1.1 and 4.1.2). The direct and indirect spillovers of a marked decline in tourism revenues led to a slowdown in services and industrial sectors. Additionally, the mid-July turbulence and the loss of working days due to extended religious holidays dampened all sectors. Adjusted for both regular calendar effects and the working day losses, economic activity is estimated to have registered a small yearly growth and a minor quarterly contraction in the third quarter.



October and November's industrial production shows that the third-quarter descent was short-lived and offset in the fourth quarter (Charts 4.1.3 and 4.1.4). Apart from the technical recovery linked to the compensation of the workday losses of the third quarter, the underlying industrial production posted a mild gain in the fourth quarter, which, however, failed to spread across all sectors. In particular, export-oriented sectors, especially vehicles, provided a boost to industrial production, whereas other sectors pulled industrial production down in this period.



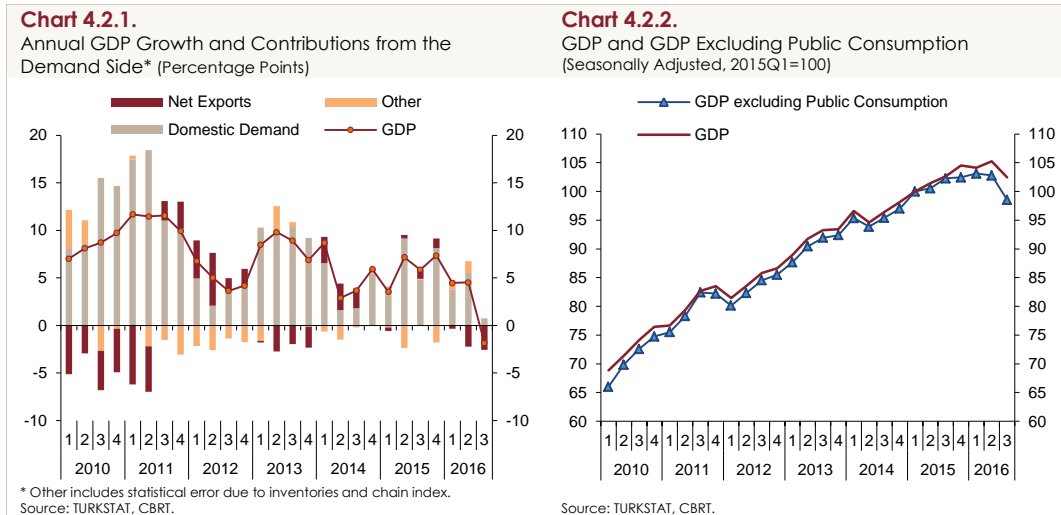
Survey indicators confirm the moderate fourth-quarter rebound and indicate that export sectors are relatively better off (Charts 4.1.5 and 4.1.6). Aggregate demand composition is expected to change further with the depreciation of the Turkish lira. In fact, the January drop in orders across domestic market oriented sectors points to downside risks to domestic demand.



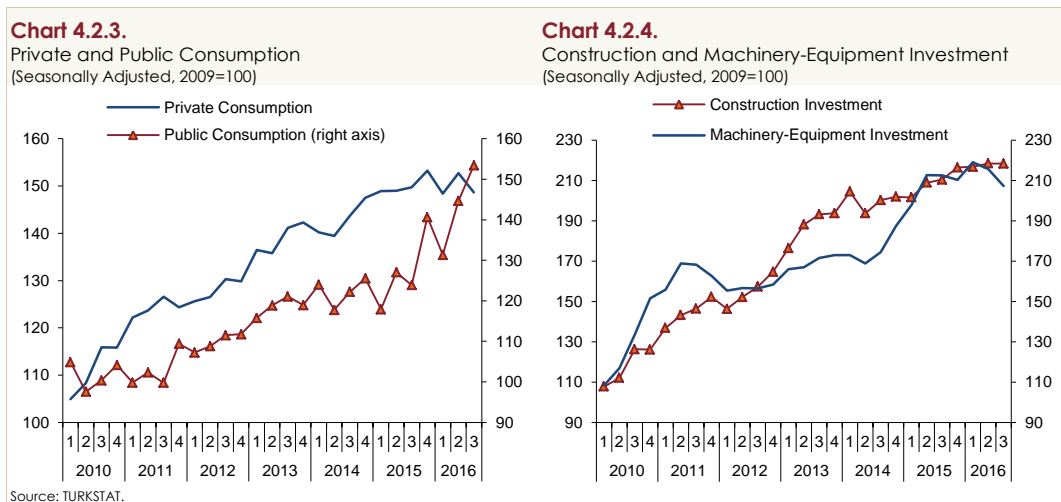
4.2. Demand Developments

The GDP data on the expenditures side indicate that net exports provided an increased negative contribution to growth in the third quarter amid a stronger loss in tourism revenues. Moreover, the uncertainty spurred by the mid-July turmoil caused domestic demand to weaken substantially

(Chart 4.2.1). The upswing in public consumption was the main driver of domestic demand, while rising construction investments restricted a further fall in total investments.

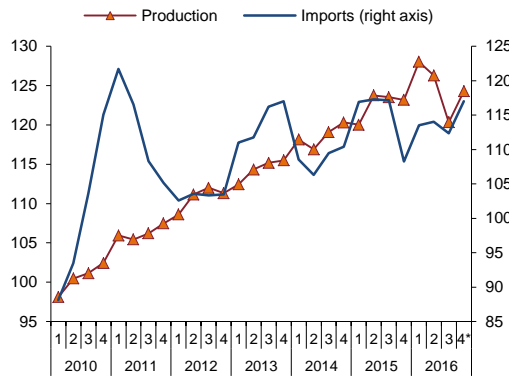


On a seasonally adjusted basis, all items except public consumption posted quarter-on-quarter declines in the third quarter. Therefore, excluding public consumption, the GDP exhibits a deeper contraction (Chart 4.2.2). Private consumption and investment spending were down quarter-on-quarter due to the mounting domestic uncertainty since mid-July, with machinery and equipment investments accounting for most of the drop (Charts 4.2.3 and 4.2.4).



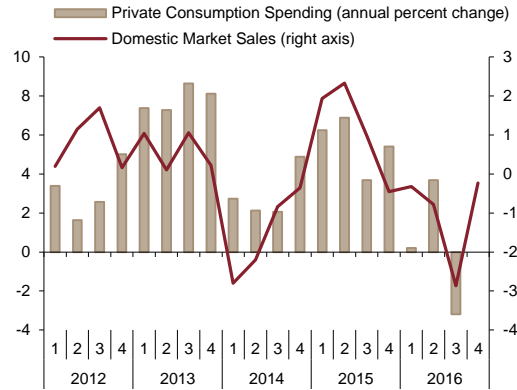
Indicators for the fourth quarter of 2016 imply that the private consumption slump of the third quarter is temporary. Indeed, the production and imports of consumption goods picked up from the third quarter in the October-November period (Chart 4.2.5). Automobile sales soared upon expectations for a possible pass-through from the depreciating Turkish lira and the SCT hikes to prices in coming periods. Likewise, white goods sales increased quarter-on-quarter amid climbing house sales and the demand brought forward due to the Turkish lira plunge. All in all, the fourth-quarter sales data point to a limited recovery in private consumption for the fourth quarter (Chart 4.2.6).

Chart 4.2.5.
Production and Imports of Consumption Goods
(Seasonally Adjusted, 2010=100)



* As of November.
Source: TURKSTAT, CBRT.

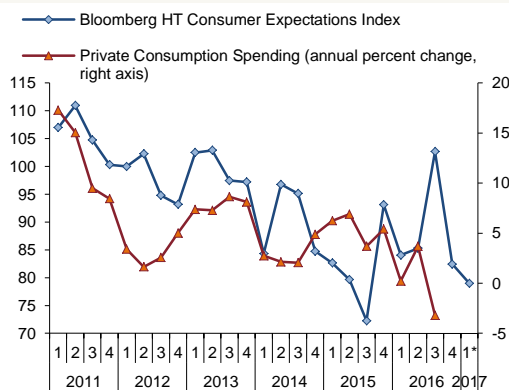
Chart 4.2.6.
Private Consumption Spending and Domestic Market Sales*



* Domestic market sales show the common factor measured by principal component analysis covering automobile sales, white goods sales, retail sales and shopping mall sales indices.
Source: AMA, WGMA, TURKSTAT, CSC, CBRT.

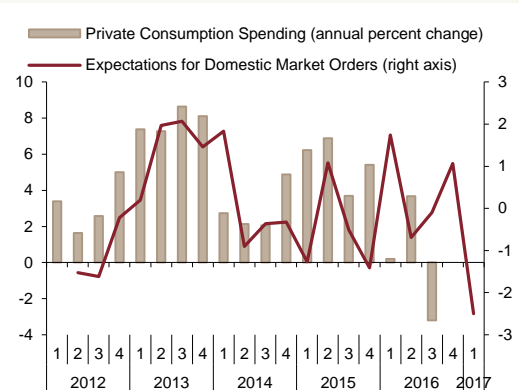
Private consumption is expected to weaken over the upcoming period. This is due to the fact that the demand for exchange-rate-sensitive goods was brought forward, which is estimated to curb private demand in the first quarter of 2017. Furthermore, the decline in the Bloomberg HT Consumer Expectations Index, which measures consumers' sentiment about their economic situation and the Turkish economy for the next 12 months, hints at weaker consumption spending in the coming months (Chart 4.2.7). In fact, leading indicators also signal a weakening in private consumption demand for the first quarter of 2017 (Chart 4.2.8). Nevertheless, house sales are expected to remain on the rise in the first quarter. With the decline in mortgage rates continuing since end-December and incentives for house purchases continuing into the first quarter, the demand for the housing sector might remain brisk. Moreover, data from the Bank Lending Survey point to an easing in mortgage lending standards for the first quarter of 2017, which may also help prop up housing demand. A continued robust demand for houses might stimulate the demand for furniture and white goods, and hinder the expected weak course of private consumption.

Chart 4.2.7.
Private Consumption Spending and Consumer Expectations Index



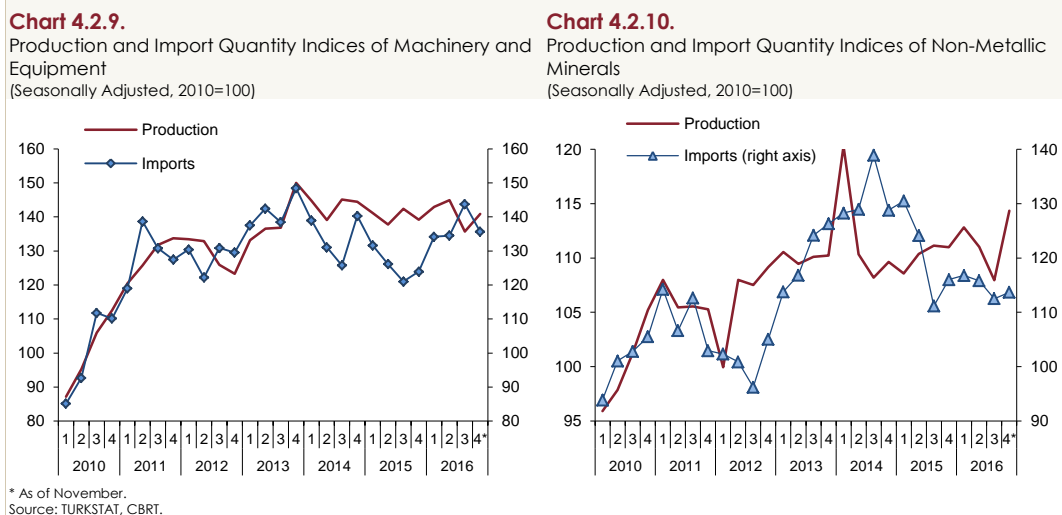
* As of January.
Source: Bloomberg HT, TURKSTAT.

Chart 4.2.8.
Private Consumption Spending and Expectation for Domestic Market Orders

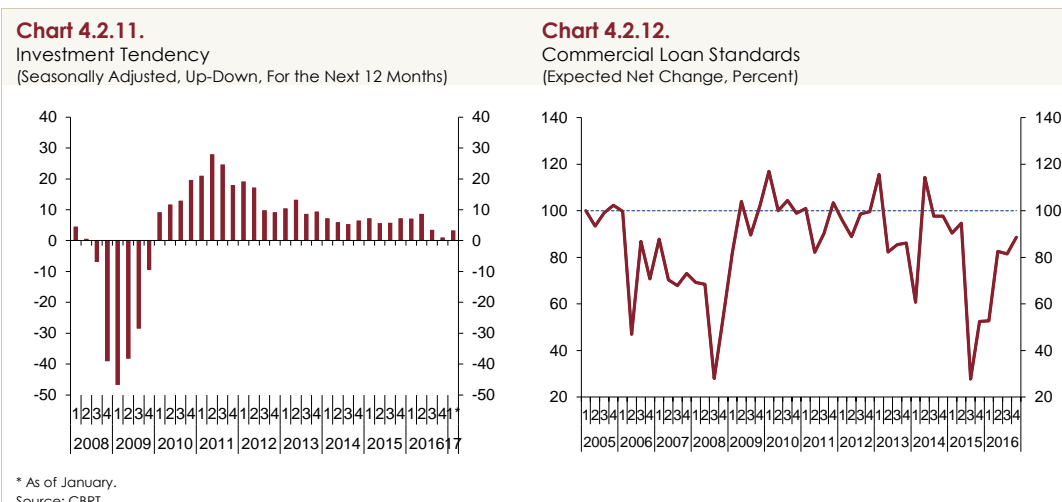


* Expectations for domestic market orders denote the common factor measured by the principal component analysis covering retail trade supplier orders and BTS domestic market orders for the next three months. Expectations for domestic market orders are backdated with one quarter as they lead private consumption spending.
Source: TURKSTAT, TEPAV, CBRT.

Current indicators signal that investment demand recovers at a slower pace than consumer demand thus investments may not record a strong rebound in the fourth quarter. In the October-November period, machinery-equipment saw production growing yet imports falling (Chart 4.2.9). As for construction indicators, the rise in the production and imports of non-metallic minerals implies an increase in construction investments for the fourth quarter (Chart 4.2.10).

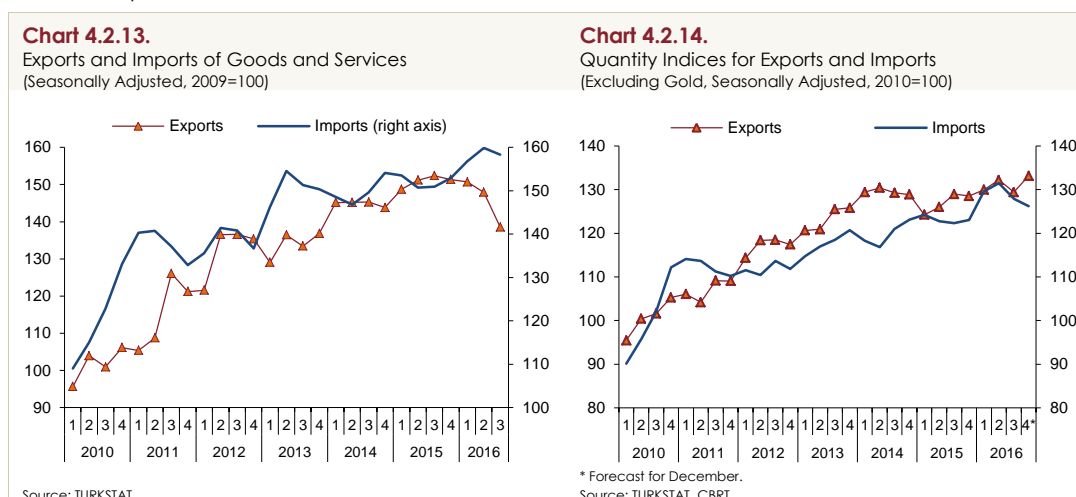


The fixed capital investment tendency of manufacturing companies for the next 12 months remain low, largely due to weak domestic demand and financing constraints (Chart 4.2.11). According to the Bank Lending Survey, firms' demand for loans increased in the first quarter of 2017, while commercial loan standards are expected to remain tight (Chart 4.2.12). Another factor dampening the future investment outlook is aggravating uncertainty due to the recent volatility in financial markets. Uncertainty indicators developed for various economic agents such as consumers, firms and the financial sector suggest that investment growth faces more downside risks (Box 4.1).



Exports of goods and services slumped in the third quarter of 2016 amid stronger loss in tourism revenues and the decline in exports, while the imports of goods and services fell at a more modest pace (Chart 4.2.13). Thus, net exports provided a larger negative contribution to quarterly growth in the

third quarter. Recent data signal some rebound for exports in the fourth quarter (Chart 4.2.14). The moderate global economic recovery, restored relations with Russia and Turkey's high flexibility in market diversification bolster the exports of goods. Moreover, the slowing decline in tourism revenues in the fourth quarter buoys up the exports of goods and services. Data for the final quarter point to a minor drop in imports driven by weak domestic demand (Chart 4.2.14). The more promising outlook for exports than imports suggests that net exports are likely to make a less negative contribution to growth in the fourth quarter.



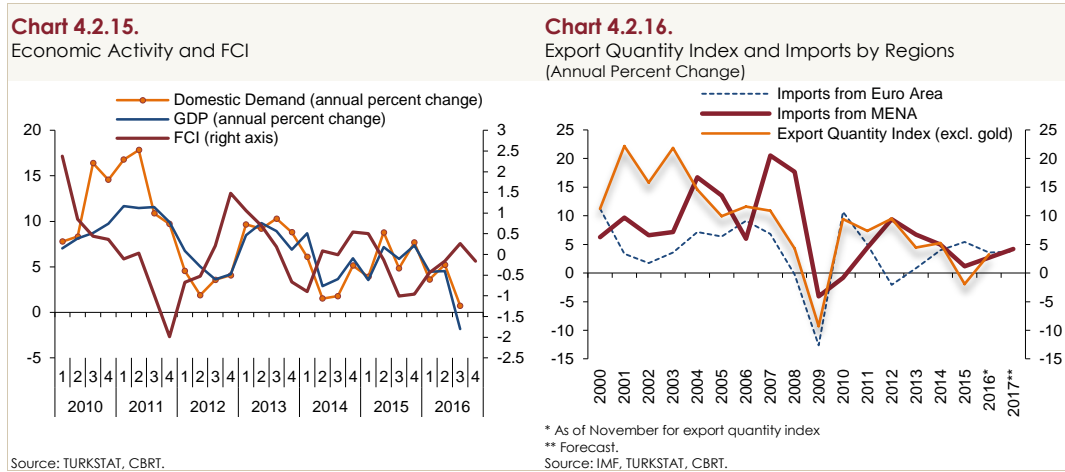
In short, economic activity slackened in the third quarter of 2016 due to both domestic demand and net exports. Indicators for the fourth quarter hint at some recovery for private consumption. Yet, the fact that the rebound in domestic demand has been restricted to some sectors as well as the weakening consumer confidence and the troubled labor market pose downside risks to private consumption demand. Investment demand remained virtually unchanged in the final quarter. Meanwhile, the aggravating economic uncertainty, the deteriorating financing conditions and the weakening domestic demand stood as the key downside risks to investments. On the other hand, net exports are expected to make a less negative contribution to growth, while the public sector is expected to spur growth through investments in the fourth quarter.

Outlook for 2017

Economic activity is expected to remain on a modest growth track in 2017 amid demand-stimulating incentives and the expected recovery across Turkey's trading partners. However, lately, the available data imply an aggravating sentiment of uncertainty about the economy (Box 4.1). In recent months, the exchange rate became highly volatile while financial conditions tightened, which negatively affected the private demand outlook, particularly for investments (Chart 4.2.15). Additionally, the wage hikes scheduled for 2017 are expected to provide less support to private consumption spending than in 2016.

Exports of goods might provide added support to growth in 2017. In addition to the awaited mild growth in the EU, the positive income effect that may be observed in Turkey's oil-exporting trading partners upon rising oil prices and the recent course of the Turkish lira may stimulate exports

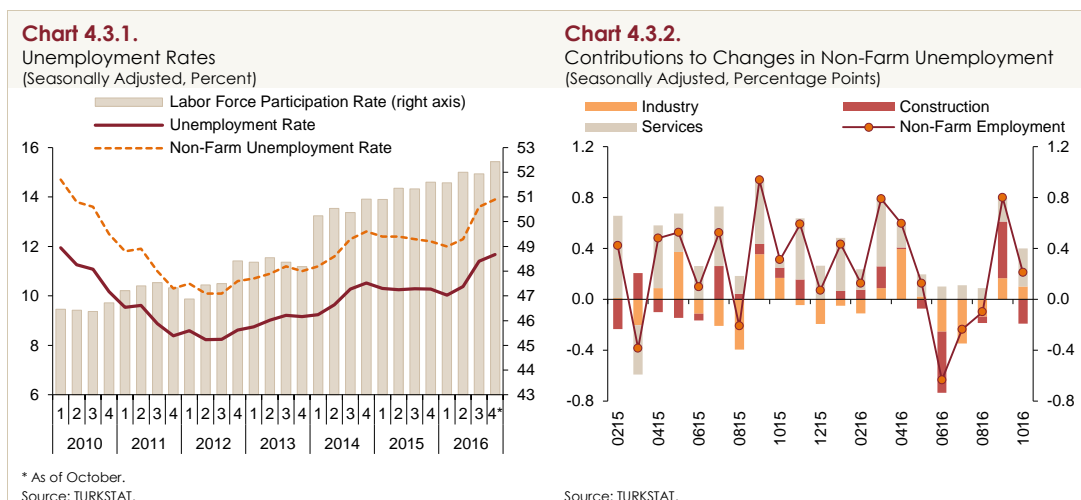
(Chart 4.2.16). Nevertheless, despite restored relations with Russia and prospects for Russia's economic recovery, exports of services may remain subdued due to the barely improving outlook for tourism.



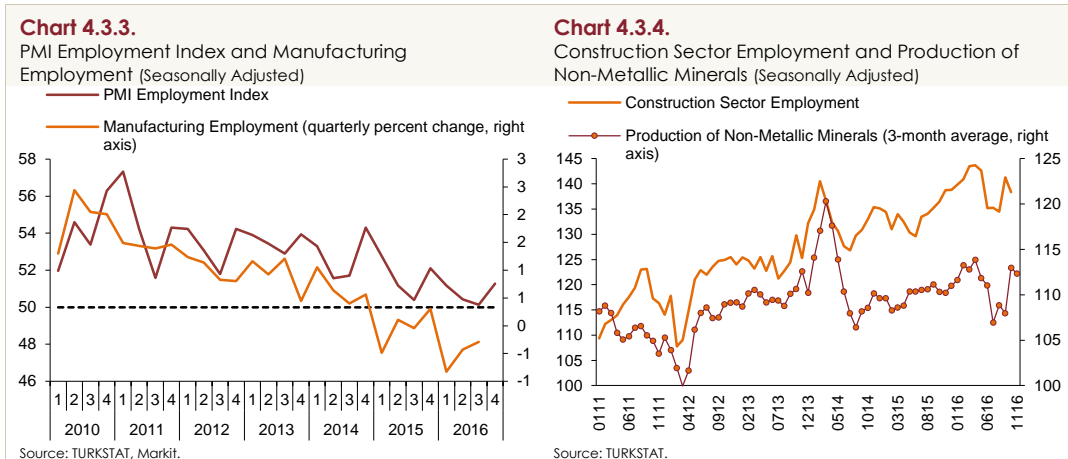
In sum, the modest economic recovery of 2017 is expected to be spurred mainly by the direct and indirect support of the public sector and by the impending rebound in external demand. However, given the recent course of financial conditions and the sentiment of uncertainty, economic activity is estimated to recover gradually and slowly. Along with the tourism outlook, the uncertainty over advanced market monetary policies, the course of capital flows, geopolitical tensions and the fragility in global growth pose downside risks to the pace of economic recovery in the upcoming period. Meanwhile, the possible lagged effects of the recently adopted incentives and measures may act as upside risks.

4.3. Labor Market

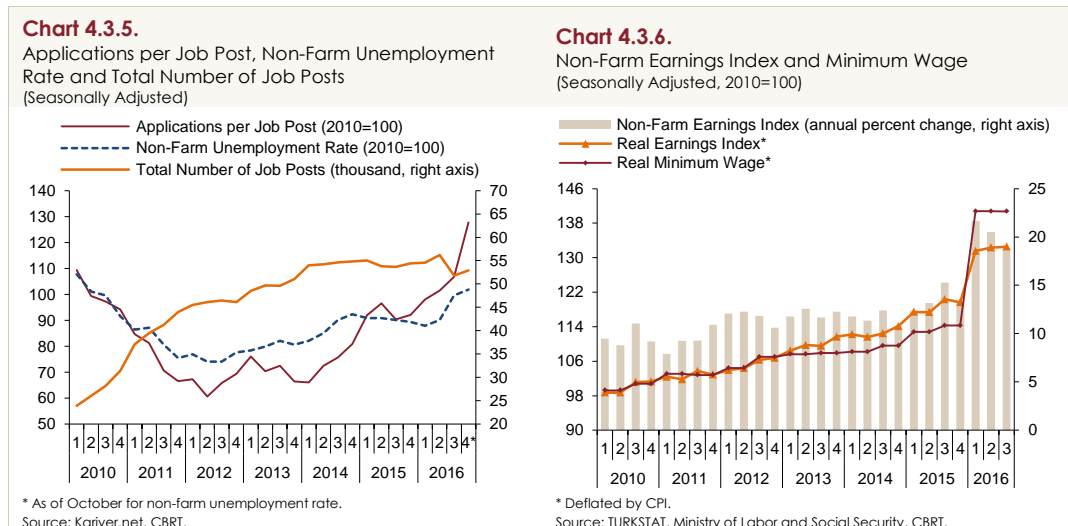
With the marked slowdown in the underlying economic activity, total and non-farm unemployment rates surged in the May-October period (Chart 4.3.1). The increase in the unemployment rate was driven by rising labor participation, along with weakening employment. The weakening non-farm employment of the first ten months of 2016 was attributable to falling industrial employment. In this period, the construction industry provided no support to non-farm employment growth while the services sector made a further contribution (Chart 4.3.2).



The PMI employment index, an indicator of manufacturing employment, posted a quarter-on-quarter uptick in the fourth quarter (Chart 4.3.3). Excluding the base effect driven technical recovery during the October-November period, the industrial production adjusted for seasonal and calendar effects displayed mild gains, signaling a steady industrial employment outlook for the fourth quarter. The production of non-metallic minerals, which is closely associated with construction employment, soared in October but edged down in November, suggesting that construction employment might be flat in the fourth quarter (Chart 4.3.4).

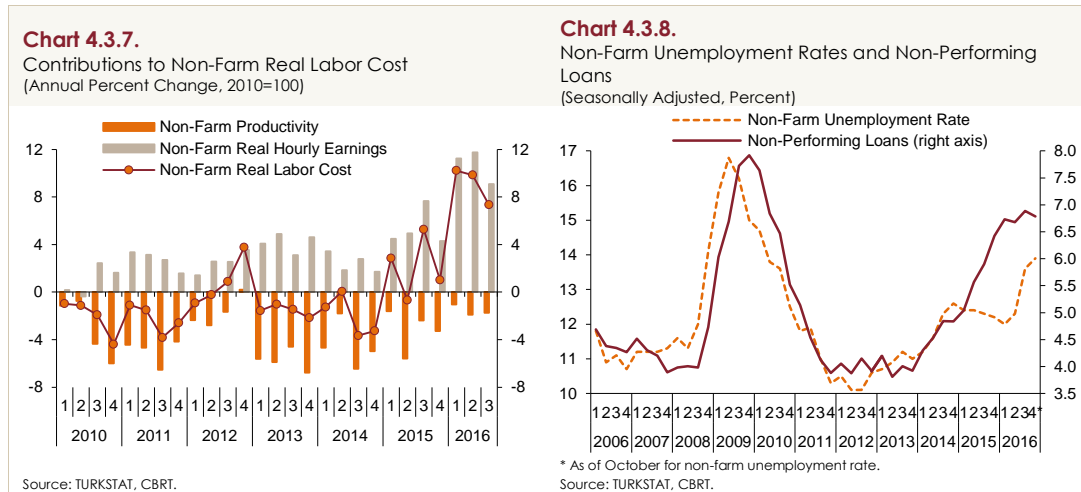


Data from Kariyer.net indicate that total number of job posts hardly improved from the previous quarter in the final quarter of 2016 (Chart 4.3.5). Applications per job post, which are closely associated with unemployment rates, trended upwards. Thus, leading indicators signal a rise in the underlying trend of unemployment rates for the upcoming period.



In the first nine months of 2016, wage hikes pushed unit labor costs higher and caused lower profits, thus bringing an additional burden on inflation (Chart 4.3.6). In this period, which is marked by low productivity gains, wage hikes were largely reflected on unit labor costs (Chart 4.3.7). On the other hand, the minimum wage support to employers provided by the government has partly compensated for the adverse effects of wage hikes on both employment and costs. Rising unemployment rates may

put a downward pressure on household spending in the upcoming period and cause delays in loan payments (Chart 4.3.8).



To sum up, employment has declined amid slowing economic activity since May 2016 while unemployment rates have continued to climb. In view of a likely moderate growth in the fourth quarter and leading indicators for employment, unemployment rates are expected to rise and remain elevated throughout 2017. The current pattern of employment and unemployment rates reflects a weakening that can dampen private consumption demand in the coming months.

Box
4.1

An Economic Uncertainty Indicator for Turkey

Uncertainty is any incidence that hampers the ability of economic agents, such as households, firms and policymakers to perceive the current situation and predict future conditions. Uncertainties about growth, demand, financial indicators, job prospects or expected income may count as economic uncertainty. In periods of heightened economic uncertainty, consumers tend to increase their precautionary savings and might delay their spending on durable goods or houses. Likewise, in times of heightened uncertainty about demand and borrowing costs, firms might postpone their investment and hiring decisions. Moreover, volatility surges in these periods, hindering policymakers' forecasting and decision-making abilities.

Uncertainty may be due to various reasons, such as financial, political and economic developments, and also have various implications for economic agents. Therefore, uncertainty measurement should be based on a comprehensive approach that takes into account the uncertainty sentiment of different economic agents. Accordingly, this study estimates an aggregate uncertainty indicator for the Turkish economy by following Haddow et al. (2013) and ECB (2016). In this regard, four individual uncertainty indicators are constructed to capture financial uncertainty, consumer uncertainty, firm uncertainty and forecast uncertainty by using data from various indicators on money and financial markets, various surveys conducted among consumers and firms as well as the CBRT Survey of Expectations. The seasonal adjustment of these series is performed using TRAMO/SEATS and the non-stationary series are transformed by taking their first differences. Then, the volatility of the respective series is estimated using the GARCH (1,1) model, which serves as an uncertainty indicator.^{1,2} In the next stage, the common factor of the uncertainty indicators that are highly correlated with growth, private consumption and investment is estimated using a dynamic factor model, which produces the individual uncertainty indices for the above four categories.³ Table 1 presents these estimated uncertainty indicators.⁴

The uncertainty sentiment may vary across different economic agents, hence alternative indicators should be monitored simultaneously in order to have an accurate picture of the overall economy. So, in the next step, this study computes an aggregate uncertainty index by estimating the common factor of the above uncertainty indicators via dynamic factor model, and thus constructs a single uncertainty indicator for the overall economy by compiling information from multiple sources. This common factor is called the composite economic uncertainty indicator (Chart 1).

¹ In addition to using the GARCH model, volatility is also measured by standard deviation, a qualitative volatility model and a sequential volatility measure. Yet, the GARCH model produces a higher correlation between volatility and macroeconomic variables than other methods.

² VIX, implied USD/TL volatility, EMBI, interest rate volatility and CDS are already volatility indicators; therefore, these series do not need to be estimated by GARCH models.

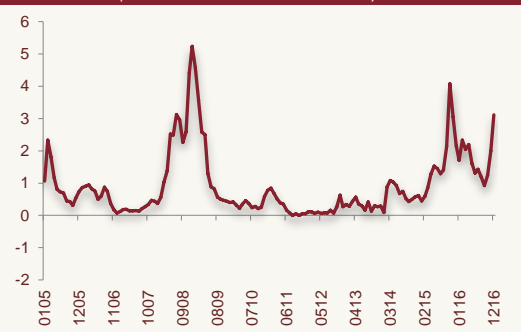
³ Besides dynamic factor model, the uncertainty index may alternatively be measured by taking the simple average or median value of the series or by the use of principal component analysis. However, dynamic factor model is chosen over these alternatives given its better performance in explaining the common variance of the series and reflecting the overall tendency. Moreover, the dynamic factor model is also preferred given the impossibility to measure common factor by the principal component analysis in case of missing observations.

⁴ These series are selected out of a broader dataset that also includes interest rate expectations from the CBRT Survey of Expectations, confidence indices and orders for services and construction sectors as well as some PMI and BTS data. Accordingly, the volatility for each series was estimated and the relationship of these estimated volatility series with GDP, consumption and investment were examined within a cross-correlation analysis. Yet, these series were eliminated given their low correlation with economic activity indicators.

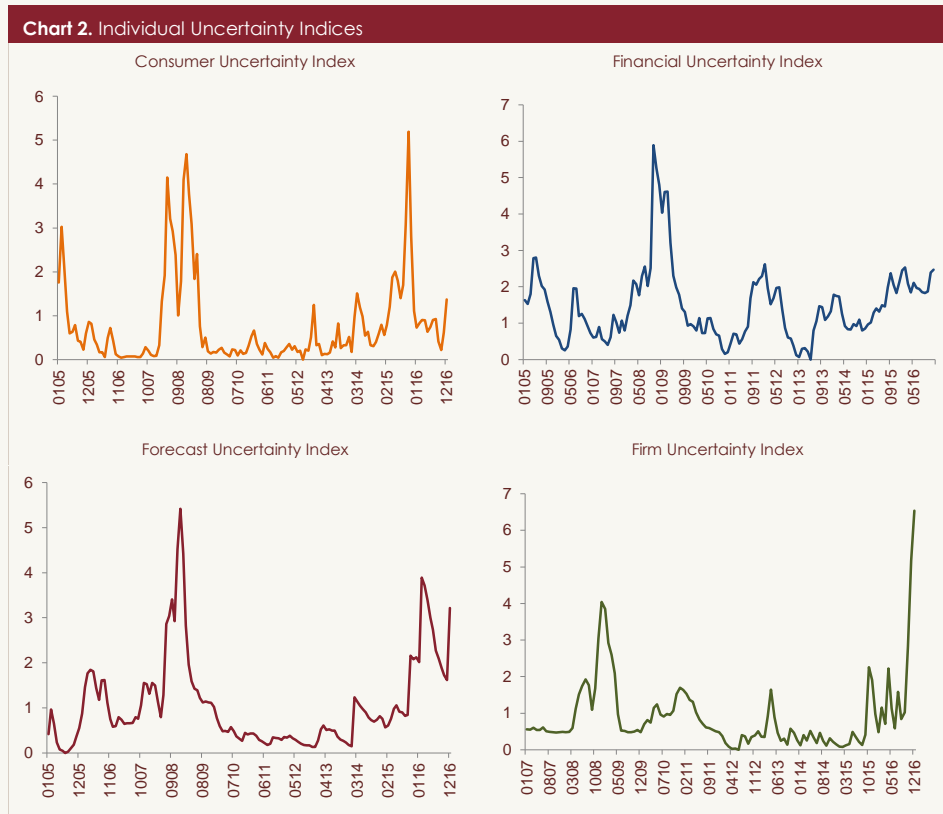
Table 1. Data Description and Sources

Financial Uncertainty Index	Consumer Uncertainty Index	Firm Uncertainty Index	Forecast Uncertainty Index
BIST 100	Consumer confidence index (Bloomberg HT, TURKSTAT-CBRT)	General economic situation expectation in the industrial sector (BTS, CBRT)	12-month-ahead inflation expectation (CBRT Survey of Expectations)
VIX	Financial situation of household for the last 12 months (Bloomberg HT, TURKSTAT-CBRT)	Retail trade confidence index (TURKSTAT)	Year-end expectation for the USD/TL (CBRT Survey of Expectations)
Implied volatility of USD/TL	Financial situation expectation of households for the next 12 months (Bloomberg HT, TURKSTAT-CBRT)	Business volume-sales for the last three months (TURKSTAT)	
EMBI	General economic situation for the last 12 months (Bloomberg HT, TURKSTAT-CBRT)	Expected number of orders placed by suppliers for the next three months (TURKSTAT)	
Interest rate volatility	General economic situation expectation for the next 12 months (Bloomberg HT, TURKSTAT-CBRT)	Business volume-sales expectation for the next three months (TURKSTAT)	
CDS	Convenience of spending on durable goods (Bloomberg HT)		
	Expectation for number of unemployed people (TURKSTAT-CBRT)		
	Probability of buying or building a house (TURKSTAT-CBRT)		

The composite economic uncertainty indicator constructed for Turkey is presented in Chart 1. Accordingly, uncertainty is observed to be higher in periods of recession. This finding is supported by earlier findings by Haddow et al. (2013) as well as Gieseck and Largent (2016), which find similar results for the US, UK and the Euro area during 2008 global crisis. The uncertainty indicator declines during the post-crisis period from 2010 to 2012, but edges up in early 2014. This coincides with heightened global uncertainties driven by taper tantrum and other global factors that fed into elevated domestic uncertainty, resulting in increased risk premium, a depreciated Turkish lira and fluctuating financial markets. Fortunately, the rise in uncertainty was relatively modest and short-lived in this period. Uncertainty was back on an upward track in 2015. The fact that uncertainty indices for the Euro area and the US were dissimilar in this period suggests that the heightening was driven by domestic factors that may have been fueled by geopolitical tensions as well as the general elections in June and November.

Chart 1. Composite Economic Uncertainty Indicator

In 2016, all uncertainty indicators, except for the consumer uncertainty index, were markedly higher than their historical averages. Moreover, the firm uncertainty index displayed a more notable rise, which can be attributed to the deterioration in firms' sentiment over business conditions and the demand outlook (Chart 2). The financial uncertainty index soared probably due to the rising risk premium and volatile exchange rates, while the rise in forecast uncertainty index may be attributed to higher disagreement among forecasters about the future path of the economy. On the other hand, consumer uncertainty was lower in this period compared to past periods.



As a final step, the impact of uncertainty is analyzed by a VAR model including the real exchange rate, the real interest rate and the economic activity indicator, according to the ordering of the variables. Economic activity indicators are comprised of real GDP, consumption and investment.⁵

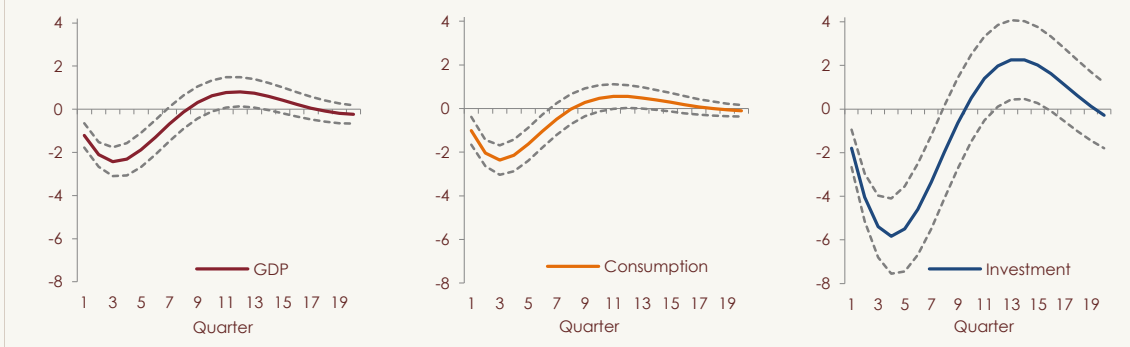
Chart 3 shows the impulse responses of the GDP, private consumption and total investment to a 1-unit uncertainty shock.⁶ As expected, economic activity indicators respond negatively to an uncertainty shock, where the highest impact is observed by the end of three to four quarters. Accordingly, the real GDP and consumption decline by about 2.4 percent at the end three quarters in response to the 1-unit uncertainty

⁵ The GDP, consumption, investment, real exchange rate and real interest rates series were filtered and the cyclical component of the respective series were used in the analysis. Real interest rate is computed by deflating 1-year government bond rate with 12-month-ahead inflation expectation from the CBRT Survey of Expectations.

⁶ The model is estimated using quarterly data for the 2005Q2-2016Q3 period. The variance-covariance matrices of error terms were estimated by the Cholesky decomposition. The ordering of the variables is based on the Granger causality/Block exogeneity test besides theories about the transmission mechanism of uncertainty to other economic variables. To test for robustness, the ordering of the variables was changed, which produced no significant differences in the impulse-response functions. The appropriate lag length of the VAR model is 1, which is set by Akaike information and other selection criteria.

shock. Taking into account the error band, the impulse responses of real GDP and private consumption range between (-1.8, -3.1) and (-1.7, -3.0), respectively. Meanwhile, investment responds more severely to the uncertainty shock. In particular, the maximum impact is observed at the end of four quarters by -5.8 percent, while the response ranges between -4.1 and -7.6 when standard errors are taken into account. The impulse response of economic activity indicators to uncertainty shock dies off in about two years, where that of investment lasts one quarter longer.

Chart 3. Impulse Responses to Uncertainty Shock
(Percentage Points)



In sum, economic uncertainty in Turkey has recently been on the rise. Analysis on the effects of uncertainty on macroeconomic variables suggests that the latest heightening in volatility may weigh on domestic demand and economic activity in the upcoming period.

REFERENCES

- ECB, 2016, The Impact of Uncertainty on Activity in the Euro Area, Economic Bulletin Article, Issue 8, 2016.
- Erdoğan-Coşar, E. and S. Şahinöz, 2017, An Aggregated Uncertainty Indicator for Turkey, Paper in progress.
- Gieseck, A. and Y. Largent, 2016, The Impact of Macroeconomic Uncertainty on Activity in the Euro Area, *Review of Economics*, 67(1): 25-52.
- Haddow, A., C. Hare, J. Hooley and S. Tamarah, 2013, Macroeconomic Uncertainty: What is It, How Can We Measure It and Why Does It Matter?, *Bank of England Quarterly Bulletin*, 53(2): 100-109.

Box
4.2

Alternative Indicators for Output Gap

The output gap is defined as the difference between the actual output and the potential output. Potential output, on the other hand, is defined as the maximum level of goods and services that can be produced in an economy without accelerating the inflation rate. Potential output and the output gap cannot be observed directly. Hence, the output gap is estimated by various methods such as filtering or using production function approach and structural models. Survey indicators may also provide some insight into the output gap.

One common method for estimating the output gap is filtering, which is the decomposition of an output series (usually the GDP) to its long term trend, where the percentage deviation of output from this long-term trend is called the output gap. However, statistical filters such as Hodrick-Prescott (HP) face heavy criticism in the literature as they fail to provide information on the sources of growth (e.g. productivity) and have an end-of-sample bias.^{7,8} On the other hand, given their simplicity and minimum data requirement, central banks generally resort to these filters to measure and monitor the output gap.

In addition to filter-based methods, the output gap may also be estimated by the cyclical indicator approach, which is based on combining different cyclical indicators. These indicators, such as the capacity utilization rate, contain information pertaining to the various sectors of the economy and provide direct information about the phase of the business cycle by showing whether the economic activity is at peak or in contraction, trough or recovery. These indicators are aggregated to form an estimate for the output gap simply by taking their averages or more sophisticatedly by principal component analysis or dynamic factor models.⁹

This box presents output gap measures obtained by two different approaches. First, filter-based output gap indicators are introduced. Next, alternative output gap indicators are presented, which contain direct information about the economic slack. The CBRT utilizes both of these methods for the measurement of the output gap series presented in the Inflation Report.

Filter-Based Output Gap Indicators

In this analysis, the filter-based output gap indicators are estimated by HP and Kalman filters. For the HP, the smoothing parameters are set to 1600, 98 and 19.¹⁰ Output gap estimates obtained by the Kalman filter, which are MNZ, ECB and adapted ECB, are in the spirit of ECB (2015). The output gap is based on the decomposition of the seasonally adjusted GDP series in natural logarithms into its trend and cyclical component. The latter, which corresponds to the output gap, is then modeled using relevant survey indicators. For survey indicators, the analysis uses the answer to the "lack of demand" question concerning factors restraining activity in BTS, the Monthly Tendency Survey for the Services Industry, the Monthly Tendency Survey for Retail Trade and the Monthly Tendency Survey for the Construction Industry.

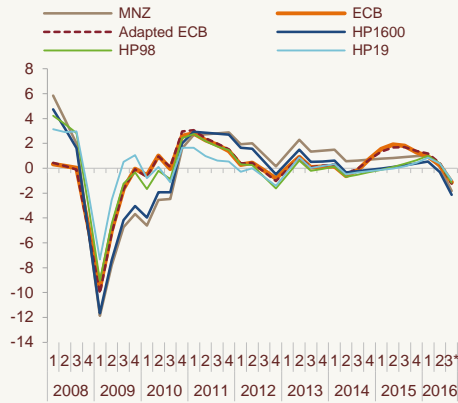
⁷ Statistical filters do not establish a link between inflation and production/productivity. For example, when growth is completely driven by productivity, unit costs will not change and such a growth will not be inflationary.

⁸ The end-of-sample bias occurs when there are significant updates to the output gap as new data are added to the sample. The literature criticizes the estimation of output gap by production function or structural models. For example, as discussed in Garcia-Saltos et al. (2016), the output gap estimated by the production function method relies on potential total factor productivity and potential labor series, which are commonly obtained using a filtering method. For the output gap estimated using structural models, most of the criticism focuses on the structure of these models and the magnitude of shocks.

⁹ For further details, see Aastveit et al. (2008), Rodriguez et al. (2006), McNeilis and Bagsic (2007) and Pybus (2011).

¹⁰ Using the GDP series of the 1987Q1-2007Q3 period, Alp et al. (2011) have shown that the optimal HP-filter smoothing parameters for Turkey are 19 and 98.

Chart 1. Filter-Based Output Gap Estimate Using Old GDP Series (Percent)



* Forecast.
Source: Authors' calculations.

Chart 2. Filter-Based Output Gap Estimate Using New GDP Series (Percent)

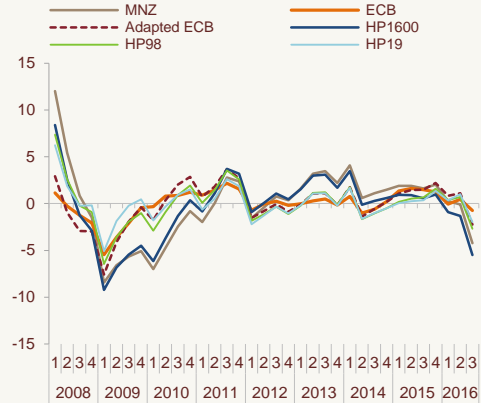
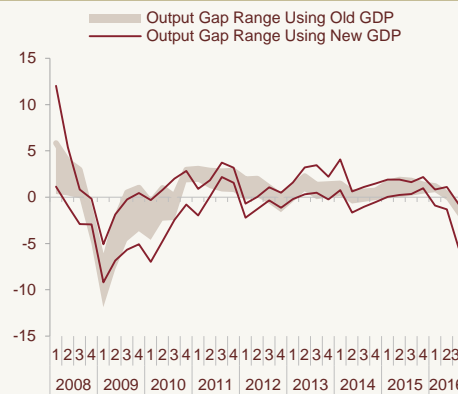
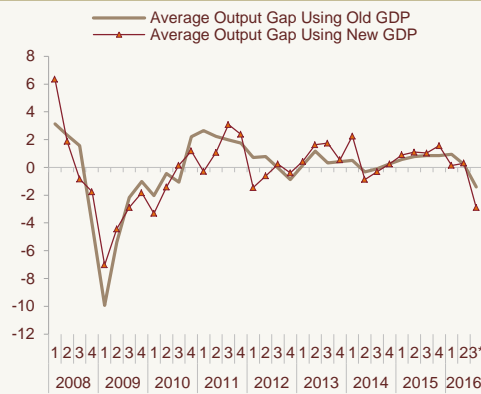


Chart 3. Output Gap Range for Filter-Based Estimates Using Old and New GDP Series (Percent)



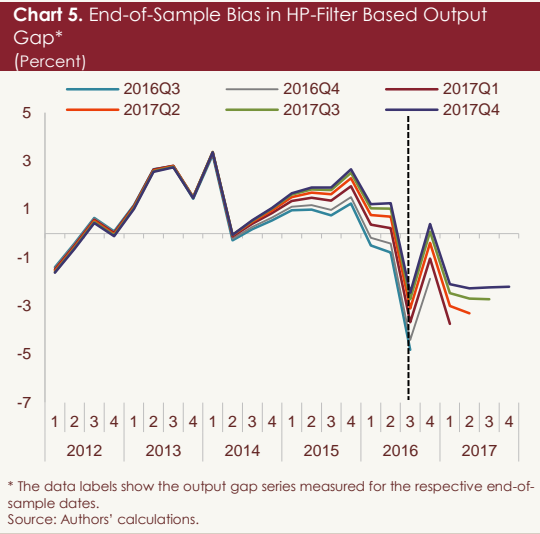
* Forecast.
Source: Authors' calculations.

Chart 4. Average Output Gap for Filter-Based Estimates Using Old and New GDP Series (Percent)



Charts 1 and 2 show filtered-based output gap series estimated using old and new GDP series. Accordingly, two striking observations can be noted. First, the output gap estimate using the old GDP series presents only one trough, which occurs during the global crisis; whereas, the output gap measure based on the new GDP series exhibits two troughs, occurring at close intervals. Secondly, the output gap estimate of the new GDP series is more volatile, which is an important factor for real-time policy actions. In fact, the output gap range, which is constructed using the minimum and maximum values of output gap estimates, reveals that the output gap series based on the new GDP has a wider range in the 2009-2010 period and after 2012. This indicates that the output gap series based on new GDP data has higher uncertainty (Chart 3). Taking the averages of the indicators presented in Charts 1 and 2, the output gap is estimated to be -1.4 by the old GDP data as of the latest observation, and is revised downward to -2.9 percent by the new GDP series (Chart 4).

Another major source of uncertainty in estimating the output gap is the end-of-sample bias, which can be better depicted in Chart 5. In particular, adding quarterly data to the GDP series changes the HP-filtered output gap estimate at the end of the sample. In fact, the output gap is estimated to be -4.8 percent for 2016Q3 – the latest observation available for the current GDP data, while it is -2.5 percent when the sample is extended until 2017Q4 by using forecasts. This suggests that filtered-based output gap estimates are associated with high uncertainty, which hinders real-time policymaking. This prompts policymakers to seek alternative measures, which are exempt from the end-of-sample bias. Alternative indicators presented may help to remedy this problem.



Alternative Output Gap Indicators

In this regard, two alternative output gap indicators are proposed for the Turkish economy. These indicators have the advantage of being exempt from the end-of-sample bias. Also, they are not subject to the uncertainty problem associated with the GDP measurement as these series are produced without using GDP data but rather using other data, which are considered to be directly linked to output gap. Although the contents of the output gap series estimated in this context are the same, the estimation methods are different. The first output gap series is estimated by taking the unweighted average of selected indicators. The second output gap series, on the other hand, shows the common component of selected indicators estimated with the dynamic factor model.¹¹ Indicators used to produce alternative output gap series are shown in Table 1.

Table 1. Direct Output Gap Indicators
PMI-Backlogs of work (Markit)
BTS-Factors restraining production-Lack of demand (inverted, CBRT)
BTS-Duration of production to be sustained by current orders (CBRT)
BTS-Current total orders (CBRT)
Capacity utilization rate in manufacturing (CBRT)
Capacity utilization rate in services (TURKSTAT, CBRT)
Capacity utilization rate in retail trade (TURKSTAT, CBRT)
Capacity utilization rate in construction (TURKSTAT, CBRT)
Household purchasing power (annual percent change, TURKSTAT-CBRT Consumer Tendency Survey)
Application per job vacancy at Kariyer.net (inverted, Kariyer.Net)
Vacancy rate for offices (out of 100, PROPIN)

¹¹ Erdoğan-Coşar et al. (2013) conduct a similar analysis for Turkey. Additionally, Kara et al. (2007), Ögünç and Sankaya (2011), Alp et al. (2012), Üngör (2012) and Erdoğan-Coşar et al. (2013) are other studies measuring the output gap for Turkey.

Direct output gap indicators have signaled a negative and widening output gap outlook since early 2016 (Charts 6 and 7).¹² In average terms, the output gap is around -2.5 percent in the fourth quarter of 2016. In short, alternative output gap indicators point to an increased disinflationary demand conditions in the second half of 2016.

Chart 6. Alternative Output Gap Indicators Using Unweighted Average (Percent)

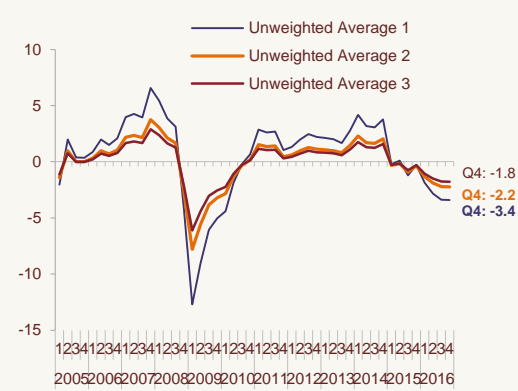
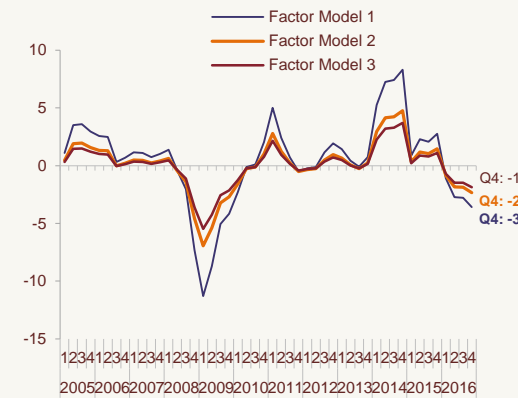


Chart 7. Alternative Output Gap Indicators Using Factor Models (Percent)

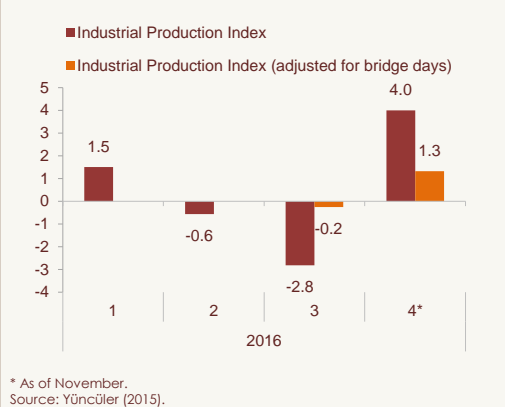


Source: Authors' calculations.

Near-Term Outlook

Industrial production contracted by a quarterly rate of 2.8 percent in the third quarter of 2016. This slowdown was largely attributed to the loss of workdays driven by the extended religious holidays and the mid-July turmoil. Indeed, when adjusted for workday losses beyond regular calendar effects, the underlying activity posted a rather limited contraction. In the fourth quarter, there was a technical recovery owing to the compensation of workday losses, while the underlying trend saw a more modest recovery (Chart 8). In other words, the V-pattern of the industrial production observed in the second half of 2016 mostly reflects workday effects while the underlying trend presents no such fluctuation. Hence,

Chart 8. Quarterly GDP Growth (Percent, Adjusted for seasonal and calendar effects)



* As of November.
Source: Yüncüler (2015).

output gap estimates should be based on the underlying trend rather than temporary fluctuations in the economic activity. Despite the predicted rapid recovery for the fourth quarter of 2016, which mostly reflects the compensation of the workday losses, the assumptions are unchanged, which foresee a modest underlying economic activity and a widening output gap in the second half of 2016. The average of the quarterly growth rate in the first and second half of 2016 also points to a modest path regarding the pace of the recovery in the economic activity.

¹² The scale of the estimated output gap indicators was aligned with the GDP cycles. The GDP cycles are estimated by the HP filter to calculate the trend component. The scale of the series in Charts 6 and 7 was aligned with GDP cycles using smoothing parameters set at 1600, 98 and 19, respectively.

In conclusion, output gap measurement presents some uncertainties due to data revision, the estimation methodology and the phase of the business cycle. Yet, using different approaches, it can be assessed that economic activity put an increased downward pressure on inflation through the second half of 2016. The same conclusion can be reached with an alternative approach that eliminates uncertainties regarding data revision and estimation methodology. Accordingly, the initial point of the output gap forecasts presented in Chapter 7 is set by taking into account these assessments as well as the judgmental forecasts.

REFERENCES

- Aastveit, K.A. and T.G. Trovik, 2008, Can Factor Models Improve Output Gap Estimates in Real Time?, Paper presented in International Symposium on Forecasting, 22-25 June 2008, Nice, France.
- Alp, H., Y.S. Başkaya, M. Kılınc and C. Yüksel, 2011, Türkiye için Hodrick-Prescott Filtresi Düzgünleştirme Parametresi Tahmini (in Turkish), CBT Research Notes in Economics No: 11/03.
- Alp, H., F. Öğünç and Ç. Sankaya, 2012, Monetary Policy and Output Gap: Mind the Composition, CBT Research Notes in Economics No: 12/07.
- ECB, 2015, A survey-based measure of slack for the Euro area, Box 6, Economic Bulletin 6/2015.
- Erdoğan-Coşar, E., S. Kösem and Ç. Sankaya, 2013, Do We Really Need Filters In Estimating Output Gap?: Evidence From Turkey, CBRT Working Paper No: 13/33.
- Garcia-Saltos, R., I.R. Teodoru and F. Zhang, 2016, Potential Output Estimates for Central America and the Dominican Republic, IMF Working Paper No: 16/250.
- Kara, H., F. Öğünç, Ü. Özlale and Ç. Sankaya, 2007, Estimating the Output Gap in a Changing Economy, Southern Economic Journal, 74(1): 269-289.
- McNelis, P.D. and C.B. Bagnic, 2007, Output Gap Estimation for Inflation Forecasting: The Case of the Philippines, Bank of Philippines Working Paper No: 2007/01.
- Öğünç, F. and Ç. Sankaya, 2011, Görünmez ama Hissedilmez Değil: Türkiye'de Çıktı Açığı (in Turkish), Central Bank Review, 11(2): 15-28.
- Pybus, T., 2011, Estimating the UK's Historical Output Gap, Office for Budget Responsibility, Working Paper No: 1.
- Rodríguez, N., J.L. Torres and A. Velasco, 2006, Estimating an Output Gap Indicator Using Business Surveys and Real Data, Bank of Colombia Working Paper No: 392.
- Üngör, M., 2012, A Production Function Method of Estimating the Output Gap, CBT Research Notes in Economics No: 12/19.
- Yüncüler, Ç., 2015, Estimating the Bridging Day Effect on Turkish Industrial Production, CBT Research Notes in Economics No: 15/15.

Box
4.3

The Weakening Real External Trade Deficit-GDP Relationship and Loan Growth

This box discusses the weakening relationship between the real external trade deficit and the GDP growth in Turkey over the past few years, and also analyzes how this relation can be linked to loan growth. The real external trade deficit is derived from the real export and import series, which are obtained by using the annual percentage changes in TURKSTAT's export and import quantity indices. Using real series provides a more reliable picture about the relationship between the GDP and the external trade deficit as it eliminates the terms of the trade effect. Meanwhile, gold trade is excluded from the measurement of the real external trade deficit given its high volatility and low correlation with economic activity.

Chart 1 shows the change in the real external trade deficit excluding gold and the GDP growth¹³, which presents two major evidences. First, the long-term course of both the real external trade deficit and the real GDP growth point to a contemporaneous and positive correlation between both series. Second, although the real external trade deficit growth is larger than the real GDP growth in terms of historical averages, it has remained below the GDP growth recently. In other words, looking at the Turkey's high-growth periods during (2003-2007) and (2011-2015), the increase in real external trade deficit in response to a 1-percent GDP growth appears to decrease over time. For example, while the Turkish economy grew by 7.3 percent on average in the 2003-2007 period, the real external trade deficit expanded by an average of 30.6 percent. In the 2011-2015 period, the GDP grew by 7.2 percent on average, whereas the real external trade deficit widened by only 5.7 percent.

Imports play a major role in the contemporaneous movement and weakening correlation of growth and real external trade deficit (Chart 2). Although historically, GDP has grown at a slower pace than imports, this has been reversed since the first quarter of 2012, which suggests that the relationship between the real external trade deficit and the GDP has markedly weakened in the recent past.

Chart 1. Real External Trade Deficit and GDP Growth
(Annual Percent Change)

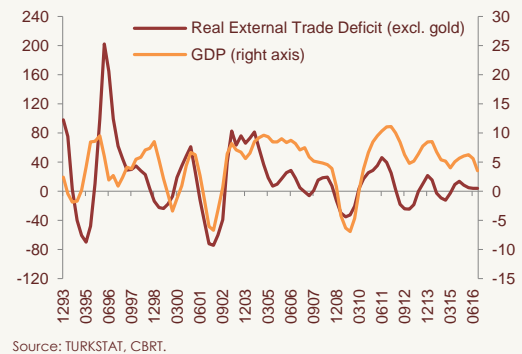
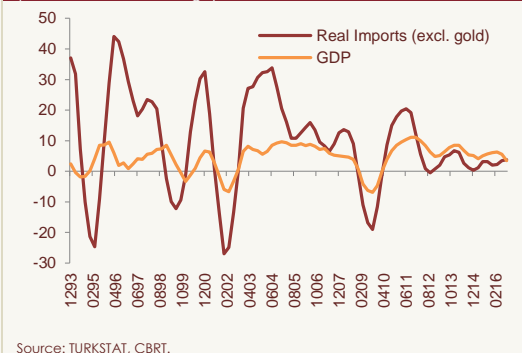
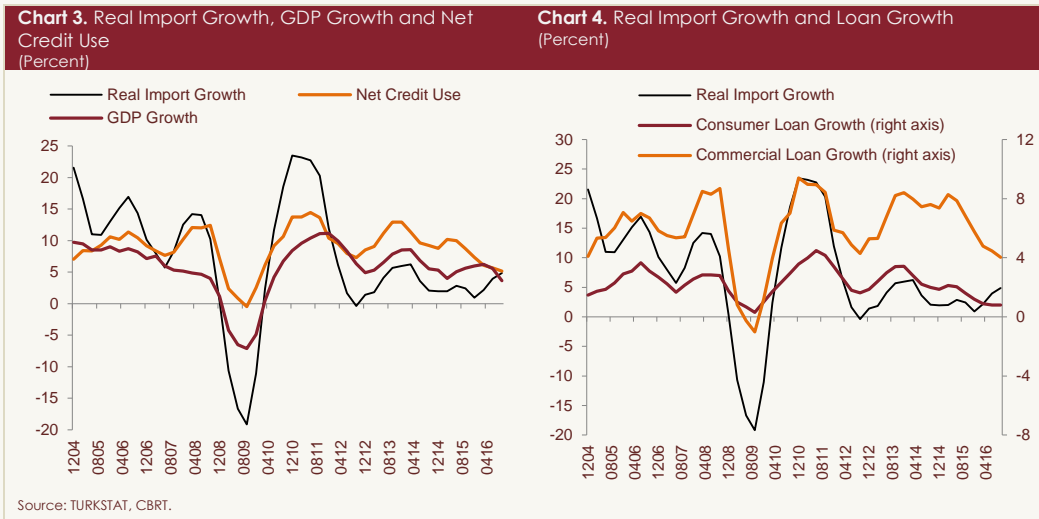


Chart 2. Real Imports and GDP
(Annual Percent Change)



¹³ For annual domestic income growth, the annual changes in the TURKSTAT's new chained volume indices is used, while old GDP series based on 1987 prices are used for growth rates before 1998.

The recent weakening in the real external trade deficit and the GDP relationship appears to be linked to net credit use and loan type (Charts 3 and 4). Therefore, the relationship between the real import growth and net credit use is analyzed, using the ratio of the annual changes in the domestic credit stock to the GDP as a measure for credit use. Accordingly, a strong correlation is observed between real import growth and net credit use. This is also supported by earlier CBRT studies, which demonstrate that loan growth is strongly correlated with the GDP and the current account deficit (Küçük-Yeşil et al., 2017; Kara and Tiryaki, 2013; CBRT, 2011). The relationship between the real GDP and net credit use remains mostly unchanged in the 2004-2016 period, whereas the link appears to have grown weaker since the first quarter of 2012. Another major finding is that the relationship between net credit use and real import growth differs considerably depending on the loan type. In particular, real import growth seems to diverge from net credit use for the case of commercial loans after 2012. In fact, hovering close to 2004-2007 levels, commercial loan growth remains robust after 2012, whereas real import growth plunges in the same period. On the other hand, real import growth exhibits a stronger correlation with consumer loans, where both series follow a similar downtrend after 2012.

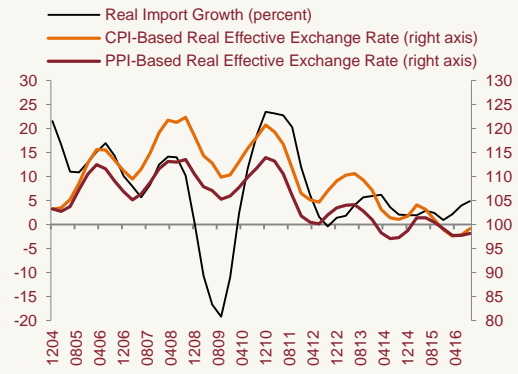


The relationship between real import growth and loan growth diverges across loan type due to the fact that both consumer and commercial loans have direct and indirect effects on import growth, yet through different channels. In particular, an increase in consumer loans stimulates imports directly by increasing the demand for imports of consumption goods. Moreover, consumer loan growth induces demand for imports of intermediate and investment goods in sectors sensitive to domestic demand and having high dependence on imported inputs, which therefore increases imports indirectly. A rise in commercial loans, on the other hand, might stimulate the imports of intermediate and investment goods in the short term, but would reduce the need for imports by exerting a favorable effect on the GDP and exports through increased production in the medium to long term.

Meanwhile, in analyzing the recently weakening link between real import growth and the GDP growth, the real exchange rate should also be taken into account. Both the CPI and the PPI-based real exchange rate indices have been trending down since 2011. Accordingly, the CPI-based real effective exchange rate dropped by 8 percent from 112.8 in the 2004-2011 period to 103.6 in the 2012-2016 period, where the real effective exchange rate depreciated in tandem with the decelerating real import growth (Chart 5). Thus, the decline in the real import growth can be partly explained by the depreciating real exchange rate.

To sum up, the fact that the growth in consumer loans remained more modest than that for commercial loans due to macroprudential policies in place since 2011 had a dampening effect on real import growth, which also led to weaker relationship between real external trade deficit and GDP growth. Recently, both the economic slowdown and the exchange rate developments weigh upon imports. Moreover, consumer loan growth has declined to record-lows as of July 2016. This created some room for maneuver to bring consumer loans up to moderate levels, allowing for the withdrawal of a majority of tightening macroprudential policies in the second half of 2016. The measures taken to bolster consumer loans are expected to stimulate economic activity in the upcoming period without posing any major risk to the current account deficit.

Chart 5. Real Import Growth and Real Effective Exchange Rate



Source: TURKSTAT, CBRT.

REFERENCES

Kara, H. and S.T. Tiryaki, 2013, Kredi İvmesi ve İktisadi Konjonktür (in Turkish), CBT Research Notes in Economics No: 13/10.

Küçük-Yeşil, H., P. Özlü and Ç. Yüncüler, 2017, Alt Kalem Ayrımında Kredi ve İktisadi Faaliyet İlişkisi (in Turkish), Paper in progress.

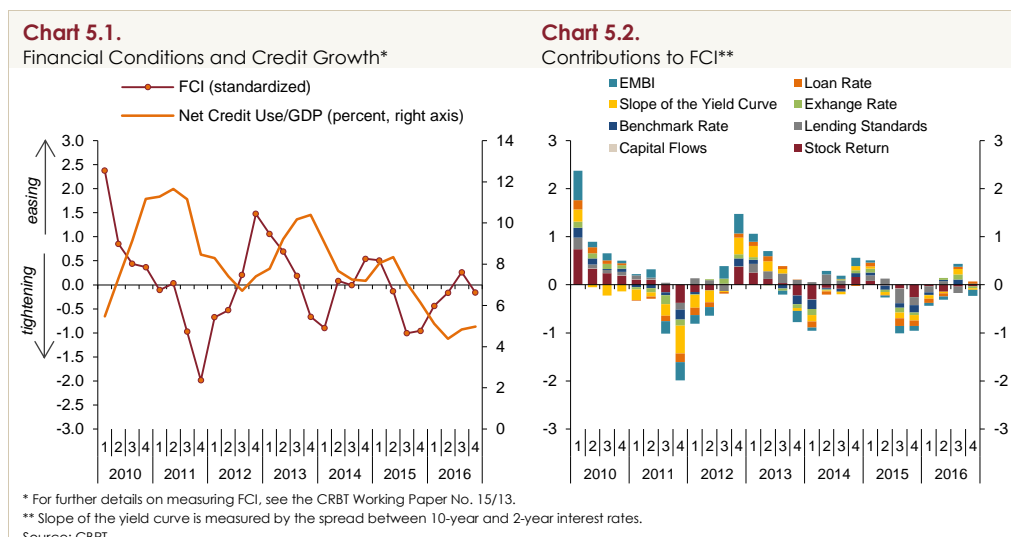
CBRT, 2011, Credit Expansion and the Current Account Deficit, Box 5.1, Inflation Report 2011-II.

5. Financial Markets and Financial Intermediation

Global economic uncertainty intensified following the US presidential election in November 2016, fostering expectations for a more aggressive tightening by the Fed in 2017. Accordingly, interest rates in advanced economies increased in the fourth quarter and the US dollar appreciated. These developments led to strong portfolio flows from emerging economies to advanced economies as of November 2016. The rise in global interest rates and the appreciation of the US dollar have a particularly strong impact on emerging economies with high external debt.

The volatility in global markets has had an adverse impact on emerging economies, including Turkey. Yet, with respect to exchange rate and market rates, the Turkish economy was affected even more negatively than peer economies due to geopolitical tensions, domestic uncertainty and soaring energy prices. On the other hand, the recent surge of portfolio flows to Borsa Istanbul indicates the confidence of foreign investors in the medium and long-term growth prospects for the Turkish economy. Credit conditions have shown some recovery thanks to macroprudential policies that support the financial system, the lagged effects of the CBRT's liquidity measures and accommodative policies. In the fourth quarter of 2016, loan growth remained on a moderate uptrend on the back of the recovery in consumer loans and TL-denominated commercial loans. Moreover, due to the government's loan support to businesses, interest rates on commercial loans to SMEs are on the decline.

The FCI, which reflects all these developments in a nutshell, stood slightly below the neutral mark in the fourth quarter of 2016 (Chart 5.1). The loan rate provided only a small positive contribution to the index, whereas the contribution of lending standards, capital flows and the benchmark rate remained flat, and the stock return, the real exchange rate, EMBI and the slope of the yield curve had a downward impact on the index in the fourth quarter (Chart 5.2).



To contain the negative effects of global and domestic financial market volatilities on FX markets and credit conditions, the CBRT maintained a stabilizing stance for FX liquidity and a supportive stance for financial stability. Moreover, in order to restrict the adverse impact of exchange rate

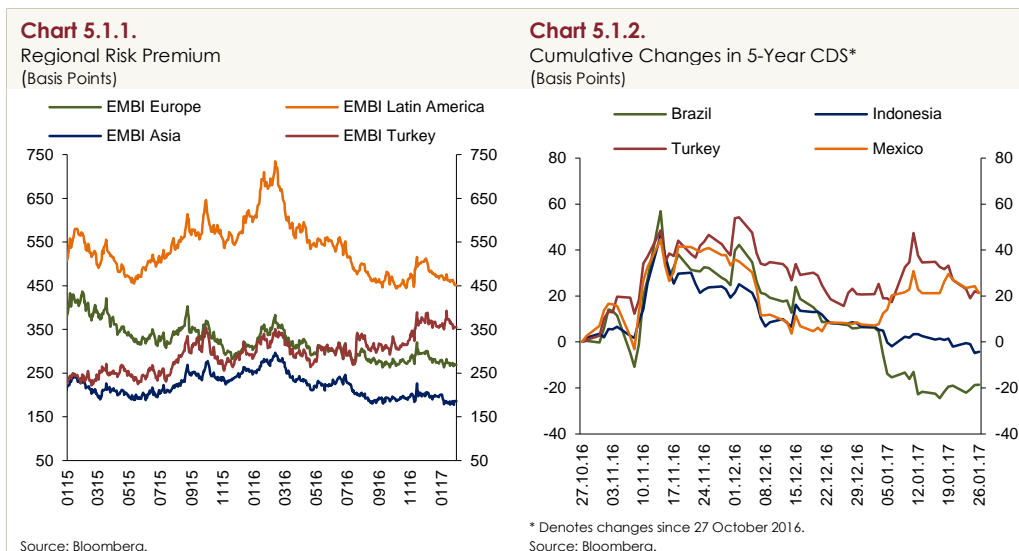
developments spurred by heightened global uncertainty and volatility on inflation expectations and the pricing behavior, the CBRT opted for some monetary tightening in November. The CBRT also stated that exchange rate developments and soaring oil prices posed upside risks to inflation, which, however, remained restricted due to aggregate demand conditions. To monitor the overall effect, the CBRT kept interest rates unchanged in December.

The CBRT adopted comprehensive liquidity measures in mid-January to eliminate the impact of the volatility in the exchange rate and price formations detached from economic fundamentals on price stability and financial stability. Moreover, at the January MPC meeting, the CBRT decided to impose more aggressive tightening upon projecting that inflation may continue to rise in the short term due to the lagged effects of the exchange rate and the volatility in unprocessed food prices. Recently, the yield curve has flattened considerably amid the CBRT's policies.

5.1. Relative Performances of Financial Markets

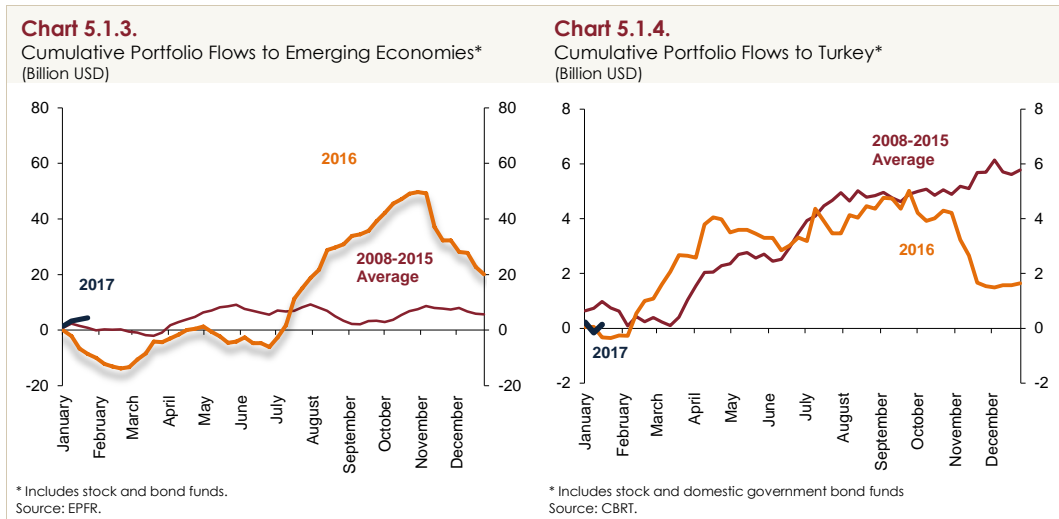
Risk Perceptions

Following the presidential election in early November, the statements by Trump favoring increased protectionism in the US deteriorated the risk sentiment towards emerging economies, particularly for China and Mexico (Chart 5.1.1). Turkey moved similar to Mexico and the risk sentiment worsened due to sluggish economic activity, domestic developments and geopolitical risks in the inter-reporting period (Chart 5.1.2).



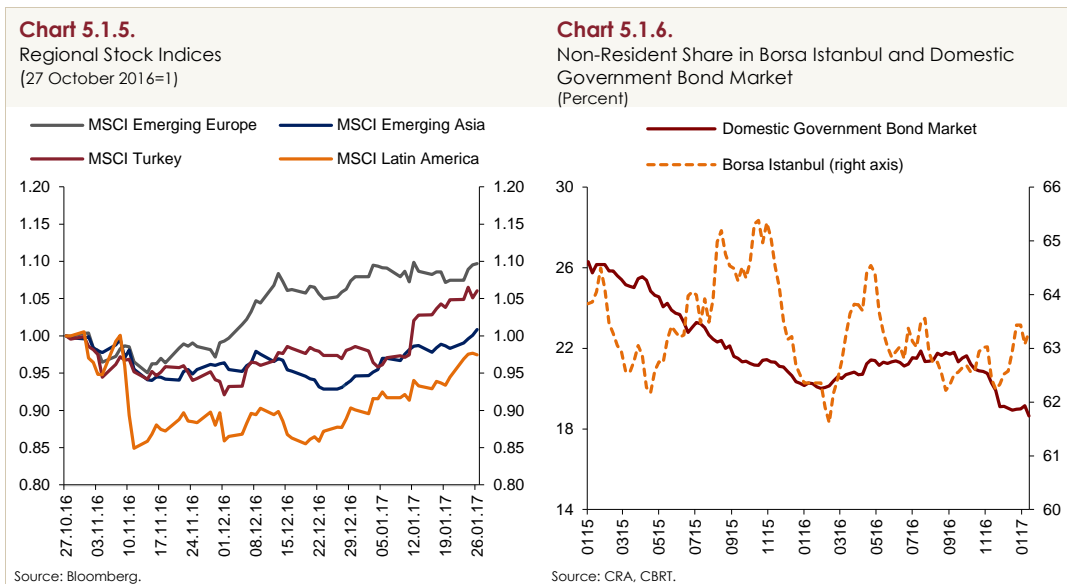
Portfolio Flows

The accelerated growth prospects in the US backed by accommodative fiscal policies and prospects for a faster-than-expected Fed rate hike pushed short-term portfolio flows to advanced economies, which led to outflows of funds from emerging economies in November and December 2016 (Chart 5.1.3). Turkey also experienced portfolio outflows in the same period and cumulative capital inflows since the start of the year lagged behind past years' averages (Chart 5.1.4). In terms of fund composition, recent portfolio outflows from Turkey have mostly been observed in the domestic government bond market.



Stock Indices

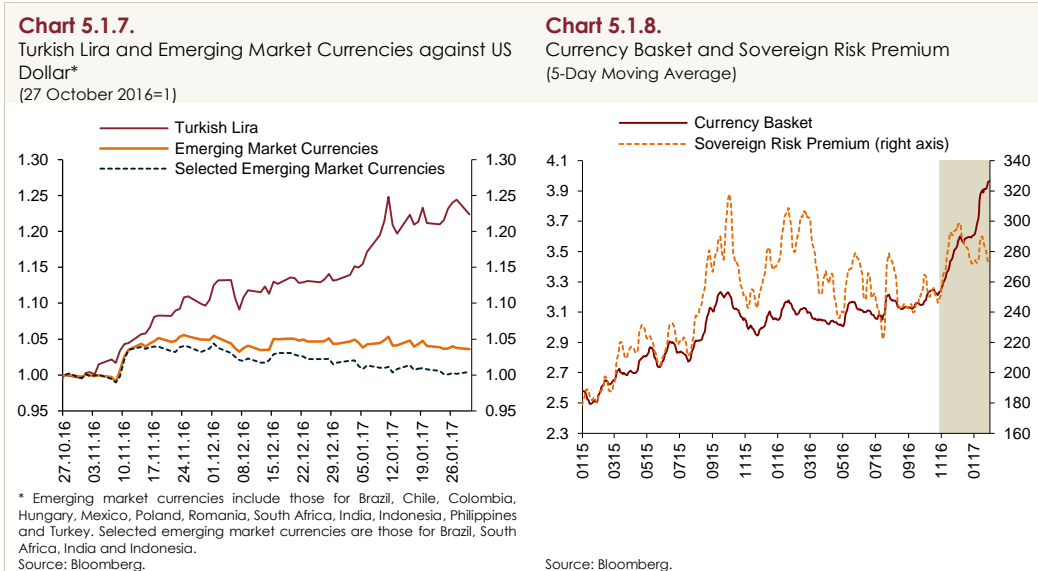
Portfolio outflows from emerging economies in November also resulted in a decline in stock indices. Stock prices in Latin American countries, which are relatively more inflicted by the developments in the US, have performed worse since the previous reporting period (Chart 5.1.5). On the other hand, unlike other financial indicators, stock prices in Turkey performed better than emerging economies on average. In fact, the domestic government bond market, which is more adversely affected by outflows, witnessed a decline in non-resident share, whereas the stock market recorded an upswing (Chart 5.1.6).



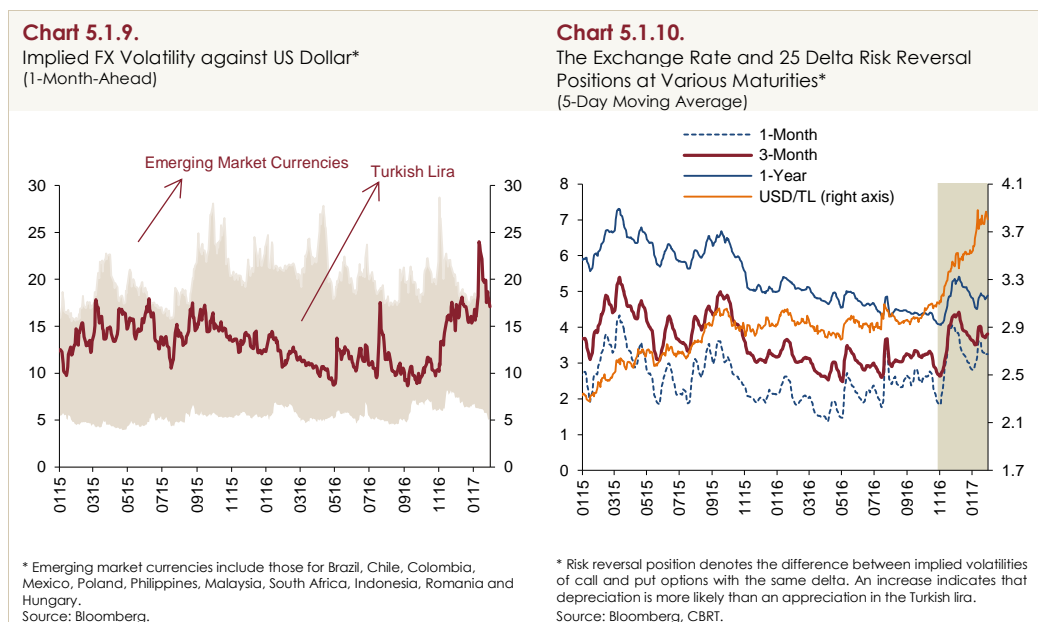
Exchange Rates

Currencies of emerging economies depreciated against the US dollar considerably due to global economic uncertainties accompanied by the increases in policy rates of advanced economies (Chart 5.1.7). In this period, currencies of commodity-exporting countries such as Brazil, South Africa, India and Indonesia performed better than other emerging economies on the back of the recovery in

commodity prices. On the other hand, Turkish lira diverged negatively from other emerging market currencies due to escalated domestic uncertainties, geopolitical tensions and soaring energy prices. The depreciation of the Turkish lira was interrupted by the recent tightening in monetary policy. Meanwhile, the sovereign risk premium in Turkey was affected less adversely than the exchange rate in the inter-reporting period (Chart 5.1.8).

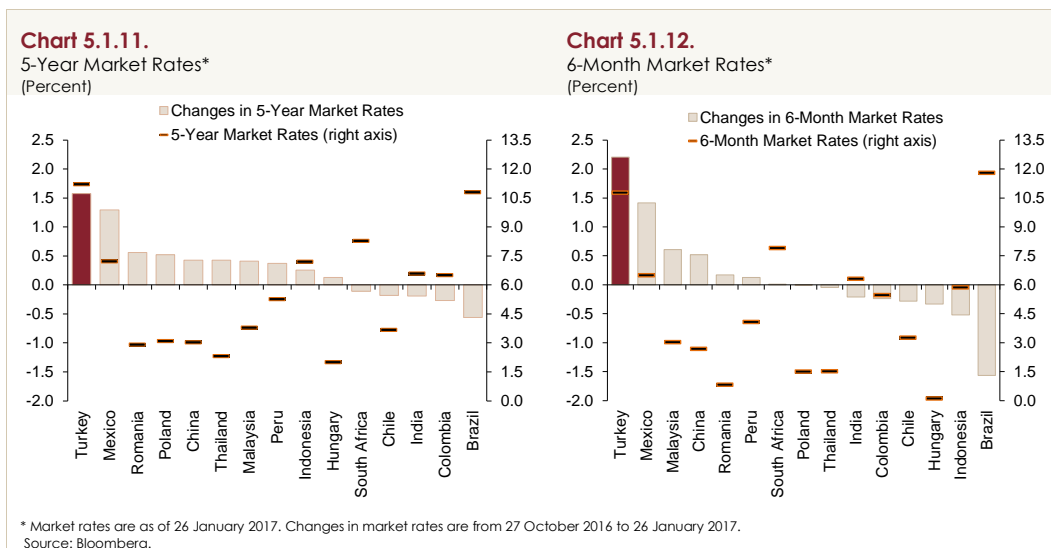


In the last quarter of 2016, implied exchange rate volatility of emerging market currencies followed a fluctuating course. Following the US presidential election, implied exchange rate volatility leapt due to worsened risk sentiment regarding emerging economies, but receded to pre-election levels in January. As for the Turkish lira, implied volatility remained relatively high until mid-January and decreased slightly after the monetary tightening in January (Chart 5.1.9). Risk reversal positions, which have been flat until the elections in the US, rose considerably after the elections but have recorded a decline thanks also to the recently enforced policy measures (Chart 5.1.10).



Market Rates

Since the October Inflation Report, market rates of emerging economies have been largely shaped by expectations regarding the monetary policy in advanced economies, the US in particular, and the US elections. Meanwhile, both short and long-term interest rates have increased in many countries. Mexico, the most inflicted economy by the US elections, witnessed hikes in market rates both in the short and long term, whereas Brazil, which implemented rate reductions, saw falling market rates (Charts 5.1.11 and 5.1.12). Owing to the January monetary tightening, short-term market rates increased, but long-term rates saw a relatively limited pick-up in Turkey.

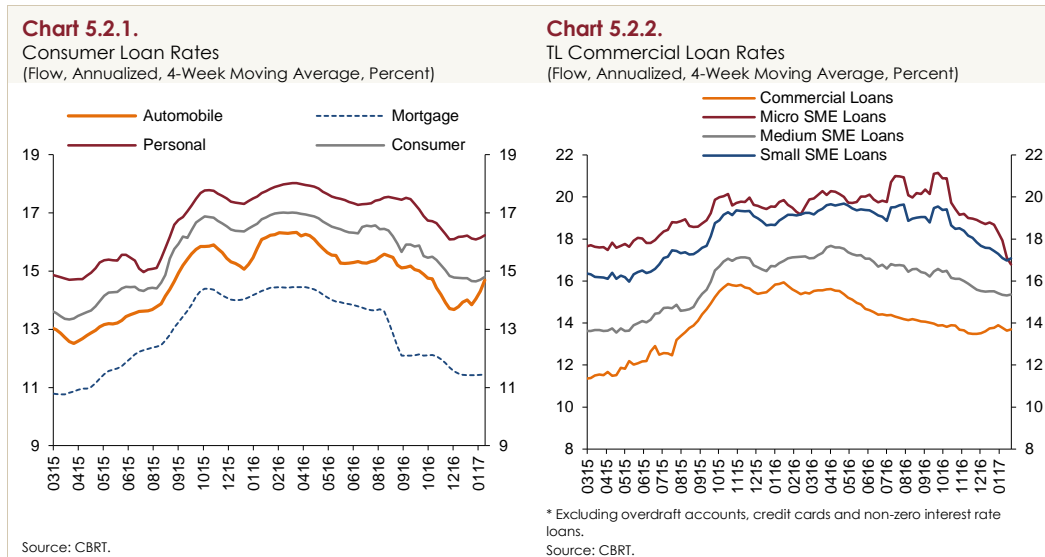


5.2. Credit Conditions

Loan Rates, Funding Costs and Interest Rate Spreads

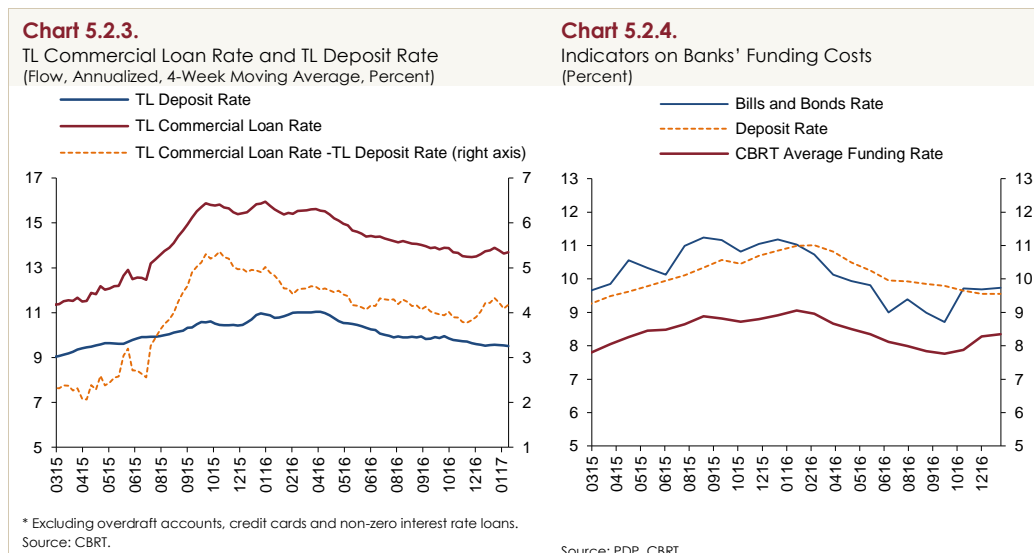
The downtrend in consumer loan rates observed since the second quarter of 2016 lost pace in the last quarter of the year. The fall in mortgage loan rates has continued, but automobile and personal loan rates inched up in December (Chart 5.2.1). The average consumer loan rate exhibited a quarter-on-quarter decline by about 120 basis points, reaching 14.7 percent by the year-end.

The ongoing downtrend in commercial loan rates has been more limited in the last quarter of the year. Despite a drop by 50 basis points at the end of November from the end of the third quarter, commercial loan rates displayed a slight pick-up in the succeeding period. TL commercial loan rates extended to SMEs registered a decline in the last quarter of the year due to the accommodative policies. The average TL commercial loan rate stood at 13.9 percent at the end of the year (Chart 5.2.2).



Rates on deposits with maturities shorter than three months, which are the primary funding source of the banking sector, remained unchanged in the fourth quarter of 2016. As commercial loan rates increased, the spread between commercial loan rates and deposit rates rose by 34 basis points to 433 basis points in the last quarter of 2016 (Chart 5.2.3). The loan-deposit rate spread remains high compared to its historical averages.

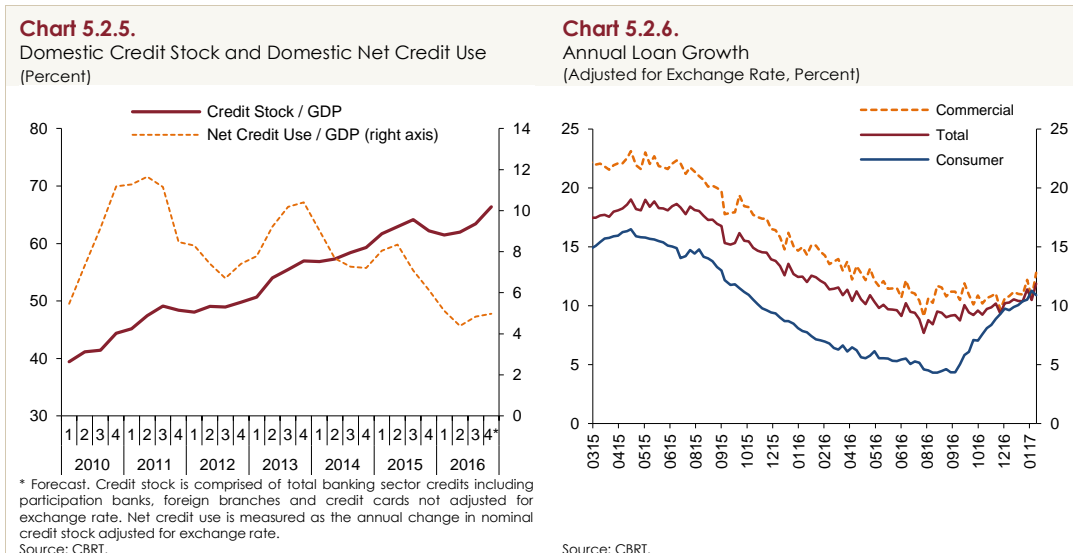
In November and December 2016, the downtrend in deposit rates lost momentum, while banks' non-deposit funding costs escalated (Chart 5.2.4). Accordingly, deposit rates remained relatively flat. Meanwhile, the aggressive tightening in the monetary policy as well as the rigidity in financial conditions resulted in an increase in both the CBRT's average funding rate and rates on bills and bonds issued by banks.



Credit Volume

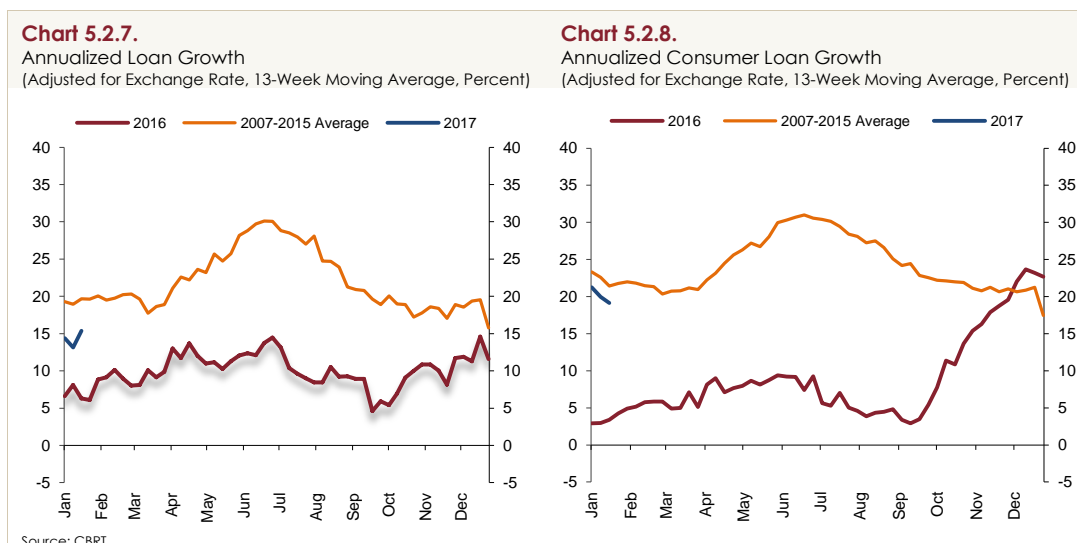
In the fourth quarter of 2016, the accommodative macroprudential policies, the CBRT's liquidity measures and government incentives led to a moderate increase in credit growth. The ratio of net

credit use to the GDP, which is critical as a measure of financial stability also summarizing the relation of credit growth with economic activity and aggregate demand, inched up to 5 percent in the fourth quarter of 2016 (Chart 5.2.5).

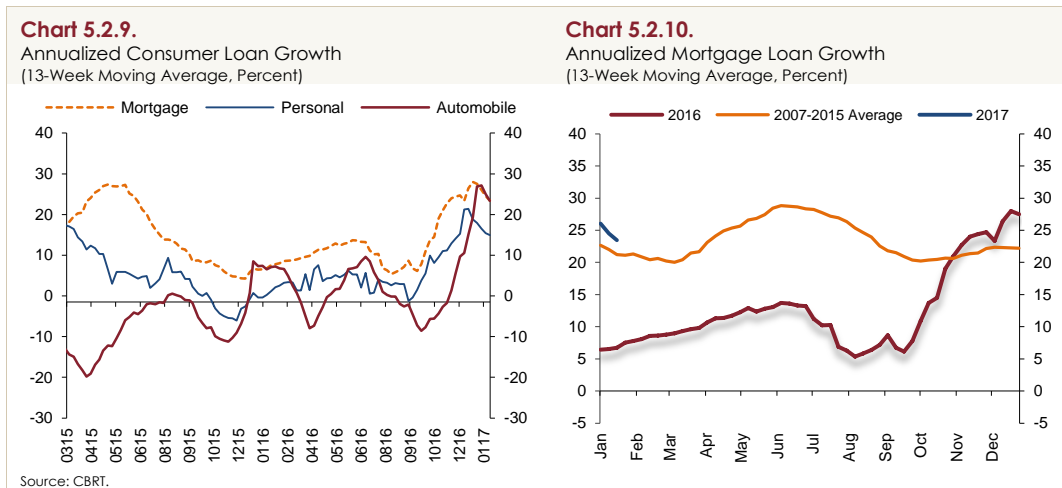


Across sub-items of loans extended to the non-financial sector, the annual growth of commercial loans displayed a limited increase in the last quarter of the 2016, while consumer loans continued to grow at an accelerated pace owing to the partial recovery in consumer confidence as well as the lagged effects of the arrangements on consumer loans (Chart 5.2.6). As of year-end, total loans posted an annual increase by 10 percent in exchange-rate-adjusted terms.

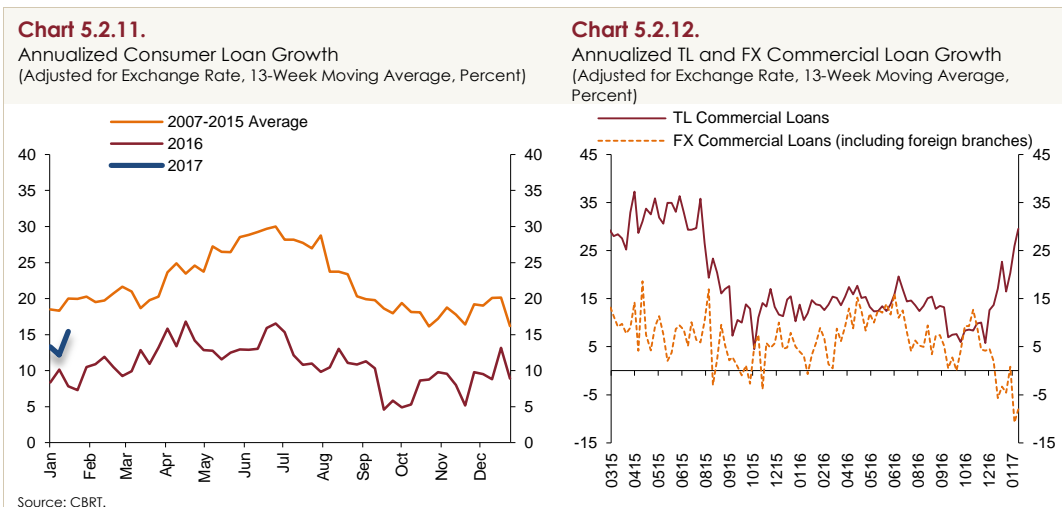
After edging down in the third quarter of 2016 due to seasonal factors, the annualized growth rate of total loans increased in the last quarter and reached 11.6 percent at the year-end. Total loans continued to increase in the first weeks of 2017 on the back of the higher-than-average jump in consumer loans in the last quarter of the year (Charts 5.2.7 and 5.2.8).



The breakdown of consumer loans suggests that the increase spilled over across the sub-items, with mortgage loans particularly growing at a faster pace above historical averages (Chart 5.2.9). As of the year-end, the annualized growth rate of mortgage loans reached 27.5 percent, while it hovered around 23 percent in the early weeks of 2017 (Chart 5.2.10). The annualized growth rate of personal loans also recorded a robust increase in the last quarter and stood around 18 percent as of year-end. In the meantime, demand was brought forward upon the announced SCT rate hike, which pushed the annualized growth rate of automobile loans above past averages up to 27 percent at the year-end.



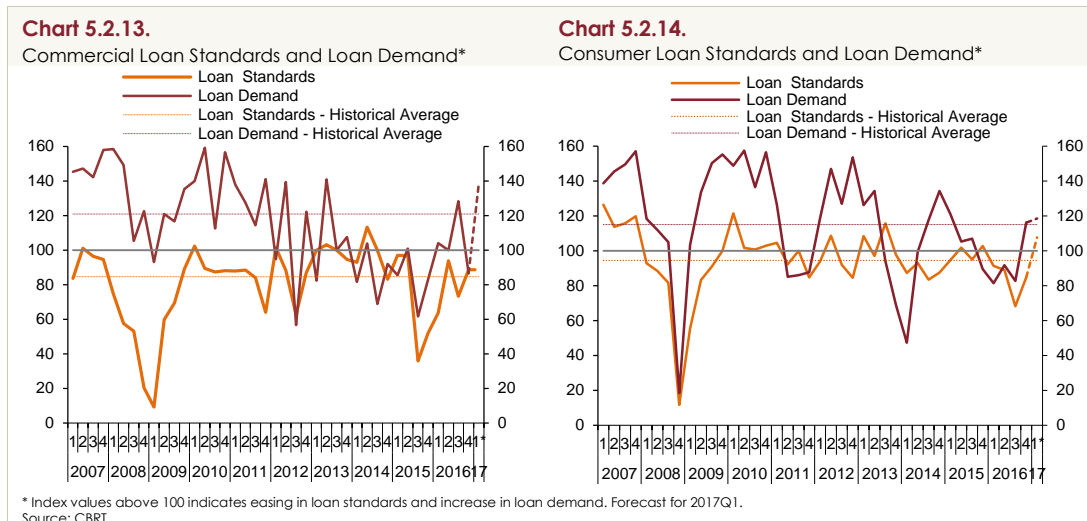
The annualized growth rate of commercial loans remained below past averages in the fourth quarter of 2016 (Chart 5.2.11). Meanwhile, the growth rate of total commercial loans registered a year-on-year upturn in early 2017. Sub-items of commercial loans reveal that the rise in the annualized growth rate of FX-denominated commercial loans dropped below zero due to exchange rate developments, aggravated costs of FX funding and the languishing investment appetite in the last quarter of the year. Meanwhile, in the same period, the annualized growth rate of TL-denominated commercial loans that are mostly used in financing business capital posted an increase owing also to the accommodative fiscal policies. The uptrend continued in the early weeks of 2017 and the growth rate of TL-denominated commercial loans stood around 30 percent as of 20 January (Chart 5.2.12).



Loan Standards

Results of the Loan Tendency Survey in the final quarter of 2016 indicate that commercial loan standards tightened further (Chart 5.2.13). On the other hand, historical averages suggest that commercial loan standards remained virtually unchanged. Commercial loan standards present a similar outlook in terms of scale, maturity and currency denomination, albeit displaying a more marked tightening in long term. According to banks, expectations for overall economic activity and the riskiness of business collaterals were the main drivers of tightening in commercial loan standards. In addition, collateral conditions for commercial loans were tighter in this period.

Banks responding to the survey indicated that loan demand declined in the fourth quarter (Chart 5.2.13). Across scale, loan demand from SMEs recorded an increase. In terms of maturity and currency denomination, the demand for both short-term loans and TL-denominated loans surged while long-term loans and FX-denominated loans posted a decline. The reason for the contraction in loan demand is the sluggish course of fixed investments. The need for debt restructuring remained as a factor to stimulate loan demand in the last quarter. Banks expect that commercial loan standards will tighten further in the first quarter of 2017, while the loan demand of businesses will increase. Banks' expectations for the first quarter of 2017 indicate that loan standards for SMEs will remain unchanged and the loan demand of SMEs will continue to grow.

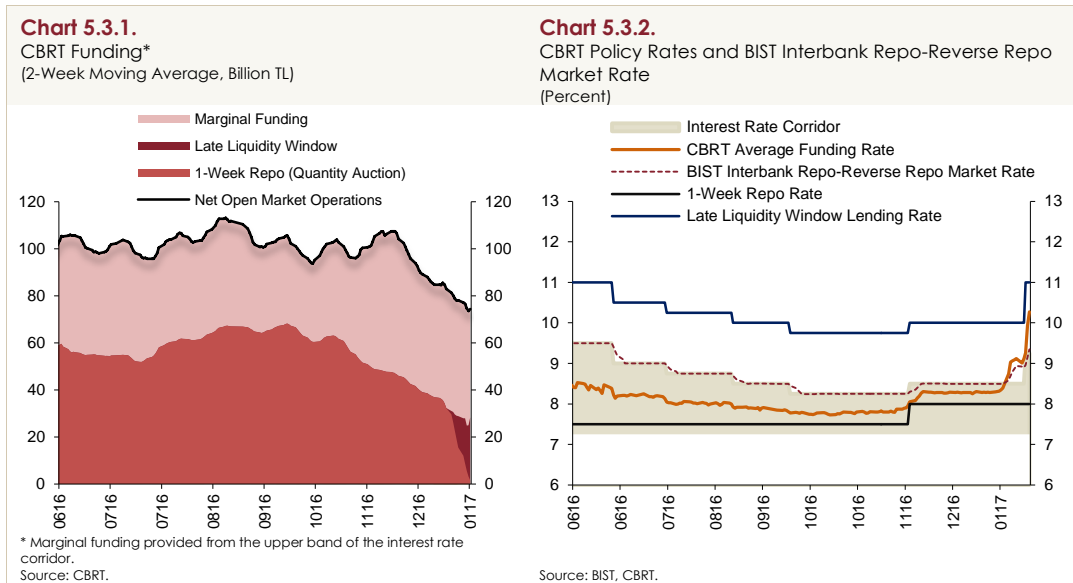


As for consumer loans, results of the Loan Tendency Survey indicate that loan standards tightened further across all sub-items of consumer loans in the fourth quarter of 2016 (Chart 5.2.14). Consumer loan demand suggests that demand for mortgages and personal loans recorded an increase in this period. According to banks, consumer confidence proved the leading factor to drive mortgage loan demand down, while expectations regarding the housing market drove it up. As for personal loans, individual savings gave a push to demand. On the consumer loans front, expectations of banks for the first quarter of 2017 suggest an easing in standards only in mortgage loans and an increase across all types of consumer loan demand.

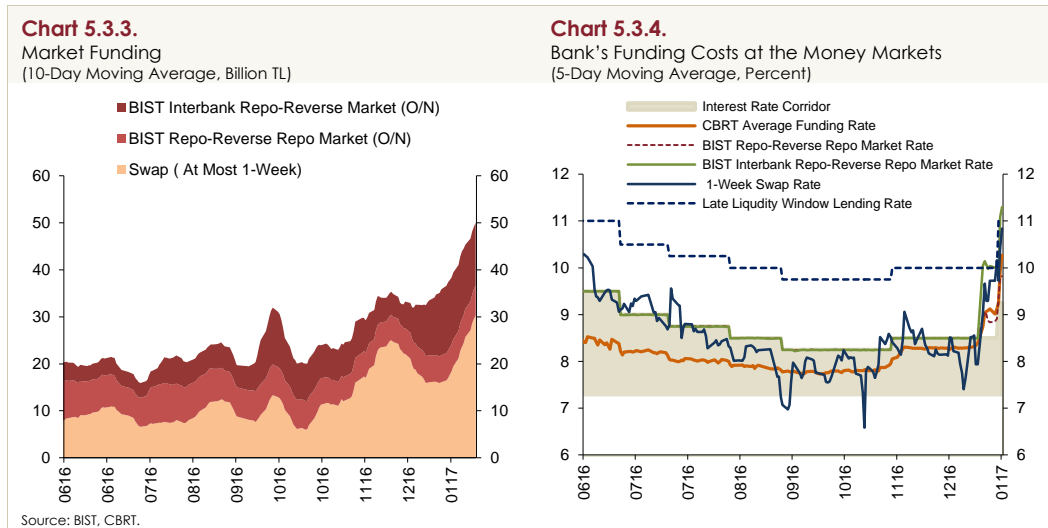
5.3. Monetary Policy

Market Developments

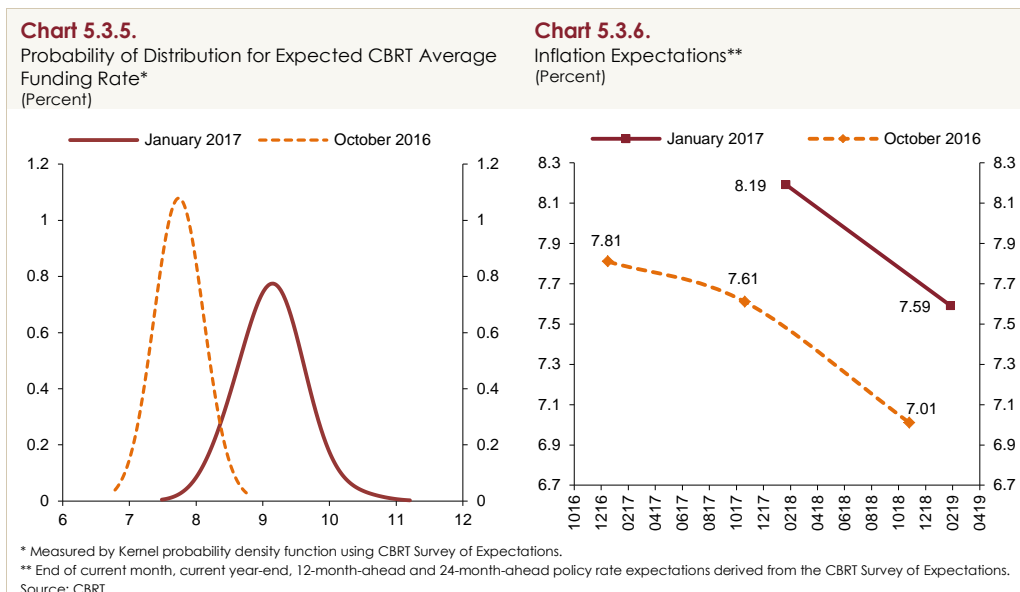
The CBRT funding was made through 1-week repo auctions through 2016 (Chart 5.3.1). At the November MPC meeting, 1-week repo and marginal funding rates were raised, which was reflected in the CBRT average funding rate as well (Chart 5.3.2). After 12 January 2017, the CBRT average funding rate and the overnight rates at the BIST Interbank Repo-Reverse Repo Market surged amid the suspension of 1-week repo auctions and the adoption of other liquidity policies. From 17 January onwards, the late liquidity window has also been used to meet some of the funding requirements, when deemed necessary.



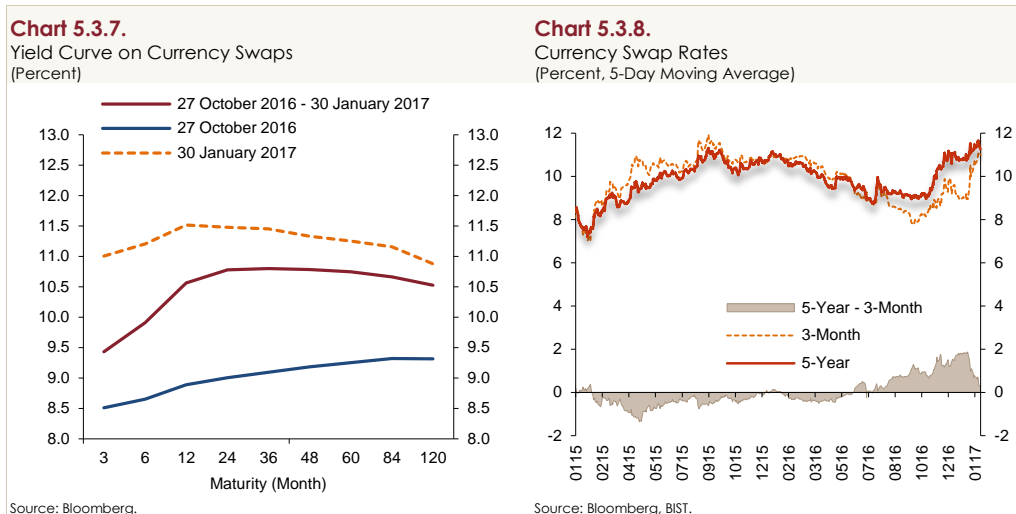
In the money market, funding with up to 1-week maturity is mostly obtained via swap markets, which have increased compared to the previous reporting period. This is followed by funds transacted under the BIST Interbank Repo-Reverse Repo Market and those which are exchanged by intermediaries under the BIST Repo-Reverse Repo Market (Chart 5.3.3). As a result of the CBRT's policies, from January 2017, the BIST Interbank Repo-Reverse Repo Market rate and 1-week swap rate exceeded the CBRT average funding rate and hovered close to the late liquidity window lending rate (Chart 5.3.4).



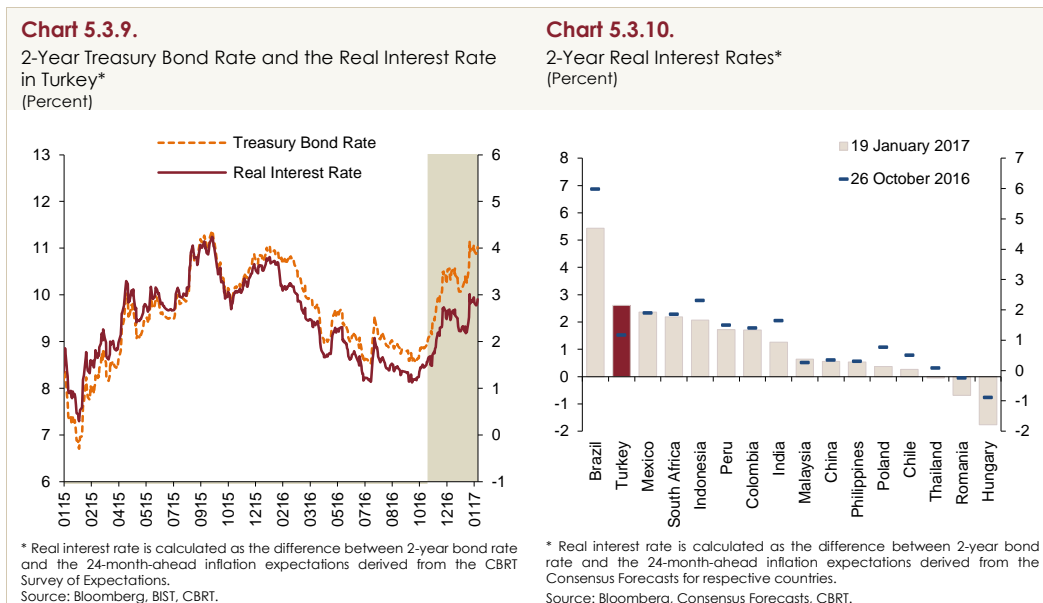
Following gradual reductions in the marginal funding rate in March-September 2016, the policy rate was kept unchanged in October, and the marginal funding rate and the 1-week repo auction rate were raised in November. Accordingly, the distribution of the expected CBRT average funding rate implied higher volatility in mid-January compared to October, while the mid-point of the distribution increased (Chart 5.3.5). In this period, 12-month and 24-month-ahead inflation expectations posted an uptick (Chart 5.3.6).



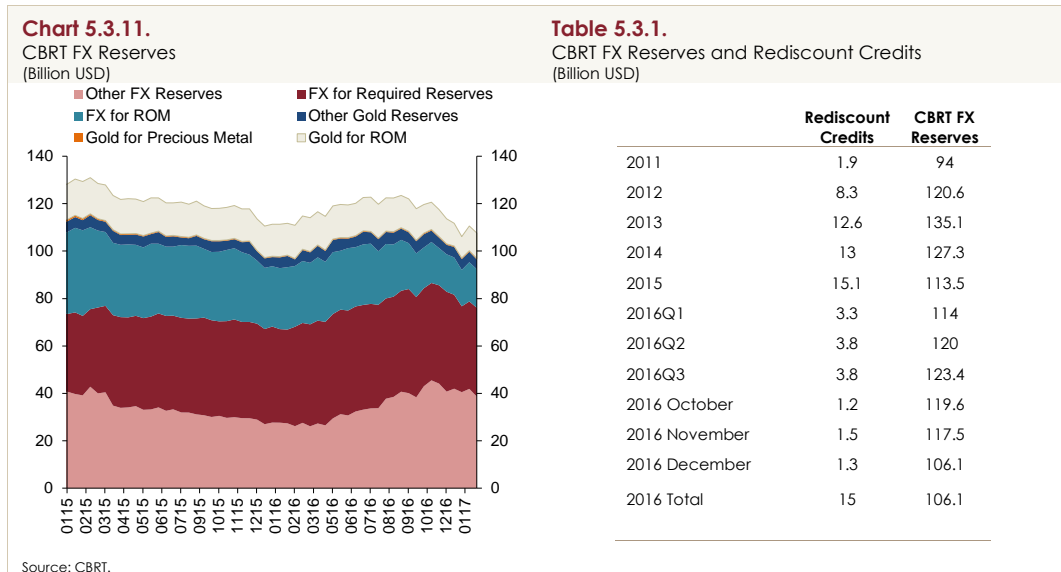
The yield curve has shifted upwards since the previous reporting period due to more blurred global, geopolitical and domestic conditions coupled with the higher inflation expectations (Chart 5.3.7). The yield curve has recently flattened amid CBRT's strong monetary tightening. In fact, the 5-year and 3-month currency swap rate spread, which has taken positive values since the second half of 2016, plunged in the inter-reporting period (Chart 5.3.8).



Against these developments, the 2-year bond yield also trended upwards (Chart 5.3.9). With the increases in the nominal rate exceeding the rise in inflation expectations, the 2-year real interest rates also surged. Turkey's 2-year real interest rates have been higher than the average of other emerging economies (Chart 5.3.10).



Owing to the arrangements introduced to the FX required reserve ratios and the use of the ROM, CBRT's gross FX reserves decreased slightly at the end of January compared to the previous reporting period (Chart 5.3.11). Rising exchange rates also had a dampening effect on the amounts maintained under the ROM. Posting a total of 15 billion USD in 2016, rediscount credits caused CBRT's other FX reserves to increase (Table 5.3.1).



Monetary Policy Response

In 2016, the CBRT maintained its tight stance against the inflation outlook, stabilizing stance for the FX liquidity and the supportive stance for financial stability. In the first quarter of 2016, less volatile global markets and active use of policy tools accompanied by tight liquidity policy and a cautious macroprudential policy reduced the need for a wide interest rate corridor. The fall in inflationary pressures, tightness in financial conditions and the mild course of global financial markets from March to September 2016 enabled the CBRT to simplify the interest rate corridor policy. Accordingly, the upper band of the corridor was lowered by 250 basis points in total through measured and prudent steps in the March–September 2016 period. Overnight lending rates, which were 10.75 percent in March, were reduced to 8.25 percent in September. Thus, the corridor width, which was 350 basis points in March, was narrowed down to 100 basis points in September. In this period, the overnight borrowing rate and 1-week repo rate were kept unchanged at 7.25 and 7.50 percent, respectively.

In October 2016, thanks to the CBRT policies, monetary conditions grew less tight and macroprudential arrangements gave support to financial conditions. The slowdown in aggregate demand underpinned the gradual fall in core inflation, while developments in the exchange rate and other cost factors limited the improvement in the inflation outlook and necessitated the maintenance of the cautious stance in the monetary policy. Against this background, the CBRT decided to keep policy rates unchanged in October. Lingering uncertainties regarding global economic policies and the upward revision of the expected Fed rate caused fluctuations in financial markets and the depreciation of the real exchange rate in Turkey, as in other emerging economies in November 2016. To prevent these factors from deteriorating inflation expectations and the pricing behavior, the CBRT opted for some monetary tightening in November. Accordingly, the 1-week repo rate and the CBRT overnight lending rate were raised by 50 and 25 basis points, respectively.

Exchange rate developments and soaring oil prices resulting from aggravated global volatilities towards the end of the year pose upside risks to the inflation outlook. On the other hand, aggregate

demand conditions curb these effects. Considering the benefits of monitoring these effects closely for a more reliable evaluation of these factors, the CBRT kept interest rates intact in December.

In January 2017, excessive volatility in exchange rates weighed on upside risks to the inflation outlook. Projecting that inflation may soar remarkably in the short term given the lagged effects of exchange rate developments and volatile unprocessed food prices, the CBRT decided to deliver more aggressive monetary tightening to hinder the deterioration in the inflation outlook. Accordingly, the marginal funding rate was increased from 8.5 percent to 9.25 percent, and the lending rate was raised from 10 percent to 11 percent under the late liquidity window facility at the January MPC meeting.

Throughout 2016, in addition to the abovementioned policy rate decisions, the CBRT took a series of measures on TL and FX liquidity management within the monetary policy framework. Accordingly, starting from 3 June 2016, the CBRT has aimed to evenly distribute weekly funding across days in determining the daily auction amount of 1-week repo funding provided by the quantity auction method. This move was implemented to enhance the predictability of liquidity policy and the effectiveness of liquidity management of banks. In addition, the CBRT decided to continue with outright purchase auctions until the year-end to support effective management of TL liquidity policy on 29 June 2016. To contain the adverse effects of the mid-July turmoil on financial markets and enhance the smooth operating of markets, unlimited liquidity was facilitated through TL deposit transactions and the intra-day liquidity facility commission was lowered to zero. Also, maintenance of unlimited collateral FX deposits was facilitated to amplify TL liquidity. The collateral management flexibility offered to banks by this facility supported banks' liquidity managements and contributed to the fall in the off-balance sheet FX position. Thanks also to the liquidity measures, which lowered the need for an unlimited collateral FX deposit facility over time, imposition of limits to FX collateral deposits was re-started as of 11 November 2016. Moreover, TL required reserve ratios were reduced by 100 basis points in total in all maturity brackets in August and September 2016, which provided liquidity to the system.

As well as the TL liquidity management, the CBRT also took measures to contribute to the liquidity in the FX market against exchange rate volatilities, particularly in the second half of 2016. FX required reserve ratios and reserve option coefficients were adjusted to inject additional FX liquidity to the financial system. Accordingly, the coefficients for the second, third and fourth tranches of the FX facility of the ROM were reduced by 0.2 points on 31 October 2016. In addition, the upper limit of FX reserve requirements was increased from 3 points to 4 points to foster the FX liquidity management of banks. On 17 November 2016, the coefficient for the first tranche of the FX facility of the ROM was kept unchanged, the second tranche was cut by 0.1 point, and the other tranches were reduced by 0.2 points. On 24 November 2016, the FX required reserve ratios were reduced by 50 basis points in all maturity brackets. Moreover, maturity extension and re-payment in TL options were introduced to export rediscount credits for re-payments by the year-end, limits were re-introduced to collateral FX deposits, and demand from the energy-importing public institutions were partly met by the CBRT and the Undersecretariat of the Treasury depending on market conditions. All these measures supported the FX liquidity in the market.

In early January 2017, some liquidity measures were taken to prevent the volatile exchange rates and price formations detached from economic fundamentals from distorting the price stability and financial stability. Accordingly, the CBRT has not launched any 1-week repo auctions since 12

January 2017, which directed banks to financing resources with higher costs in the money markets. Moreover, banks' borrowing limits at the CBRT Interbank Money Market were reduced to 22 billion TL effective as of 11 January 2017 and to 11 billion TL as of 16 January 2017. To be implemented on the days deemed necessary as of 16 January, a limitation was introduced to the amount of funding provided by the CBRT through the BIST Interbank Repo-Reverse Repo Market. In early January, other than the abovementioned measures, FX required reserve ratios were reduced by 50 basis points in all maturities, providing the financial system with around 1.5 billion USD additional liquidity. Furthermore, to enhance the flexibility and instrument diversity of the TL and FX liquidity management, the CBRT launched the Foreign Exchange Deposits against TL Deposits Market on 17 January 2017.

Box
5.1

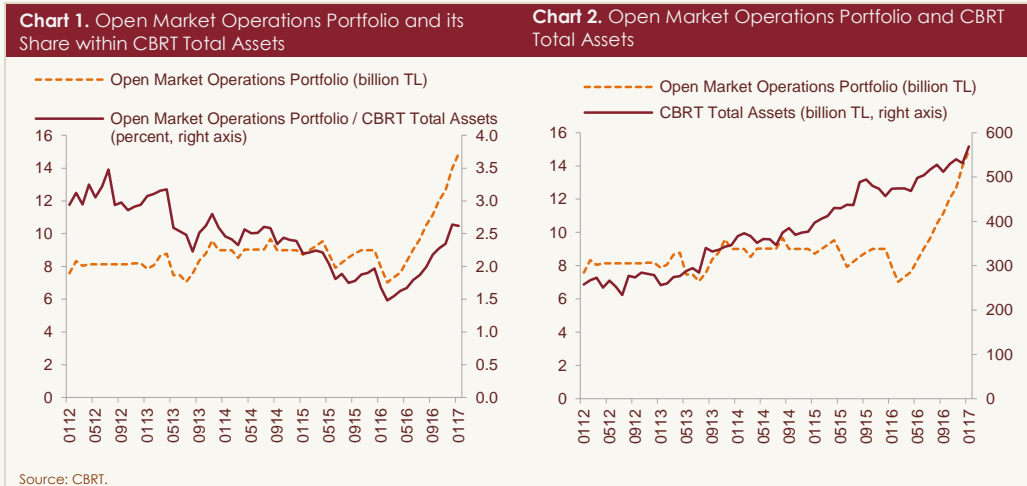
Open Market Operations, Portfolio Size of Securities and Outright Purchasing Transactions

The CBRT should hold sufficient amounts of domestic government bonds or lease certificates issued by HMKŞ (Undersecretariat of the Treasury Asset Leasing Company) for open market operations. This is a technical requirement, which enables the CBRT to control interest rates in the BIST Repo-Reverse Repo Market and BIST Interbank Repo-Reverse Repo Market, to manage the system's funding need, to maintain tool diversity in liquidity management and to have operational flexibility.

The targeted portfolio size in open market operations is announced yearly in the CBRT Monetary and Exchange Rate Policy documents. In this regard, the portfolio target was set as 8.2 billion TL for 2012 and a nominal of 9 billion TL for 2013 and onwards. The targeted portfolio size was revised from 9 billion TL to 14 billion TL for 2016 with the press release on 29 June 2016. For 2017, the portfolio size is set as 15 billion TL in the Monetary and Exchange Rate Policy for 2017. In line with this target, outright purchases are conducted by also taking the security redemptions on the balance sheet into consideration during the year.

Domestic government bonds and lease certificates to be purchased outright are announced through data dissemination channels at 10:00 a.m. on the first working day of the month. Therefore, outright purchasing auctions were held on Wednesdays or Fridays with value day as the next business day via the traditional method. Outright purchasing auctions on Mondays have been facilitated with the Monetary and Exchange Rate Policy for 2017. Securities to be purchased can be TL-denominated, discounted, fixed and variable-rate coupon domestic government bonds or lease certificates. Each auction amount was set to be no more than a nominal of 150 million TL; while, recently, 75 million TL have been purchased outright in each auction.

The analysis of the CBRT's open market operations after 2012 indicates that the portfolio size of open market operations has remained constant while CBRT's total asset size has increased in tandem with the economic and financial developments (Chart 1). Thus, the ratio of portfolio size to total assets has declined since 2012 (Chart 2).



As of end-January, the CBRT's total portfolio size stood at 15.2 billion TL, consisting of 15 billion TL of coupon domestic government bonds and 0.2 billion TL of lease certificates. The share of portfolio size in the CBRT's total assets was 2.7 percent as of end-January.

One of the major purposes of resorting to outright purchase transactions is to provide permanent liquidity to the market. Therefore, raising the total portfolio size in open market operations enhances the predictability of the funding need of the financial system. In that sense, outright purchases stand out as an effective tool for managing the system's funding need. Outright purchases increase the market liquidity and the renewal of securities to be redeemed in the CBRT's portfolio through the outright purchases offsets the pressure on the banks' balance sheets exerted by redemptions to the CBRT.

In sum, the CBRT set the size of the open market operations portfolio as 15 billion TL for 2017. Yet, as stated in the Monetary and Exchange Rate Policy for 2017, The CBRT also reserved the right to implement the additional purchasing option in order to maintain operational flexibility and limit the rise in the system's funding need. Revisions in the targeted portfolio due to the changes in liquidity conditions and operational requirements will be announced to the public via press releases.

6. Public Finance

In 2016, economic growth started to decelerate while fiscal policy was buoyed with growth, particularly through public consumption expenditures (Box 6.1). Furthermore, other fiscal policy instruments were also introduced in the form of consumption and investment incentives. In particular, tax subsidies have been applied to automobile and house purchases since the final quarter of 2016 to stimulate private demand. Additionally, on 8 December 2016, the Economic Coordination Committee announced a series of measures and incentives aimed at providing financial support for the real sector and encouraging investments, employment and exports. Meanwhile, the SCT rates on goods such as automobiles and tobacco products were hiked toward the end of the year in order to restrain possible deterioration in the budget due to growth-promoting fiscal policies and to maintain fiscal discipline. These adjustments brought consumer inflation higher in 2016 (Box 7.1).

Accordingly, despite posting a minor year-on-year increase in 2016, the central government budget deficit was broadly consistent with the MTP targets. The decelerating tax revenues amid sluggish economic activity and the troubled tourism industry as well as the rise in primary expenditures caused the budget deficit to widen. However, surging non-tax revenues, falling interest expenditures, the adjustments in SCT and the 13.7 billion TL generated by Law No. 6736 on the Restructuring of Certain Receivables brought the worsening budget situation under control.

6.1. Budget Developments

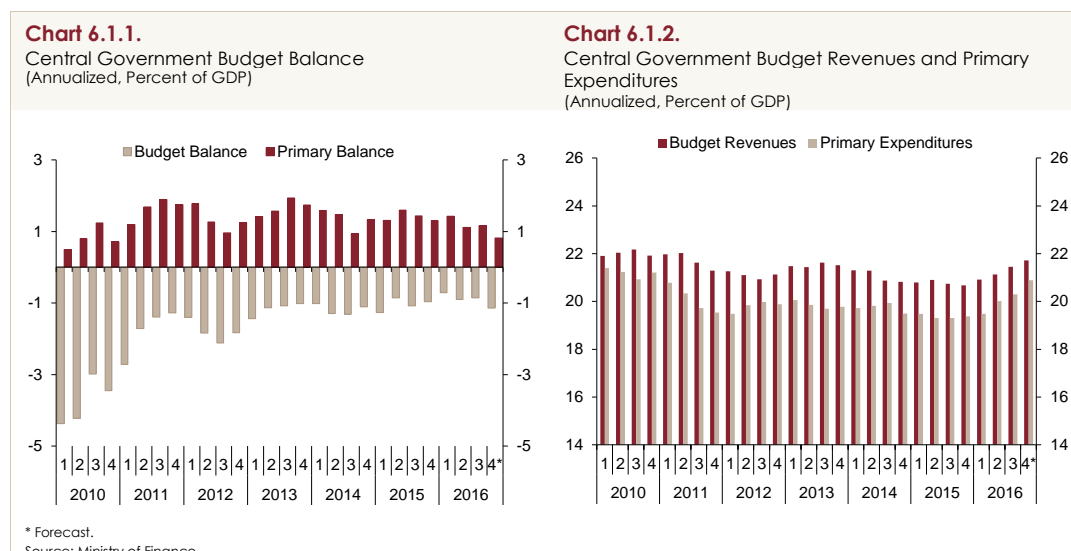
In 2016, the central government budget balance posted a deficit of 29.3 billion TL while the primary budget balance yielded a surplus of 21.0 billion TL (Table 6.1.1). Tax revenues were up by a modest 12.5 percent year-on-year, while non-tax revenues jumped by 33.1 percent, driving central government budget revenues up by 14.8 percent in 2016. Having soared at a much higher rate than budget revenues, primary budget expenditures increased by 17.7 percent in 2016, causing the primary surplus to decline slightly on a yearly basis. Meanwhile, interest expenditures registered a year-on-year decline in 2016, thereby limiting the widening in budget deficit.

Table 6.1.1.
Central Government Budget Aggregates
(Billion TL)

	2015	2016	Rate of Increase (Percent)	Actual/Target (Percent)	Target (Percent)
Central Government Budget Expenditures	506.3	583.7	15.3	102.3	12.7
Interest Expenditures	53.0	50.2	-5.2	89.7	5.7
Primary Expenditures	453.3	533.4	17.7	103.7	13.5
Central Government Budget Revenues	482.8	554.4	14.8	102.5	12.0
I. Tax Revenues	407.8	458.7	12.5	99.9	12.6
II. Non-Tax Revenues	56.4	75.0	33.1	108.4	22.7
Budget Balance	-23.5	-29.3	-	-	-
Primary Balance	29.5	21.0	-28.8	79.8	-

Source: Ministry of Finance.

The central government budget deficit to the GDP ratio is estimated to rise by a mere 0.1 percent year-on-year to 1.1 percent in 2016 (Chart 6.1.1). On the other hand, the primary budget surplus to the GDP ratio is expected to drop by about 0.5 points year-on-year to 0.8 percent.



The central government primary expenditures to the GDP ratio accelerated in 2016 and is expected to increase by 1.5 points year-on-year to 20.9 percent (Chart 6.1.2). On the other hand, the central government budget revenues to the GDP ratio is estimated to rise by 1 point from 2015 to 21.7 percent in 2016, mainly due to soaring non-tax revenues and adjusted tax revenues.

In 2016, central government primary expenditures grew considerably by 17.7 percent year-on-year, exceeding the budget target by about 4 points (Table 6.1.2). Personnel expenditures and purchases of goods and services, which are major items of central government primary expenditures, saw a dramatic escalation, suggesting that growth was largely spurred by government spending. On the other hand, despite overshooting the budget target, capital expenditures rose at a slower pace, pointing to a smaller contribution from public investments to growth.

Table 6.1.2.
Central Government Primary Expenditures
(Billion TL)

	2015	2016	Rate of Increase (Percent)	Actual/Target (Percent)
Primary Expenditures	453.3	533.4	17.7	103.7
1. Personnel Expenditures	125.1	148.9	19.0	100.7
2. Government Premiums to SSI	21.0	24.7	17.3	99.2
3. Purchases of Goods and Services	45.6	53.9	18.4	115.0
4. Current Transfers	182.7	224.9	23.1	103.3
a) Duty Losses	4.8	5.8	21.0	106.8
b) Health, Pension and Social Benefits	80.1	106.8	33.3	104.4
c) Agricultural Support	10.0	11.5	15.2	98.7
d) Reserved Share Revenues	55.6	62.7	12.7	99.5
e) Transfers to Households	10.0	12.6	25.8	123.0
5. Capital Expenditures	57.2	59.4	3.9	114.8
6. Capital Transfers	10.4	8.9	-14.9	118.1
7. Lending	11.3	12.8	12.6	98.6

Source: Ministry of Finance.

Across primary expenditures, current transfers, purchases of goods and services, and personnel expenditures surged by 23.1, 18.4 and 19.0 percent, respectively, in 2016. Health, pension and social benefits, a major component of current transfers that also includes social security deficit financing, soared by 33.3 percent in this period. This upswing was mostly driven by the massive year-on-year increase of 92.1 percent in the 5-point deduction for employer insurance premiums. As for public investment spending, capital expenditures increased modestly while capital transfers posted a notable decline, thereby curbing the rise in primary expenditures.

On the revenue front, central government budget revenues were up 15.0 percent year-on-year in 2016, exceeding the budget target by 1 point (Table 6.1.3). In this period, despite lackluster economic activity, tax revenues surged by 12.5 percent and met the budget target thanks to SCT adjustments and additional tax revenues generated by Law No. 6736. Meanwhile, non-tax revenues performed outstandingly with a sizeable increase of 33.1 percent in 2016 and surpassed the target by 8.4 points.

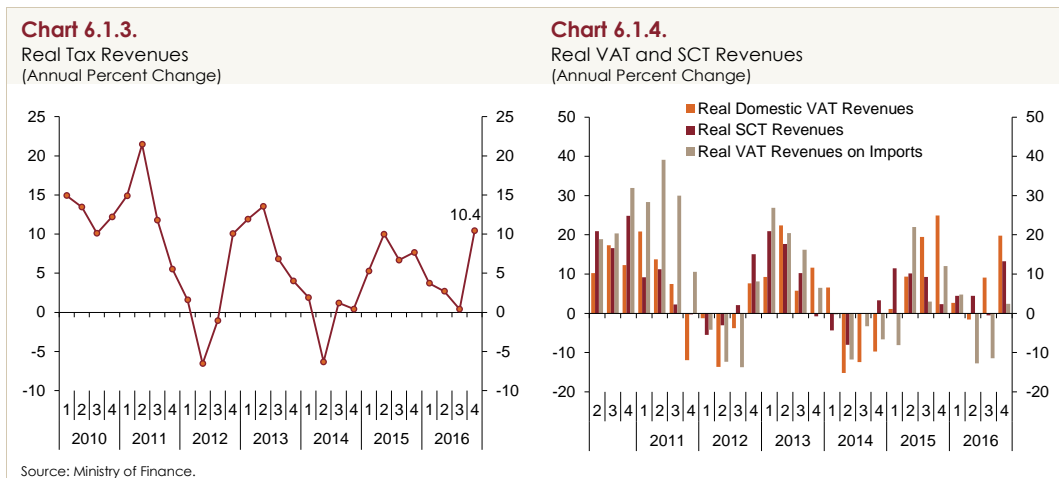
Table 6.1.3.Central Government General Budget Revenues
(Billion TL)

	2015	2016	Rate of Increase (Percent)	Actual/Target (Percent)
General Budget Revenues	464.2	533.7	15.0	101.0
I-Tax Revenues	407.8	458.7	12.5	99.9
Income Tax	85.8	96.6	12.6	97.6
Corporate Tax	33.4	43.0	28.7	116.8
Domestic VAT	46.4	54.0	16.3	105.3
SCT	105.9	120.4	13.6	103.5
VAT on Imports	74.6	76.6	2.6	88.1
II-Non-Tax Revenues	56.4	75.0	33.1	108.4
Enterprise and Property Revenues	19.7	23.7	20.7	125.5
Interests, Shares and Fines	26.6	34.6	30.3	101.9
Capital Revenues	7.9	12.8	61.7	105.1

Source: Ministry of Finance.

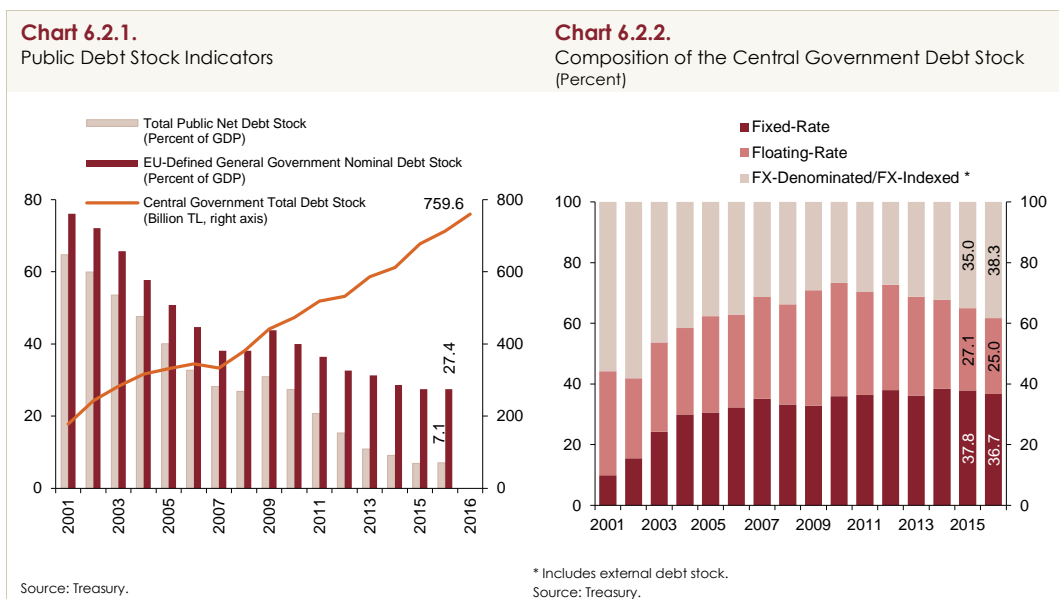
Across tax revenues, the collection of income tax, which makes up the largest share of direct taxes, recorded a year-on-year growth of 12.6 percent in 2016. Income tax collection is mostly composed of deductions from wages. In this regard, the large-scale upward adjustment in public wages and minimum wages in 2016 had a favorable impact on income tax revenues. Corporate taxes, on the other hand, increased by a substantial 28.7 percent on the back of strong bank earnings and the surplus from restructured tax revenues. Among consumption-based indirect taxes, the SCT and the domestic VAT rose by 13.6 and 16.3 percent, respectively. The domestic VAT increased more sharply than the expected increase in economic activity and the consumer prices in 2016, mainly due to the surplus from restructured tax revenues, whereas the SCT hike appears to be driven by tax adjustments. As their income elasticity is less than 1, the items subject to the SCT yielded increased revenue despite tax hikes. The details of the SCT revenues show an upturn of 19.5 and 10.8 percent, respectively, in tax revenues from tobacco products and motor vehicles, and an increase of 10.8 percent in petroleum and natural gas products, which account for a major share of total SCT revenues. Higher tax revenues on tobacco products were attributable to both tax adjustments and reduced loss/leak rates. The VAT on imports, on the other hand, was up 2.6 percent year-on-year, yet fell substantially short of the budget target. The sharp rise in non-tax revenues was largely caused by the inclusion of an additional 11 billion TL of privatization revenues into the budget and the CBRT's profit transfer of 9.3 billion TL in 2016.

Having eased since the third quarter of 2015, the growth rate of real tax revenues amounted to 10.4 percent in the fourth quarter of 2016 (Chart 6.1.3). This large fourth-quarter growth in real tax revenues was driven by the tax adjustments in fuel, automobile and tobacco products in September, November and December, respectively, and by the resulting surplus that was mostly absorbed into the domestic VAT in the fourth quarter, rather than by stronger economic activity. In fact, across sub-items, revenues from the domestic VAT were up 19.8 percent year-on-year in real terms in the last quarter while the SCT revenues surged by 13.2 percent. Revenues from the VAT on imports, however, rose by a mere 2.4 percent in real terms due to weaker import demand amid slowing economic activity (Chart 6.1.4).

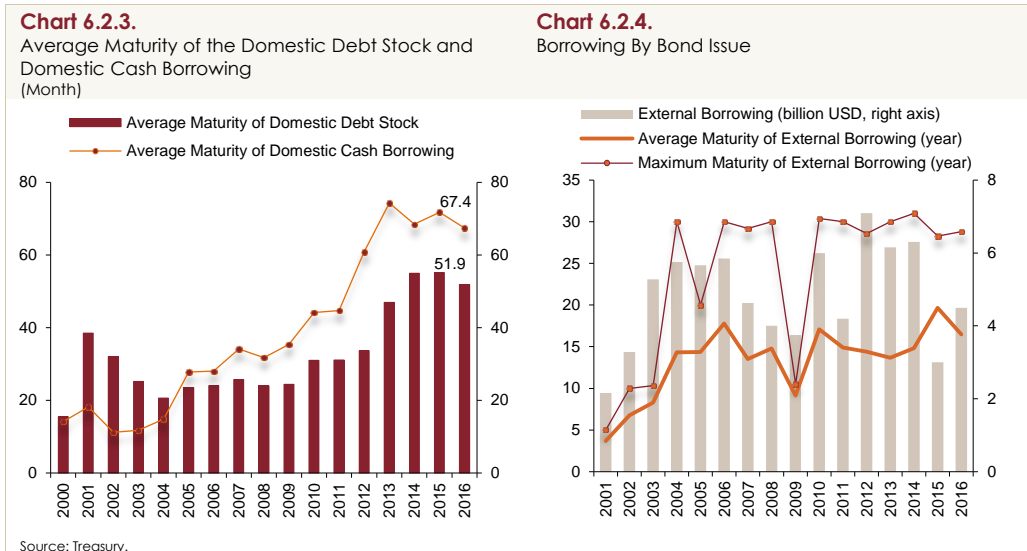


6.2.3. Developments in the Public Debt Stock

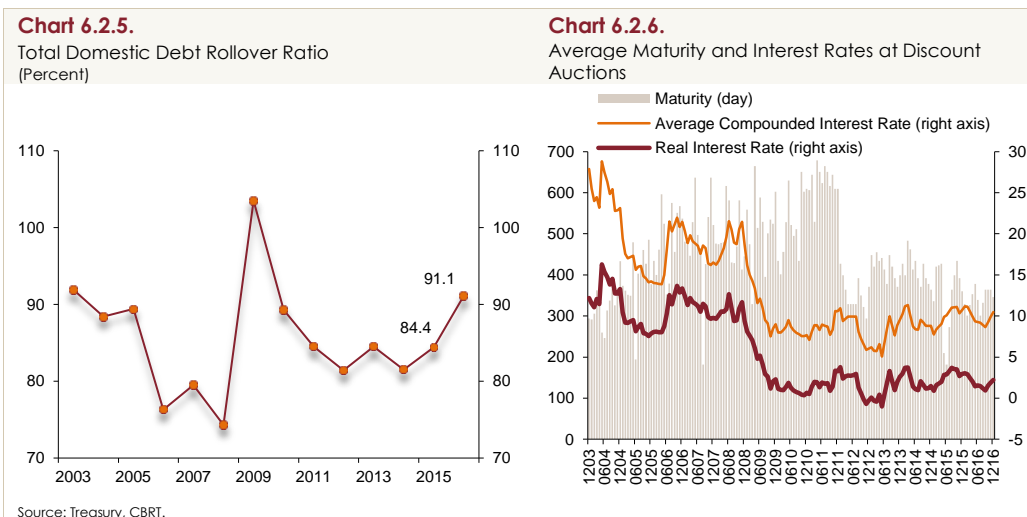
The central government debt stock ended the year at 759.6 billion TL (Chart 6.2.1). Total public net debt stock to the GDP and the EU-defined general government nominal debt stock to the GDP remained unchanged from end-2015 in the third quarter of 2016 (Chart 6.2.1).



In 2016, the share of fixed-rate securities in the total debt stock dropped slightly from 2015 (Chart 6.2.2). As for the exchange rate and interest rate structure of domestic borrowing, the share of fixed-rate borrowing registered a year-on-year increase in 2016. The average term-to-maturity of the domestic debt stock reached 51.9 months (Chart 6.2.3). External borrowing by bond issues amounted to 4.5 billion USD, with an average maturity of 16.5 years (Chart 6.2.4).



The domestic debt rollover ratio stood at 91.1 percent at the end of November 2016 (Chart 6.2.5). The average real interest rate¹ has recently been on the rise (Chart 6.2.6).



¹ Real interest rates are calculated by subtracting the 12-month-ahead inflation expectations of the CBRT Survey of Expectations from nominal interest rates (average annual compounded interest rate at the Treasury's TL-denominated zero-coupon securities auction).

Box
6.1

The Sensitivity of Fiscal Multiplier to Business Cycles

The fiscal multiplier is defined as the effect of a 1-unit exogenous change in government spending on national income. The size of the fiscal multiplier is important in analyzing the effectiveness of fiscal policy on economic activity. Previous studies cite plenty of factors influencing the effectiveness of the fiscal policy. These studies indicate that the size and sign of the fiscal multiplier depends on the state of the business cycle, the exchange rate regime, the openness of trade, the nature of fiscal shocks, the coverage of automatic stabilizers, the fiscal balances, the monetary policy stance, the robustness of the financial system and uncertainty. Hence, it is important to accurately assess the state of the economy to determine the effects of these measures on economic activity when using fiscal policy instruments.

This box analyzes the sensitivity of the fiscal multiplier to business cycles in Turkey over the 1990Q1-2015Q4 period.² To this end, business cycles are classified as low-growth and high-growth episodes by analyzing how the respective GDP departs from the long-term national income growth, and accordingly, the fiscal multiplier is estimated for each episodes by the local projection method. Table 1 presents fiscal multiplier values estimated for public consumption, public investment and total public spending for each period. There are three different definitions for the fiscal multiplier in Table 1: the impact multiplier, the peak multiplier and the cumulative multiplier. The impact multiplier is the first-round GDP effect of a 1-unit increase in public spending (positive spending shock), while the cumulative multiplier is the ratio of the cumulative effects on the GDP to the total change in public spending. The maximum multiplier, on the other hand, represents the peak value that the cumulative multiplier can take over time.

Table 1. Sensitivity of Fiscal Multiplier to Business Cycles

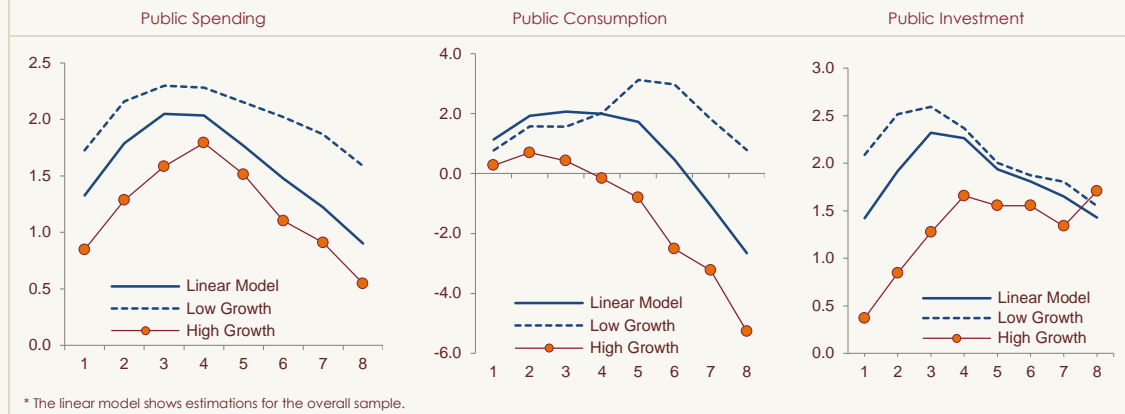
Type of Spending	Impact	1-Year Cumulative	2-Year Cumulative	Peak
Public Spending				
Low Growth	1.73	2.28	1.59	2.30
High Growth	0.85	1.79	0.55	1.79
Public Consumption				
Low Growth	0.77	2.02	0.78	3.13
High Growth	0.27	-0.16	-5.27	0.70
Public Investment				
Low Growth	2.09	2.37	1.55	2.59
High Growth	0.37	1.66	1.71	1.71

The results show that the fiscal policy is more effective in low growth than in high growth episode (Chart 1). The impact multiplier is estimated to be 1.73 during low-growth and 0.85 in high-growth periods. On the other hand, the 1-year cumulative multiplier is 1.79 and 2.28 in high-growth and low-growth episodes, respectively. In terms of spending components, the multiplier is higher for public investment than that for public consumption in both periods. This evidence confirms that an expansionary fiscal policy to be implemented via public investment will have a more stimulating effect on the GDP than that induced by public consumption. However, the size of cumulative multipliers indicates that public consumption has a significant effect on GDP in periods of low growth (Chart 1). Moreover, the fact that fiscal policy is more

² The study combines two real GDP series with base year 1987 and 1998.

effective in times of low growth than high growth suggests that as long as there is room for fiscal policy, expansionary fiscal policies should be implemented in low-growth periods. Hence, increases in public spending provide a major contribution to growth, and this contribution is sensitive to business cycles. These findings prove that fiscal policy is an effective short-term economic policy and that the size of the fiscal multiplier is often higher than 1.

Chart 1. Growth Periods and the Fiscal Multiplier*



The fiscal policy outlined in the MTP (2017-2019) and the 2017 budget involves a framework in which current spending is more limited and growth-stimulating spending is mostly provided by public investments. Considering that the size of the public investment multiplier is often larger than the public consumption multiplier and particularly higher in times of low growth, a re-distribution of public spending in favor of public investment would stimulate economic activity more strongly. Furthermore, as an effective economic policy for the short-term management of aggregate demand, public investment can be influential on the supply side of the economy over the long term, and thus, prioritizing public infrastructure investments in the 2017 budget would help increase the potential output of the economy in the long run.

REFERENCES

Çebi C. and K.A. Özdemir, 2016, Cyclical Variation of Fiscal Multiplier in Turkey, CBRT Working Paper No: 16/19.

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

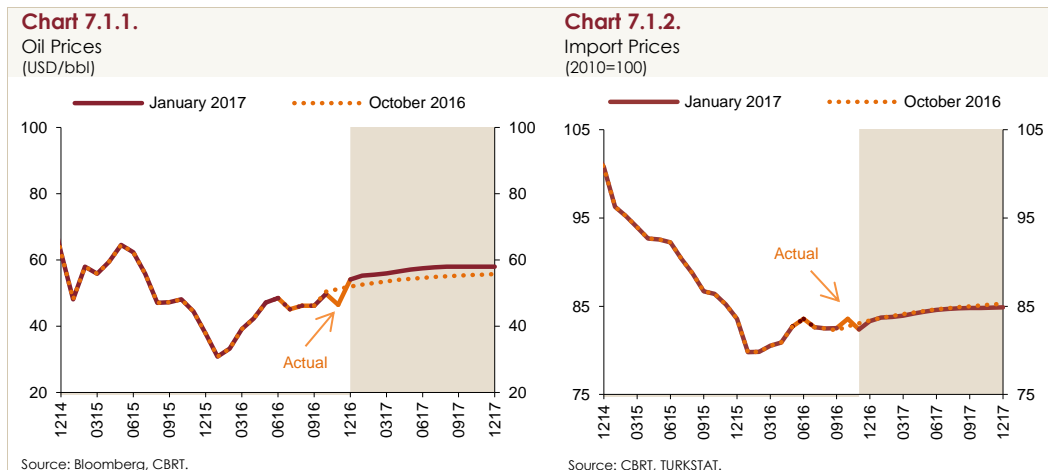
In the third quarter of 2016, economic activity proved slightly weaker than estimated in the October Inflation Report. Economic activity saw a pick-up in the last quarter as working day losses due to extended religious holidays and the mid-July turmoil were compensated. However, the underlying trend 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.



Fiscal Policy and Tax Adjustments

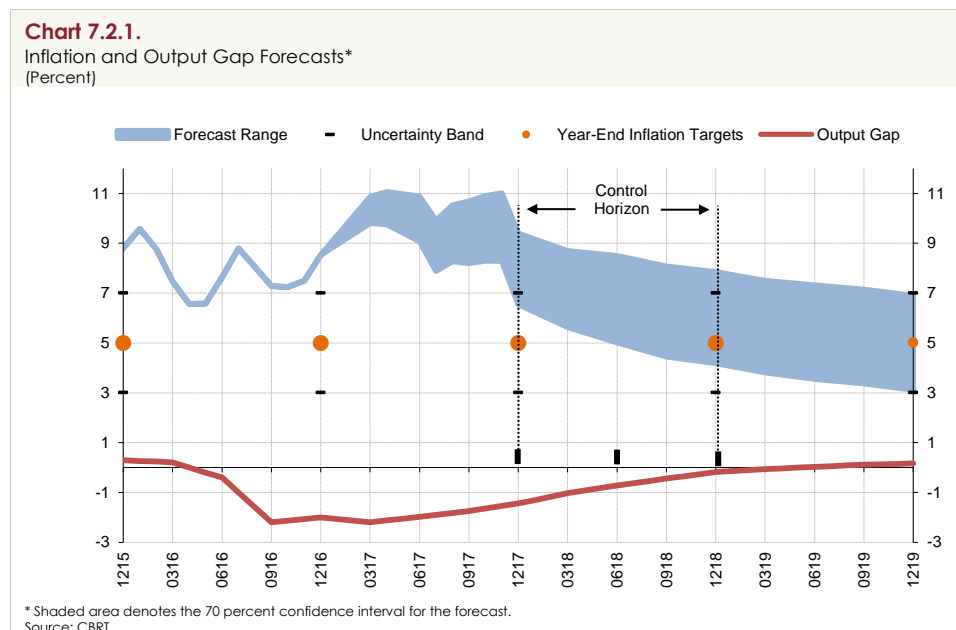
The contribution of adjustments in administered prices to consumer inflation was well above the historical averages in 2016. Forecasts for 2017 and onwards are based on the assumption that adjustments to taxes and administered prices will be consistent with the inflation target and automatic pricing 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).

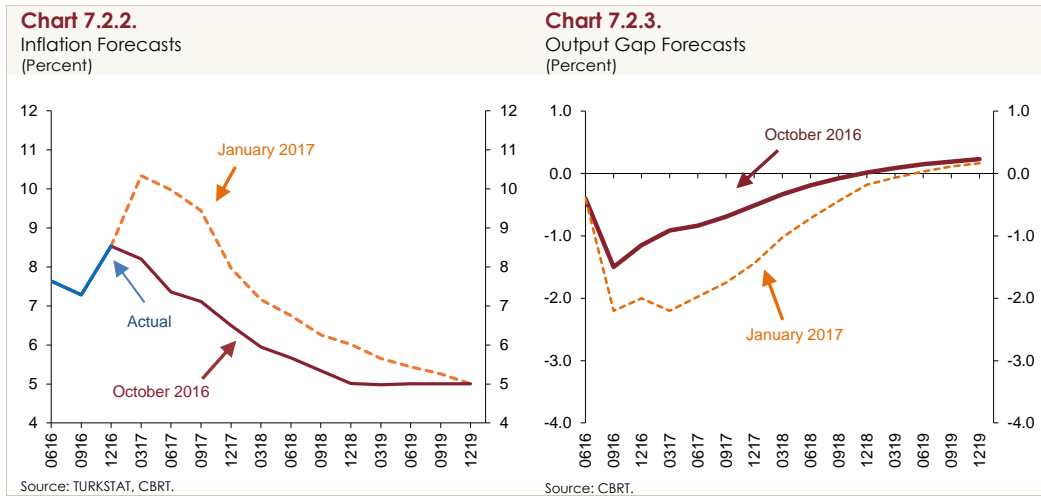


Year-end inflation forecasts for 2017 and 2018 were revised upwards by 1.5 and 1 points, respectively, compared to the 2016 October Inflation Report (Chart 7.2.2). Due to the recent depreciation in the Turkish lira coupled with soaring oil prices, assumptions for TL-denominated import prices for the 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.

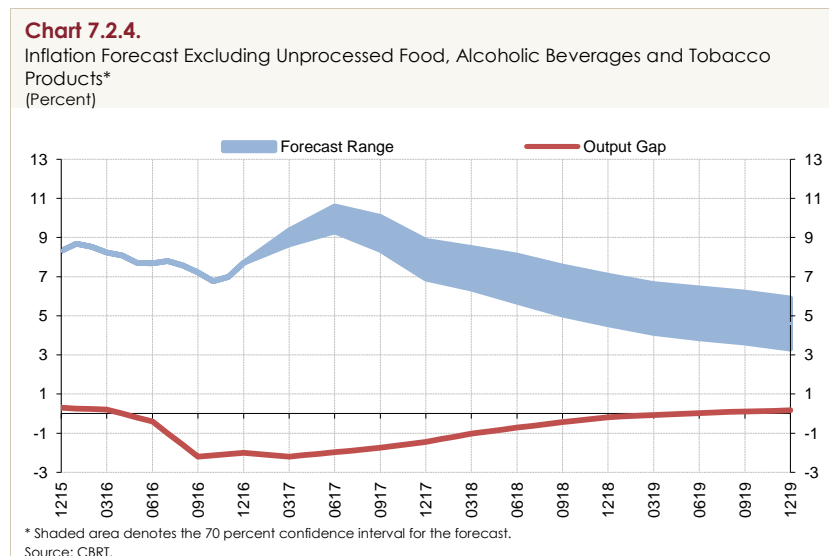
Another factor affecting forecasts was the revision of food inflation forecasts for 2017 from 7 percent to 9 percent. This revision added 0.4 points to the inflation forecast for 2017 compared to the previous reporting period. Lastly, the higher-than-expected realization in inflation at end-2016 and 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.



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.



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.



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Abbreviations

A-PPI	Agricultural Producer Price Index
AMA	Automobile Manufacturers Association
bbf	Barrel
BIST	Borsa İstanbul
BRSA	Banking Regulation and Supervision Agency
BTS	Business Tendency Survey
CBRT	Central Bank of the Republic of Turkey
CDS	Credit Default Swap
CPI	Consumer Price Index
CRA	Central Registry Agency
CSC	Council of Shopping Centers
D-PPI	Domestic Producer Price Index
ECB	European Central Bank
EMBI	Emerging Markets Bond Index
EM-VXY	JP Morgan volatility index for emerging market currencies
EPFR	Emerging Portfolio Fund Research
EU	European Union
EUR	The Euro Currency
FAO	Food and Agriculture Organization of the United Nations
FCI	Financial Conditions Index
Fed	Federal Reserve Bank
FOMC	Federal Open Markets Committee
FX	Foreign Exchange
GARCH	Generalized Autoregressive Conditional Heteroskedasticity
GDP	Gross Domestic Product
IMF	International Monetary Fund
MEDIAN	Median Inflation for Seasonally Adjusted 5-Digit Sub-Price Index
MENA	Middle East and North Africa
MSCI	Morgan Stanley Strategy Indexes
MTP	Medium-Term Program
PDP	Public Disclosure Platform
PMI	Purchasing Managers Index
PPI	Producer Price Index
ROM	Reserve Options Mechanism
S&P	Standard and Poor's
SATRIM	Seasonally Adjusted Trimmed Mean Inflation
SCT	Special Consumption Tax
SEATS	Signal Extraction in ARIMA Time Series
SMEs	Small and Medium-Sized Enterprises
SSI	Social Security Institution
TEPAV	The Economic Policy Research Foundation of Turkey
TL	Turkish Lira
TRAMO	Time Series Regression with ARIMA Noise, Missing Values and Outliers
TURKSTAT	Turkish Statistical Institute
UK	United Kingdom
US	United States
USA	United States of America
USD	United States Dollar
VAR	Vector Autoregression
VAT	Value Added Tax
VIX	Volatility Index
VXY	JP Morgan volatility index for G7 currencies
WGMA	White Goods Manufacturers Association

2017 Calendar for MPC Meetings, Inflation Report and Financial Stability Report			
MPC Meetings	Summary of the MPC Meeting	Inflation Report	Financial Stability Report
24 January 2017	31 January 2017	31 January 2017	
16 March 2017	23 March 2017		
26 April 2017	28 April 2017	28 April 2017	
			30 May 2017
15 June 2017	22 June 2017		
27 July 2017	01 August 2017	01 August 2017	
14 September 2017	21 September 2017		
26 October 2017	01 November 2017	01 November 2017	
			30 November 2017
14 December 2017	21 December 2017		