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TÜRKİYE CUMHURİYET
MERKEZ BANKASI

inflation report

2011-IV

Contents

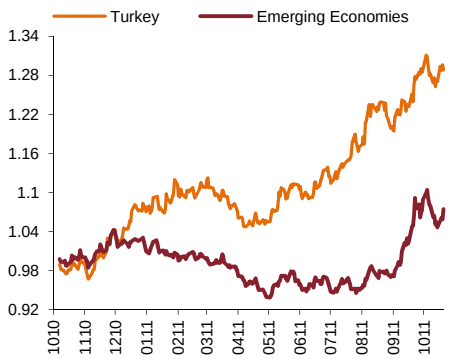
1. Overview

In the third quarter of 2011, mounting concerns regarding sovereign debt sustainability problems across the euro area coupled with the slower-than-expected recovery in the U.S. real estate and labor markets, intensified the downside risks regarding the global economic activity. Accordingly, global economic activity forecasts were revised downwards and expectations for a further delay in the normalization of monetary policy in advanced economies grew stronger. Mounting uncertainties regarding the global economy and the deterioration in risk appetite led to capital outflows from emerging economies. This outlook not only fed into short-term inflationary pressures in emerging economies, but also highlighted concerns over growth and financial stability.

1.1. Monetary Policy Developments and Monetary Conditions

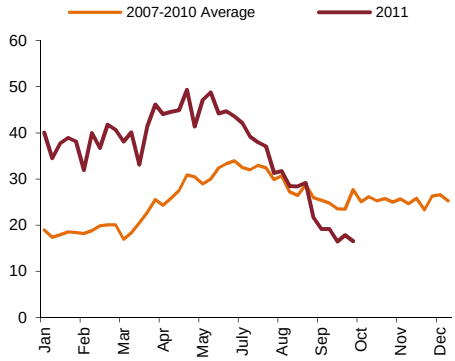
Since end- 2010, the Central Bank of the Republic of Turkey (CBRT) has been implementing policies with the objective to gradually lead the economy to a robust growth composition without hampering the medium-term inflation outlook. Accordingly, policies were pursued to prevent excessive deviation of exchange rates from economic fundamentals in either direction, while necessary measures were taken with the support of other institutions, to ensure reasonable loan growth rates (Charts 1.1.1 and 1.1.2).

Chart 1.1.1.
TL and Emerging Market Currencies*
(October 2010=1)



* Average of emerging market currencies including Brazil, Chile, Czech Republic, Hungary, Mexico, Poland, South Africa, Indonesia, South Korea and Colombia, against USD. Increases denote depreciation of the currency.
Source: Bloomberg, CBRT.

Chart 1.1.2.
Loan Growth Rates*
(13-Week Average, Annual Percent Change)



* Adjusted for exchange rate effect.
Source: CBRT.

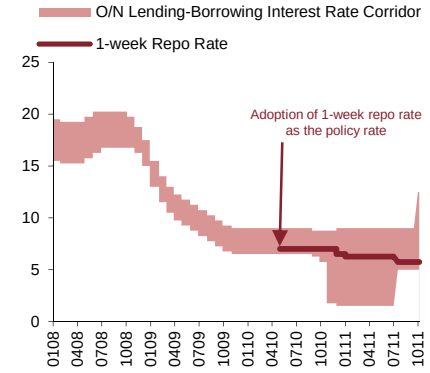
In the baseline scenario presented in the July Inflation Report, global economic activity was assumed to maintain its gradual recovery given the forecasts by international institutions. It was also highlighted in the Report that the downside risks on the global economy became more pronounced. Indeed, subsequent to the publication of the Report, risk perceptions deteriorated rapidly, debt problems in the euro area intensified further, thereby changing the baseline scenario. The Monetary Policy Committee (MPC) held an interim meeting on August 4, 2011 to contain the potential adverse effects of these developments on financial stability and economic activity, and announced a comprehensive package of measures. These measures laid the background for a timely, controlled and effective provision of liquidity to markets in the event of a financial turmoil due to developments in the global economy. The MPC opted for a modest cut in the policy rate in order to contain the risk of a recession in economic activity that may be posed by the escalating global economic problems (Chart 1.1.3).

Having highlighted the uncertainties regarding the global economy in its August and September meetings, the MPC stated the significance of closely monitoring the developments and taking necessary policy measures without any delay. In this context, with an emphasis on downside risks, the MPC also reiterated that all policy instruments might be eased if global economic problems further intensify and the slowdown in domestic economic activity becomes more pronounced. Upon the acceleration of capital outflows from emerging economies during this period, a series of liquidity measures were taken to contain the fluctuations in the FX market. Moreover, the Turkish lira required reserve ratios were also adjusted in order to extend the maturities of the banking system liabilities (Chart 1.1.3.)

The ongoing deterioration in global risk appetite since August has led to an excessive depreciation of the Turkish lira. Having reached 30 percent since November 2010 in accumulated terms, the depreciation started to pose risks on the inflation outlook. Moreover, in October, the adjustments in administered prices were far beyond the assumptions of the July Inflation Report, thereby necessitating a sizeable upward revision to short-term inflation forecasts. Accordingly, in its October meeting, the MPC underlined that medium-term inflation expectations and outlook will not be allowed to be affected by these developments, and hence, widened the interest rate corridor via a significant increase in lending rates (Chart 1.1.3).

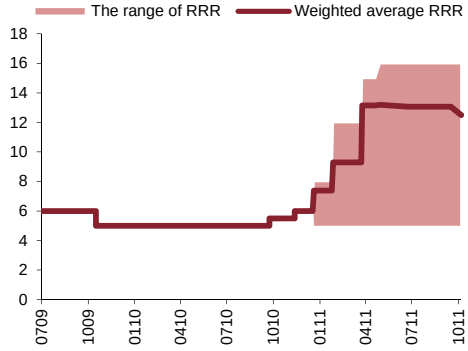
Chart 1.1.3. CBRT Policy Mix

CBRT Policy Rates
(Percent)



Source: CBRT.

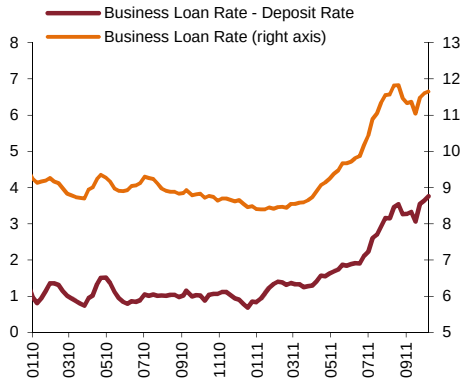
TL Required Reserve Ratios (RRR)
(Percent)



Source: CBRT.

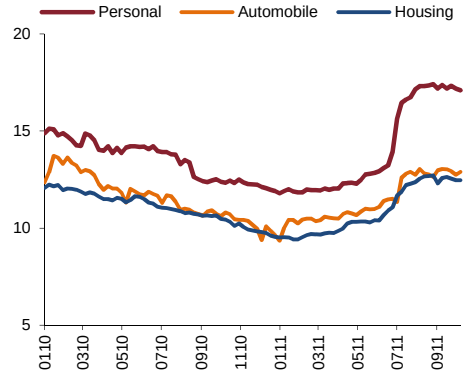
Loan rates continued to rise in the third quarter (Charts 1.1.4 and 1.1.5). A marked slowdown was observed in credit growth owing to the lagged effects of the adopted measures as well as the deceleration in the economic activity. Even though, this slowdown was also driven by seasonal factors, comparisons with the past years suggest that the observed slowdown is more pronounced than envisioned by seasonal normals (Chart 1.1.2). Accordingly, the annual credit growth rate adjusted for exchange rate effect is expected to reach around 25 percent by the year-end.

Chart 1.1.4.
TL Business Loan Rates
(Flow, 4-Week Average, Percent)



Source: CBRT.

Chart 1.1.5.
TL Consumer Loan Rates
(Flow, Annualized, Percent)



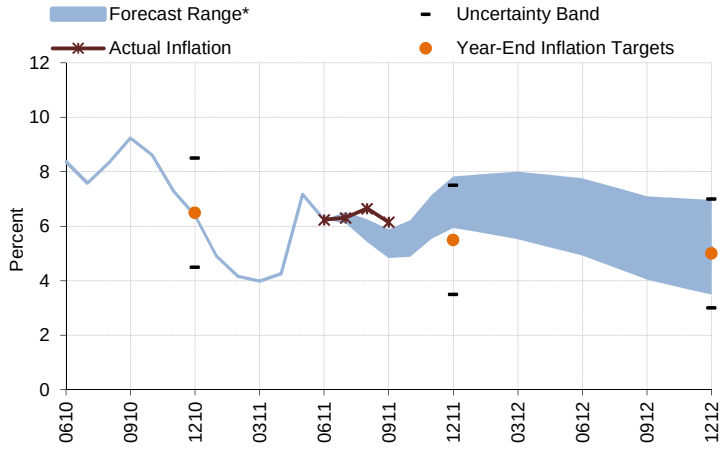
Source: CBRT.

1.2. Macroeconomic Developments and Main Assumptions

Inflation

Prices of core goods posted a more-than-envisaged increase in the third quarter amid the excessive depreciation of the Turkish lira. The annual rate of change in food prices plunged due to base effect from the unprocessed food prices. Inflation followed a flat course during the third quarter as these two effects largely offset each other; yet, actual inflation slightly exceeded the forecast range presented in the July the Inflation Report as the depreciation effect outweighed the base effect (Chart 1.2.1).

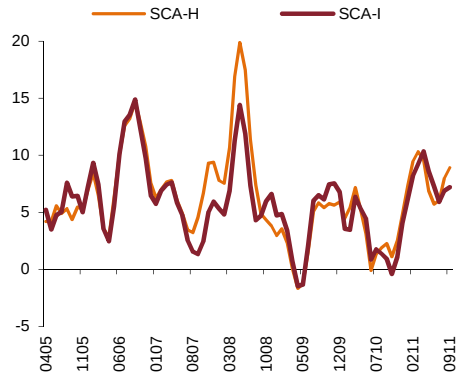
Chart 1.2.1.
July 2011 Inflation Forecasts and Realizations



* Shaded region indicates the 70 percent confidence interval for the forecast.

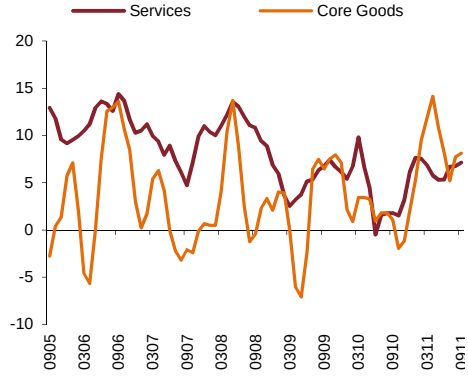
Amid the exchange rate developments, the underlying core inflation indicators also headed upwards in the third quarter (Chart 1.2.2). The upward trend was mainly driven by the increase in prices of core goods, while the underlying services inflation remained relatively moderate (Chart 1.2.3). The depreciation of the Turkish lira passed through to all subcategories of core goods prices, whereas, among services prices, the depreciation was only effective on transport services with the secondary effects remaining limited until October.

Chart 1.2.2.
Core Inflation Indicators SCA-H and SCA- I
(Seasonally Adjusted, 3-Month Average, Annual Percent Change)



Source: TurkStat, CBRT.

Chart 1.2.3.
Prices of Core Goods and Services
(Seasonally Adjusted, 3-Month Average, Annual Percent Change)



Source: TurkStat, CBRT.

Supply and Demand Developments

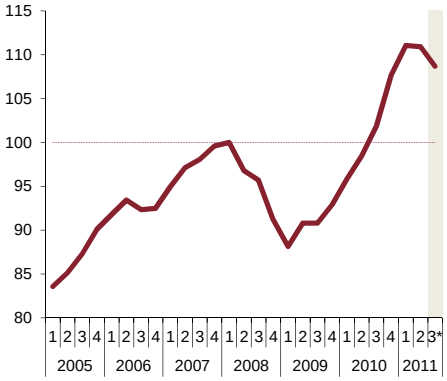
Gross Domestic Product (GDP) data indicated a more robust economic activity in the second quarter of 2011, compared to the outlook presented in the July Inflation Report. Hence, the output gap estimates of this period were revised upwards. Economic activity remained robust despite a quarter-on-quarter slowdown, and growth was mainly driven by private sector spending on consumption and investment. While exports followed a weak course amid the developments in the global economy, imports recorded a significant decline due to the slowdown in domestic demand as a result of the adopted policy measures. Thus, the net external demand provided a positive contribution to quarterly growth for the first time after a long term. In other words, the composition of growth started to change in the desired direction (Chart 1.2.4).

Owing to the lagged effects of contractionary policies on reserve requirement and liquidity, domestic demand continued to lose pace in the third quarter. The measures taken by the Banking Regulation and Supervision Agency (BRSA) as well as the tight fiscal policy stance also brought domestic demand growth to a sustainable level in the third quarter. Data on credit, production and sales as well as confidence indices pointed to a continuing deceleration in the private consumption demand in this period. Accordingly, the third quarter outlook assumes an ongoing slowdown in domestic demand (Chart 1.2.5).

Chart 1.2.4.
Exports and Imports of Goods and Services
(Seasonally Adjusted, 1998 Prices, Billion TL)

* Estimate.
Source: TurkStat, CBRT.

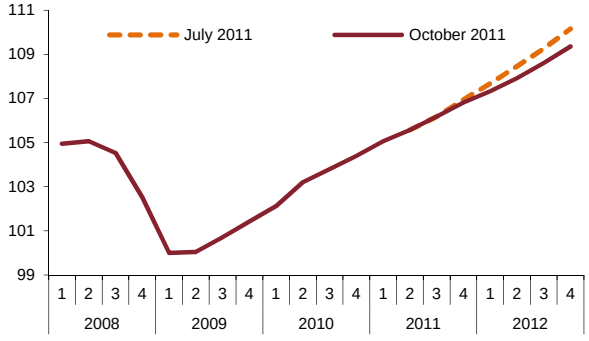
Chart 1.2.5.
Final Domestic Demand
(Seasonally Adjusted, 2008Q1=100)



* Estimate.
Source: TurkStat, CBRT.

Global growth forecasts were subject to substantial downward revisions in the third quarter, especially in advanced economies. In this respect, projections for Turkey's export-weighted global growth index point to a weaker medium-term outlook compared to the previous period (Chart 1.2.6). Therefore, compared to the previous period, a weaker external demand outlook is assumed for our forecasts.

Chart 1.2.6.
Export-Weighted Global Economic Activity Index*
(2009Q1=100)



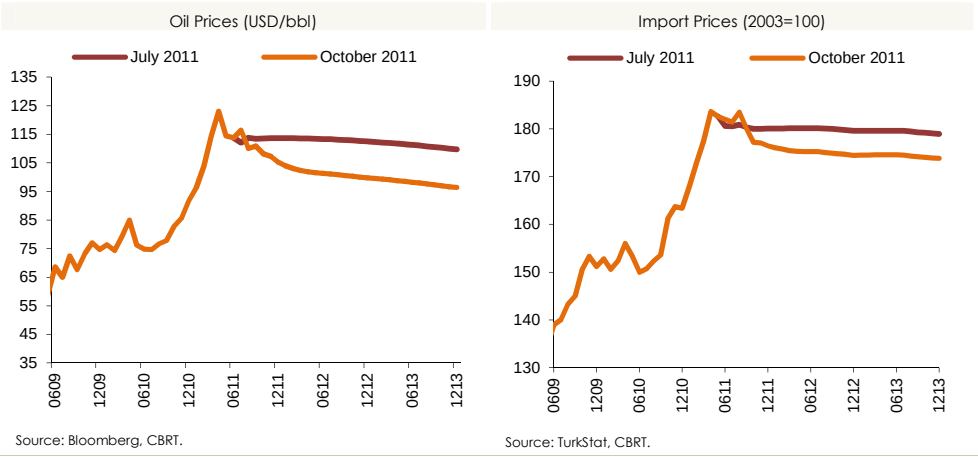
* For methodology, see Inflation Report 2010-II, Box 2.1 "Foreign Demand Index for Turkey".
Source: Bloomberg, Consensus Forecasts, CBRT.

In sum, the output gap was revised upwards for the short term and downwards for the medium term. While this revision leaves the 2011 year-end inflation forecast virtually unchanged, it pulls the 2012 year-end forecast down by 0.2 percentage points.

Commodity and Food Prices

Considering the recent developments in spot and futures prices, assumptions for oil prices were revised downwards from USD 115 to USD 110 per barrel for 2011, and from USD 115 to USD 100 for 2012. Accordingly, import prices were also revised downwards (Chart 1.2.7). These revisions lowered the 2011 and 2012 year-end inflation forecasts by 0.1 and 0.2 percentage points, respectively. In addition, assumption for annual food inflation was maintained at 7.5 percent.

Chart 1.2.7.
Revisions to Oil and Import Price Assumptions



Source: Bloomberg, CBRT.

Source: TurkStat, CBRT.

Fiscal Policy and Tax Adjustments

In the July Inflation Report, price adjustments to tobacco products were assumed to be consistent with the inflation target, adding approximately 0.3 percentage points to inflation. However, in view of the recent developments, the estimated contribution of the price adjustment in tobacco products to inflation is revised upwards to 0.9 percentage points, pulling short-term inflation forecast by 0.6 percentage points.

The medium-term forecasts are based on the outlook presented in Medium Term Program (MTP) regarding fiscal policy. Therefore, the baseline scenario envisages that the ratio of primary expenditures to GDP would be reduced gradually starting from 2012, the ratio of public debt to GDP would continue to fall, and the risk premium would remain broadly unchanged. Moreover, tax adjustments and administered prices are assumed to be consistent with inflation targets and automatic pricing mechanisms.

1.3. Inflation and Monetary Policy Outlook

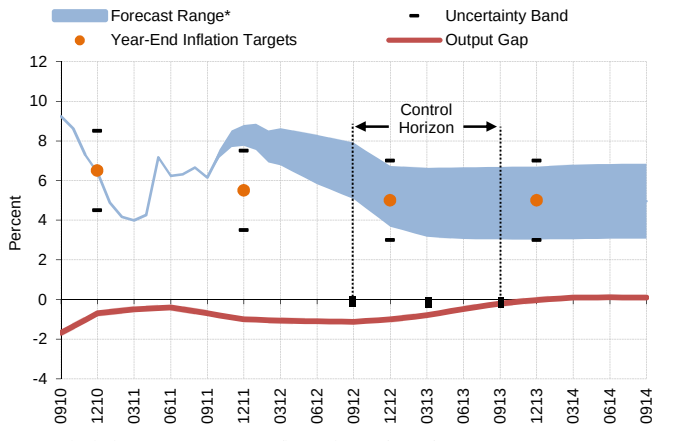
Short-Term Inflation Forecasts

Emerging economies have faced rapid capital outflows amid the deteriorating risk appetite since the publication of the July Inflation Report, thereby causing the excessive depreciation of the Turkish lira to become more pronounced. This, when coupled with soaring administered goods prices, increased the risk of deterioration in the pricing behavior. The CBRT reacted aggressively to these developments with a marked lending rate hike in its October meeting (Chart 1.1.3). Although the monetary tightening is expected to contain inflationary pressures, annual inflation is expected to soar in the short term owing to the low base effects in unprocessed food prices. Accordingly, year-end inflation is expected to be realized at 8.3 percent.

Medium-Term Forecasts

Assuming that annual rate of credit growth decelerates gradually, and monetary conditions are tightened significantly in the final quarter in line with the policy measures taken in October, inflation is expected to be, with 70 percent probability, between 7.8 and 8.8 percent with a mid-point of 8.3 percent at the end of 2011, and between 3.7 and 6.7 percent with a mid-point of 5.2 percent at the end of 2012. Inflation is expected to stabilize around 5 percent in the medium term (Chart 1.3.1).

Chart 1.3.1.
Inflation and Output Gap Forecasts



* Shaded region indicates the 70 percent confidence interval for the forecast.

It should be emphasized that any new data or information regarding the inflation outlook may lead to a change in the monetary policy stance. Therefore, assumptions regarding the monetary policy outlook underlying the inflation forecast should not be perceived as a commitment on behalf of the CBRT.

Forecasts are based on the assumption that CBRT's policy stance is designed so as to hinder the secondary effects. Moreover, in view of the weak outlook for the global economy, commodity prices are also expected to be disinflationary (Table 1.3.1). Accordingly, inflation is expected to decelerate gradually starting from early 2012, nearing the target by the end of 2012 (Chart 1.3.1).

Table 1.3.1.
Revisions to Year-end Inflation Forecasts

	2011	2012
July 2011 Forecast	**6.9**	**5.2**
Additional Tax Adjustment in Tobacco Products	0.6	-
Exchange Rate Developments	0.9	0.4
Commodity Prices	-0.1	-0.2
Output Gap	-	-0.2
October 2011 Forecast	**8.3**	**5.2**

Source: CBRT.

In sum, short-term inflation forecasts were revised upward due to exchange rate developments as well as administered price hikes. It should be highlighted that these factors reflect a temporary movement in relative prices rather than a permanent increase in inflation, as the secondary effects will be hindered on the back of the envisioned monetary tightening in the last quarter owing to the CBRT's recent aggressive policy reaction.

How Would Inflation Evolve Had The CBRT Not Reacted?

The recent tightening of the CBRT's policy stance is essentially a step towards preventing deterioration in inflation expectations due to inflationary pressures from the exchange rate. At this point, it is important to answer the question of how inflation would have evolved had the CBRT not reacted. For a better understanding of this issue, Chart 1.3.1 depicts the possible accumulated price increases resulting from exchange rates and administered price developments assuming that CBRT shows no reaction for a long time. Accordingly, the contribution of these factors to inflation is estimated to reach 6

percentage points by end-2011 assuming no policy measure is taken by the CBRT. Under this scenario, consumer inflation reaches double digits at 10.1 percent, mainly owing to the excessive depreciation of the Turkish lira in addition to the effect of the deterioration in inflation expectations (Table 1.3.2). Hence, also considering the backward-looking pricing behavior in the services sector, inflation will be likely to remain elevated for a long time, causing inflation expectations to deteriorate while also jeopardizing the hardly-earned achievements of the recent years on the path to price stability. In such a case, bringing inflation back to reasonable levels would be more costly. Therefore, in order not to allow for such adverse developments, the CBRT actively intervened in the FX market in October, and in line with its primary objective of price stability, reacted aggressively by an O/N rate hike. In this respect, all necessary measures will be taken in the upcoming period in order to keep inflation under control and to ensure the attainment of inflation targets.

Chart 1.3.2.
Possible Contribution of Exchange Rate Developments and Tax Adjustments in Tobacco Products to Annual Inflation without the CBRT's Policy Response (Percent)

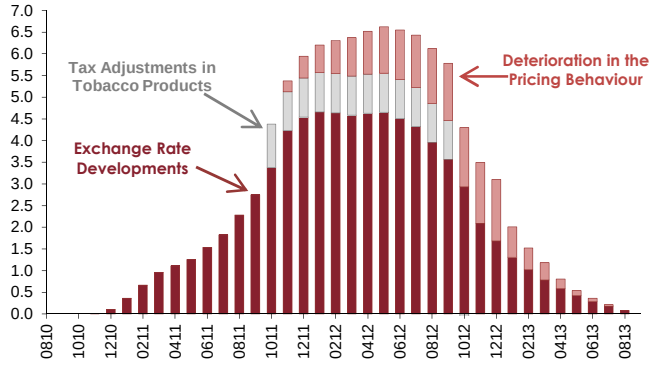


Table 1.3.2.
Revisions to Year-end Inflation Forecasts without the CBRT's Policy Response

	2011	2012
July 2011 Forecast	**6.9**	**5.2**
Additional Tax Adjustment in Tobacco Products	0.6	-
Exchange Rate Developments	2.2	1.5
Commodity Prices	-0.1	-0.2
Output Gap	-	-0.1
Deterioration in the Pricing Behavior	0.5	1.4
Inflation Forecast without the CBRT's Policy Response	**10.1**	**7.8**

Source: CBRT.

1.4. Risks and Monetary Policy

The fact that inflation will hover above target in the short term poses risks regarding inflation expectations and the pricing behavior. As of October, the CBRT has adopted a policy stance aiming to eliminate these risks. These risks will be closely monitored in the upcoming period as well, and necessary measures will be taken to avoid deterioration in the inflation outlook.

The medium-term outlook of the Report assumes that global economic activity will stay weak for a long period with no further worsening in the current circumstances. Nevertheless, uncertainties regarding the global economy remain crucial. In particular, escalating problems of the euro area economies regarding sovereign debt continue to pose downside risks on the global economy. Concerns regarding the debt sustainability problems in the EU were further intensified in the interreporting period, and perceptions about a possible spillover of these problems to the banking sector in the region were heightened. The probability for a failure to solve the banking sector problems in the euro area as well as the further deepening of the global problems via a possible spread constitute a major risk factor. In order to maintain stability in the domestic markets, the CBRT will continue to take the required measures promptly by closely monitoring the global developments in line with the strategy formulated at the interim meeting of August 4, 2011.

The CBRT will continue to monitor fiscal policy developments closely while formulating monetary policy. The baseline scenario forecasts of the Report are based on the MTP framework, therefore fiscal discipline is assumed to be maintained. A revision in the monetary policy stance may be considered, should the fiscal stance deviate significantly from this framework, and consequently, have an adverse effect on the medium-term inflation outlook.

In the period ahead, monetary policy will continue to focus on achieving price stability on a permanent basis, while observing financial stability. To this end, the impact of the macroprudential measures taken by the CBRT and other relevant institutions on the inflation outlook will be assessed carefully. Maintaining fiscal discipline in the medium term and strengthening the structural reform agenda will contribute to the relative improvement of Turkey's sovereign risk, thereby supporting macroeconomic stability and price stability. Maintaining fiscal discipline will also provide room for monetary policy maneuver, and

support the social welfare by keeping interest rates permanently at low levels. In this respect, steps to be taken in order to implement the structural reforms envisaged by the recently announced MTP remains to be of utmost importance.

2. International Economic Developments

Global economic growth plummeted in the last quarter, and accordingly, global growth forecasts for 2011 and 2012 were revised downwards. It is notable that the decline in global growth forecasts was mainly in advanced economies, while the downward revisions for emerging economies remained limited.

In the interreporting period, the mounting concerns regarding sovereign debt sustainability in some euro area countries and the spillover of these problems into the banking sector have brought about a loss of confidence, thereby posing pressure on the economic activity by causing postponement of final expenditures. Delays in taking required measures for the euro area countries heighten political uncertainty. Problems in the region may continue to occupy the agenda unless EFSF (European Financial Stability Facility) is expanded significantly or a deeper union is constituted where fiscal policies are harmonized. The probability that banking sector problems in the region may not be solved and may pose stronger pressure on the economic activity by spreading to other regions is considered as a crucial risk factor.

The U.S. economic indicators suggest that economic activity and employment will remain weak (Box 2.1). The Fed chairman Bernanke underlined that besides the EU debt crisis, setbacks in employment and problems in the real estate market caused growth to lose momentum. In this context, the Fed ended the second round of quantitative easing, but still opted for qualitative easing while also sustaining the policy to purchase assets and keeping policy rates low for a long time. Meanwhile, the announcement by the U.S. President Obama of a new package to expand and extend the fiscal stimulus policy, which was enacted at end-2010, is another development that may affect growth positively.

In the euro area, the fast course of growth in the first quarter was replaced by a mild course in the second quarter. Leading indicators point that the slowdown in growth will get more pronounced in the third quarter. Given the current risk of a further deepening in the sovereign debt crisis and its transformation into a banking crisis, the euro area slowdown in economic activity is likely to continue in the upcoming periods. All these developments in

our major trading partner are estimated to have an adverse effect on Turkey's external demand.

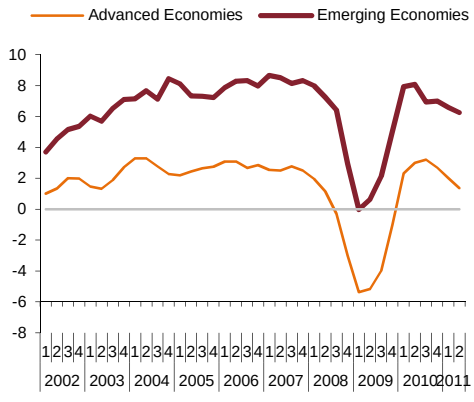
Economic activity in emerging economies is expected to edge down slightly due to the global turmoil. The sound structure of the economic fundamentals provides the said country group with relatively more resilience against global problems. However, the decline in the risk appetite triggered by the euro area debt crisis is believed to limit the capital inflows towards emerging economies for another while.

The downtrend in commodity prices that was manifested at the end of April continued through the last quarter. Demand growth expectations were revised downwards amid the slowdown in global economic activity. However, the occasional supply-side setbacks, particularly in crude oil and agricultural products, stand out as a risk factor with the potential to reverse the positive outlook in the commodity prices.

2.1. Global Growth

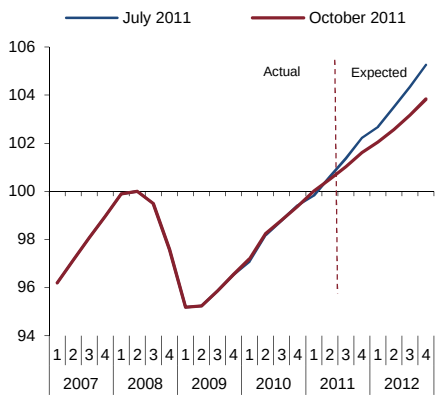
Global economic growth slowed down remarkably in the second quarter. It is notable that the slowdown is more pronounced in advanced economies than emerging economies. Export-weighted global production index, which exceeded its pre-crisis level in the second quarter of 2011, also points to a weaker external demand outlook for 2011 and 2012, compared to the July Inflation Report (Charts 2.1.1 and 2.1.2).

Chart 2.1.1.
Aggregated Growth Rates*
(Annual Percent Change)



* Weighted by each country's share in global GDP.
Source: Bloomberg, CBRT.

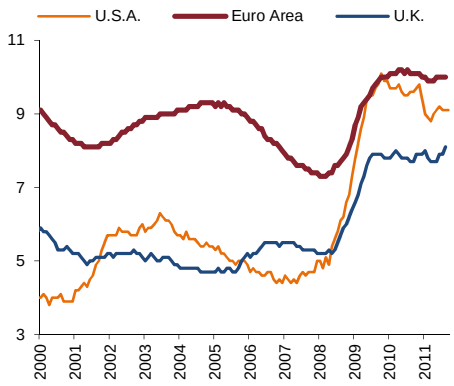
Chart 2.1.2.
Global Production Indices
(1996Q1=100)



Source: Bloomberg, Consensus Forecasts, CBRT.

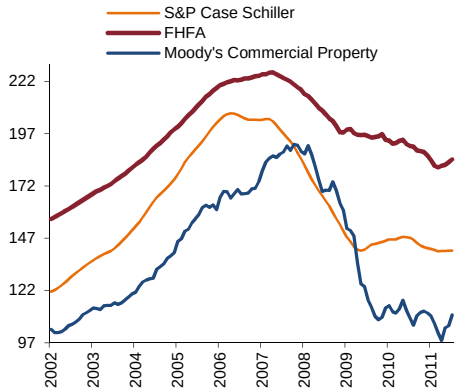
Low rates of employment growth in advanced economies and the resulting high unemployment rates continue to pose risk on the robustness and sustainability of growth (Chart 2.1.3). On the other hand, the U.S. real estate market does not signal for a significant recovery. (Chart 2.1.4).

Chart 2.1.3.
Unemployment in Advanced Economies
(Percent)



Source: Bloomberg.

Chart 2.1.4.
Real Estate Prices in the U.S.



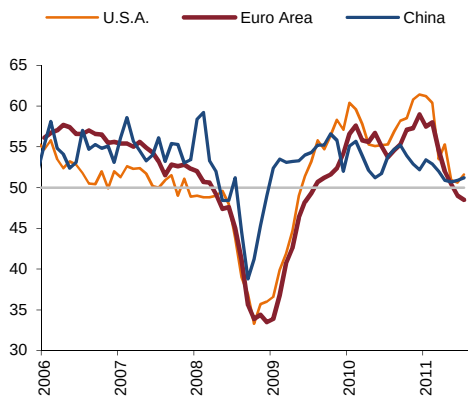
Source: Bloomberg.

The downtrend in JP Morgan Global PMI indices, the most recent data for the third quarter, points that the slowdown in the global economy continues (Chart 2.1.5). As for the euro area, it is particularly notable that the index fell sharply below the neutral level (Chart 2.1.6).

Chart 2.1.5.
JP Morgan Global PMI Indices

Source: Bloomberg.

Chart 2.1.6.
PMI Indices



Source: Bloomberg.

Global growth forecasts presented in the October Consensus Forecasts Bulletin suggest that forecasts for 2011 and 2012 year-ends were significantly pulled down, particularly for the U.S. and the euro area, compared to the July Inflation Report period (Table 2.1.1).

Against this background, the external demand outlook for the baseline scenario forecasts in the last section of the Report was revised downwards amid the downward revision of growth expectations for the advanced countries having high shares in Turkey's exports compared to the July Inflation Report.

Table 2.1.1.
Growth Forecasts
(Annual Percent Change)

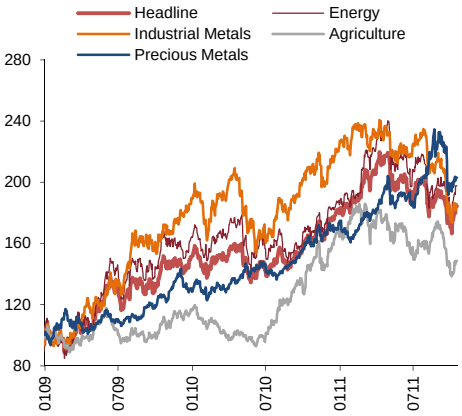
	2011		2012	
	July	October	July	October
World	3.2	3.0	3.6	3.0
Advanced Economies				
U.S.A.	2.5	1.7	3.0	1.9
EU	2.0	1.6	1.6	0.6
Germany	3.4	2.9	1.9	1.0
France	2.0	1.6	1.7	0.9
Italy	0.9	0.7	1.0	0.0
Spain	0.7	0.7	1.3	0.6
Portugal	-2.0	-2.0	-1.7	-2.7
Ireland	-0.1	1.0	1.2	1.0
Greece	-3.9	-5.4	-0.2	-2.9
Japan	-0.7	-0.5	3.1	2.2
U.K.	1.5	1.0	2.2	1.5
Emerging Economies				
Asia-Pacific	4.4	4.5	5.7	5.2
China	9.2	9.1	8.8	8.5
India	7.9	7.5	8.3	7.9
Latin America	4.5	4.3	4.2	4.0
Brazil	4.0	3.6*	4.2	3.9*
Eastern Europe	4.3	4.3	4.3	3.4

* As of September.
Source: Consensus Forecasts.

2.2. Commodity Prices

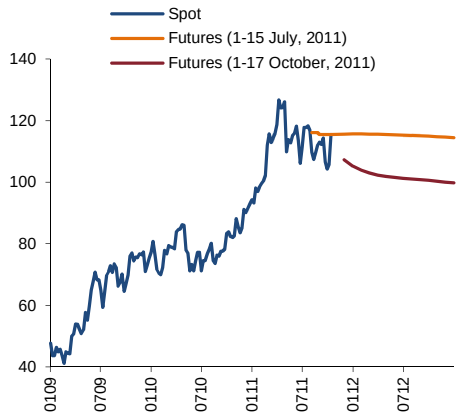
Global commodity prices, especially energy and industrial metal prices which are more sensitive to global growth, displayed a downward course in the third quarter. Industrial metal prices hit the last year's low due to problems in the euro area besides the contractionary monetary policy implemented by the Chinese government. Precious metal prices, reaching historical peaks at the end of August amid the euro area debt crisis and the U.S. credit rating downgrade, converged to early third-quarter levels as a result of the decline over the last month (Charts 2.2.1 and 2.2.2).

Chart 2.2.1.
S&P Goldman Sachs Commodity Prices
(January 2009=100)



Source: Bloomberg.

Chart 2.2.2.
Crude Oil (Brent) Prices
(USD/bbl)



Source: Bloomberg.

Downward revisions to global growth forecasts in the third-quarter brought about a revision in the demand for crude oil. The IEA forecast for 2011 daily crude oil demand was revised downward by 0.4 million barrel since the January Inflation Report (Table 2.2.1). Even though crude oil prices saw a decline subsequent to these developments, supply-side developments put a cap on the downward movement of oil prices.

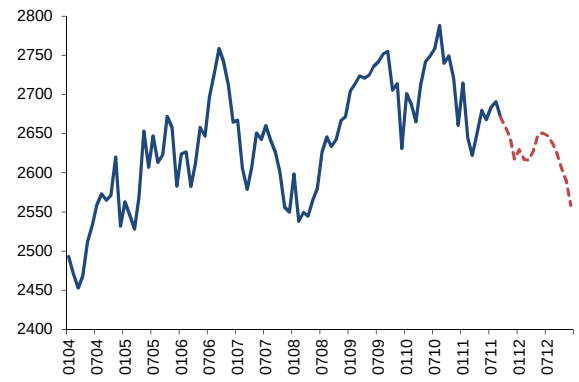
Table 2.2.1.
Crude Oil Demand and Supply Forecasts

	January 2011	September 2011
DEMAND		
2010	87.7	88.3
2011	89.1	89.3
2011 Demand Increase	1.4	1.0
SUPPLY (NON-OPEC)		
2010	52.8	52.6
2011	53.4	52.8
2011 Supply Increase	0.6	0.2
SUPPLY (OPEC)		
2010	35.3	35.4
2011	36.4	35.4
2011 Supply Increase	1.1	0.0

Source: IEA, U.S. Department of Energy.

The disruptions in crude oil supply by non-members of OPEC cause the inventories to remain on decline and crude oil market to be more fragile (Chart 2.2.3).

Chart 2.2.3.
OPEC Crude Oil Inventories*
(Million Barrel)



* Dotted lines show the estimate values.
Source: U.S. Department of Energy.

Agricultural prices followed a volatile course in the third quarter and plummeted in the last month. The decline in prices is mainly attributed to supply-side developments. Partial elimination of drought-related concerns and the increase in the planting areas were featuring supply-side developments. However, prices of agricultural products continue to be a major source of uncertainty about the global inflation (Table 2.2.2).

Table 2.2.2.
Production, Consumption and Inventory Forecasts for Agricultural Commodities

	2009/2010	2010/2011	2011/2012
WHEAT (million tons)			
Initial Inventory	167.1	200.8	195.6
Production	684.4	648.2	681.2
Consumption	650.8	653.3	674.4
Period-end Inventory	200.8	195.6	202.4
CORN (million tons)			
Initial Inventory	147.2	143.9	129.8
Production	819.4	828.3	860.0
Consumption	822.7	842.4	866.7
Period-end Inventory	143.9	129.8	123.2
COTTON (million bales)			
Initial Inventory	60.7	44.0	44.9
Production	101.4	115.1	124.2
Consumption	119.1	114.3	114.4
Period-end Inventory	44.0	44.9	54.8

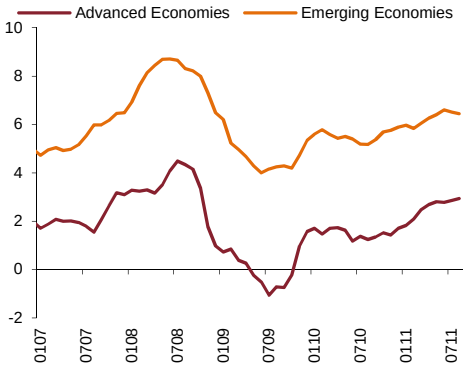
Source: U.S. Department of Agriculture.

2.3. Global Inflation

Amid growing expectations for a deceleration in global growth as well as the decline in commodity prices, inflation climb came to a halt on a global

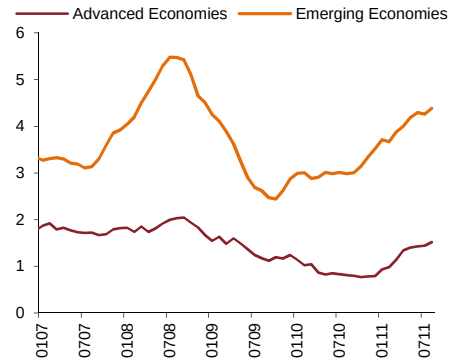
scale in the third quarter of 2011 (Chart 2.3.1). Similarly, core inflation rate hikes also lost momentum (Chart 2.3.2). Decreasing inflation in the U.S. and the euro area provided room for sustaining the implementation of expansionary monetary policies in advanced economies (Chart 2.3.3). Meanwhile, in emerging economies where domestic demand is relatively more robust, the recent movements in exchange rates may pull up inflation temporarily.

Chart 2.3.1.
Annual CPI Inflation in Advanced and Emerging Economies (Percent)



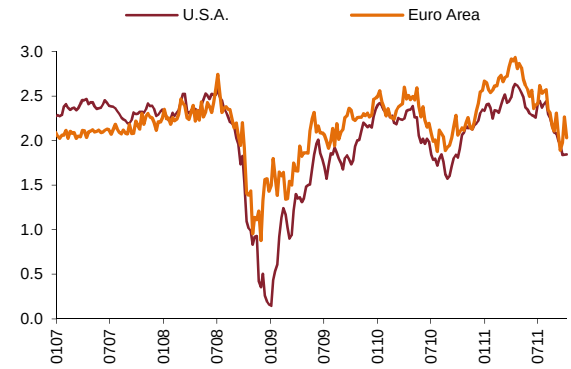
Source: Bloomberg, CBRT.

Chart 2.3.2.
Annual Core CPI Inflation in Advanced and Emerging Economies (Percent)



Source: Bloomberg, Datastream, CBRT.

Chart 2.3.3.
Inflation Compensation in the U.S. and the Euro Area (Percent)



Source: Bloomberg.

In line with the global growth outlook, inflation rates are also expected to decline on a global scale in 2012 (Table 2.3.1). As of September, year-end inflation forecasts for 2012 for advanced economies, except for Japan, remained largely unchanged compared to the previous reporting period. In the same period, inflation forecasts for emerging economies were subject to only minor revisions. While inflation forecasts for Asia-Pacific and Eastern Europe went up, inflation forecasts for the Latin America went down.

Table 2.3.1.
Inflation Forecasts
(Annual Percent Change)

	2011		2012	
	July	October	July	October
World	3.7	3.7	3.0	2.9
Advanced Economies				
U.S.A.	3.1	3.1	2.1	2.1
EU	2.6	2.6	1.9	1.8
Germany	2.3	2.3	2.0	1.9
France	2.1	2.1	1.8	1.7
Italy	2.7	2.7	2.1	2.0
Spain	3.0	3.1	1.7	1.6
Portugal	2.8	3.3	1.4	1.5
Ireland	1.3	1.4	0.6	0.9
Greece	2.9	2.8	0.9	1.1
Japan	0.3	-0.2	0.2	-0.2
U.K.	4.4	4.4	2.6	2.7
Emerging Economies				.
Asia-Pacific	5.1	5.4	4.2	4.3
China	5.0	5.4	3.9	4.0
India	7.7	8.1	7.0	7,1
Latin America	7.6	6.8	7.1	6.4
Brazil	6.3	6.4*	5.1	5.4*
Eastern Europe	6.6	6.4	5.8	6.0

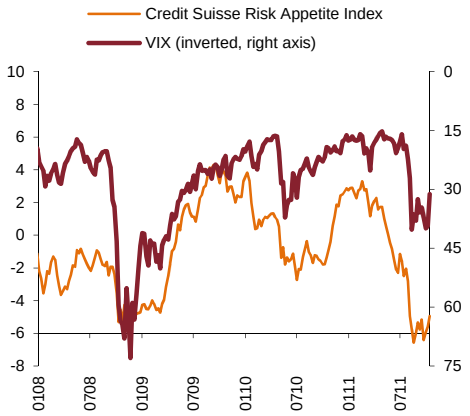
* As of September.
Source: Consensus Forecasts.

2.4. Financial Conditions and Risk Indicators

The main factor influencing financial markets in the third quarter was the spillover of concerns over the debt problems in the peripheral European countries into core countries to cover the banking sector as well (Box 2.1). In the meantime, downgradings were observed in credit ratings of both some core countries and private banks.

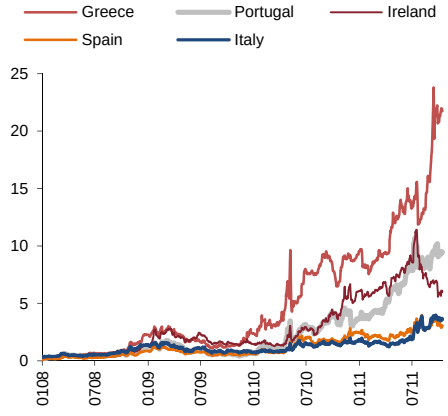
Along with the spreading debt crisis, global risk appetite recorded sizeable decreases (Chart 2.4.1). Even though, measures entaiingl the purchase of Spanish and Italian bonds by the ECB and the expansion of EFSF were adopted, these measures failed to permanently establish confidence in the markets as they were only considered to delay the problem even though having halted the deterioration in the risk appetite. In line with these developments, the spread between the bonds of countries experiencing debt problems and the German bonds posted a marked increase (Chart 2.4.2).

Chart 2.4.1.
Global Risk Appetite
(Points)



Source: Bloomberg, Credit Suisse.

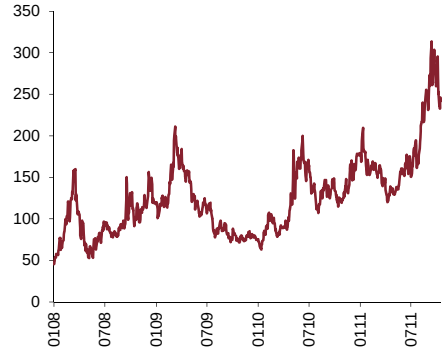
Chart 2.4.2.
Bond Yield Spreads in Selected Countries over German Bonds
(10-Year, Points)



Source: Bloomberg.

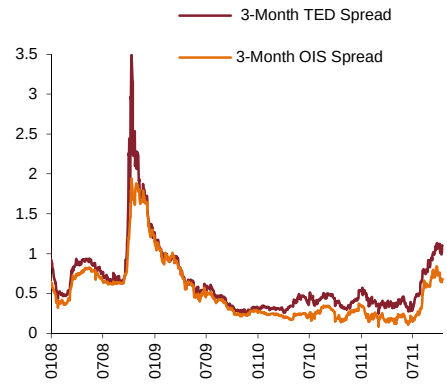
The risks brought about by the debt crisis also had an adverse effect on the European banking sector, and banking sector CDS rates increased sharply, while credit ratings of various banks were lowered (Chart 2.4.3). Against these developments, counterparty risk in the banking sector as well as the TED and OIS spreads increased (Chart 2.4.4).

Chart 2.4.3.
ITraxx Europe Senior-Financials Index
(5-Year, Basis Points)



Source: Bloomberg.

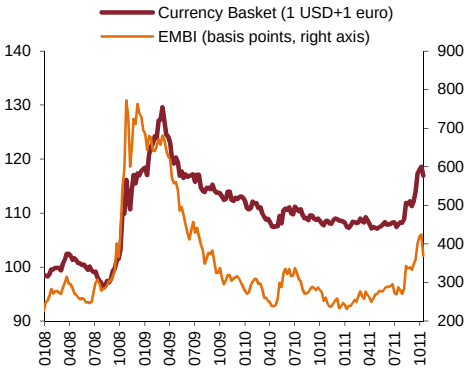
Chart 2.4.4.
3-Month TED and OIS Spreads
(Point)



Source: Bloomberg.

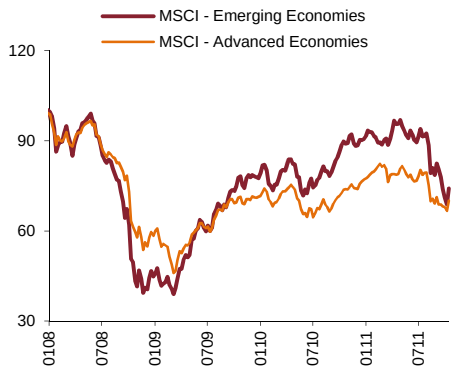
Deterioration in risk appetite also had a negative impact on emerging economies, causing risk indicators of these economies to soar. Consequently, massive capital outflows occurred, asset values in emerging economies dropped and exchange rates saw notable depreciations (Charts 2.4.5 and 2.4.6).

Chart 2.4.5.
Exchange Rate* and Risk Premium Indicators for Emerging Economies



* Arithmetical average of the exchange rates of emerging market currencies against the currency basket of 1 USD and 1 euro. Equals 100 on June 2007, and an upward movement denotes depreciation in emerging market currencies.
Source: Bloomberg.

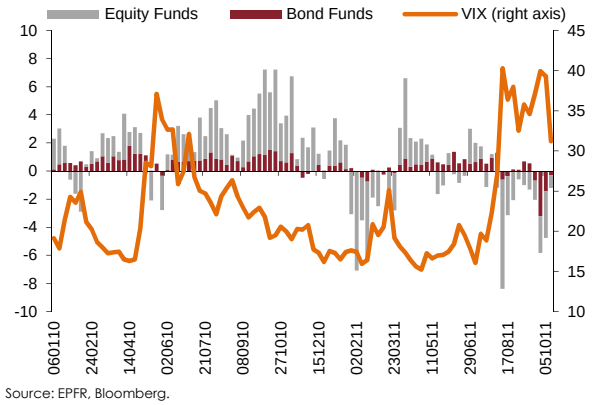
Chart 2.4.6.
Global Stock Markets
(December 2007=100)



Source: Bloomberg.

As for the portfolio flows, inflows for borrowing securities posted a significant quarter-on-quarter decline and stock funds saw tremendous outflows (Chart 2.4.7). Even though, the interest rate differentials between advanced and emerging economies, as well as growth expectations, bolster capital inflows towards emerging economies, mounting concerns regarding advanced economies may limit capital flows. Indeed, both the IMF and the IIF expect a notable decline in net capital flows growth rate, excluding public sector, in 2012 compared to 2011.[1]

Chart 2.4.7.
Portfolio Flows to Emerging Economies
(Billion USD)

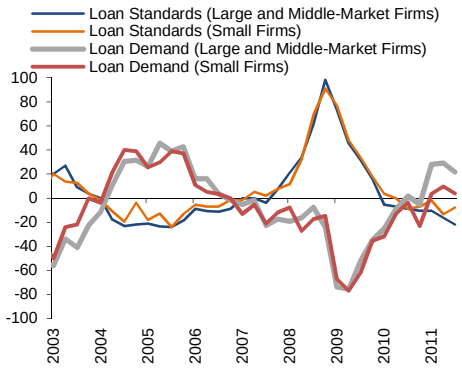


Source: EPFR, Bloomberg.

[1] IMF World Economic Outlook September 2011 and IIF Research Note "Capital Flows to Emerging Market Economies", dated September 25, 2011.

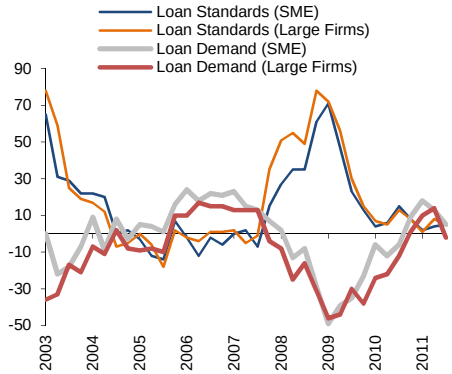
An analysis of credit markets suggests that according to the results of the Fed's Lending Survey, easing in credit conditions displayed no significant change, while the uptrend in credit demand lost pace (Chart 2.4.8). Meanwhile, problems in the euro area had a negative impact on credit markets as well. ECB's Lending Survey suggested that tightening in credit conditions continue, and the credit demand by small and medium-sized firms recorded a decline (Chart 2.4.9).

Chart 2.4.8.
U.S. Lending Survey*
(Percent)



* Upward movements indicate tightening in credit conditions.
Source: Fed.

Chart 2.4.9.
Euro Area Lending Survey*
(Percent)



* Upward movements indicate tightening in credit conditions.
Source: ECB.

2.5. Global Monetary Policy Developments

It should be noted that the normalization process, which started in mid-2010 in the global monetary policy, was reversed in the past quarter given the negative global growth outlook. While monetary policy assumed a further easing trend in the last quarter in advanced economies, and G4 countries in particular, policy rate hike cycle in emerging countries was interrupted with macroprudential measures still remaining broadly in force.

In the last Report, it was stated that the policy rates had started to normalize in advanced economies amid the post-crisis recovery in some advanced economies. Indeed, the policy rate hike cycle launched by some major central banks in the second quarter also continued throughout the early third quarter, with the ECB and the Bank of Sweden raising policy rates by 25 basis points in July. However, parallel to the re-troubling of the global growth outlook in the past quarter, this process was terminated and policy rates in advanced economies remained flat (Charts 2.5.1and 2.5.2).

Chart 2.5.1.
Policy Rate Changes in Advanced Economies from Jan. 2010 to Sept. 2011* (Basis Points)

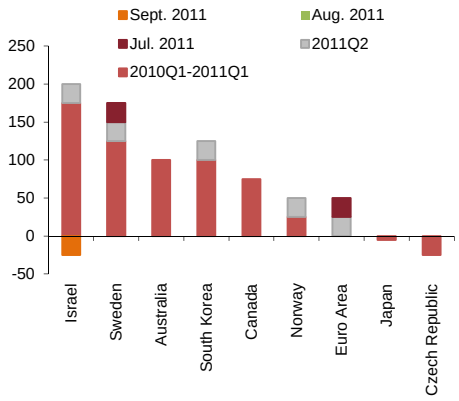
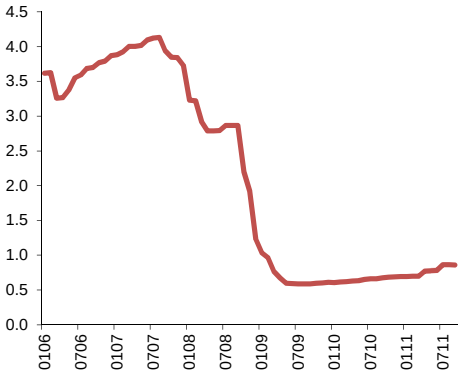


Chart 2.5.2.
Policy Rates in Advanced Economies
(Percent)



* As of end-September 2011.
Source: Bloomberg, CBRT calculations.

In addition to the expected low course of policy rates for an extended period (Chart 2.5.3), G4 countries signaled further quantitative easing in their monetary policies during the past quarter. For example, on August 9, the Fed noted that policy rates would be kept at their low levels at least until mid-2013. The Fed also announced a new package entailing the sales of short-term bonds and the purchase of long-term bonds of USD 400 billion without influencing the balance-sheet size with a view to reducing borrowing costs in the economy in general. Subsequent to this decision, the Inflation Report released by the Bank of England also signaled that policy rates would be kept at low levels for a long time and quantitative easing practices would be maintained. Indeed, following the Monetary Policy Committee meeting on October 6, the Bank of England announced that the size of asset purchase program was increased. Similarly, the ECB and the Bank of Japan also announced that quantitative easing packages were extended in August, resulting in an easing in their monetary policies. In short, by the end of the last quarter, monetary policy in advanced economies were eased further both through low policy rates as well as extended quantitative easing packages, and it is envisaged that monetary policy in these economies would also remain loose in the forthcoming period.

Chart 2.5.3.
Expected Policy Rates in Advanced Economies
(Basis Points)

Source: Bloomberg.

The normalization process in policy rates, which started in mid-2010 in emerging economies, was interrupted in the last quarter and aggregated indices suggest that the composite policy rates for emerging economies followed a flat course (Charts 2.5.4 and 2.5.5). Emerging economies continued with the implementation of macroprudential measures in the last quarter in order to minimize the possible effects of capital inflows on their economies.

Chart 2.5.4.
Policy Rate Changes in Emerging Economies from Jan. 2010 to Sept. 2011*
(Basis Points)

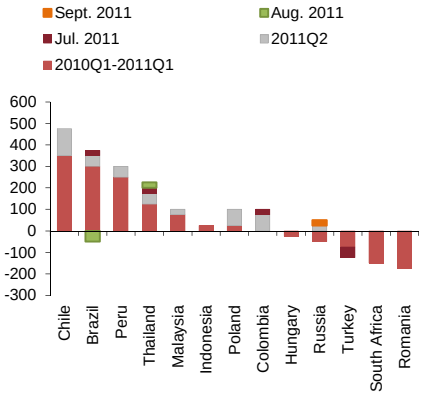
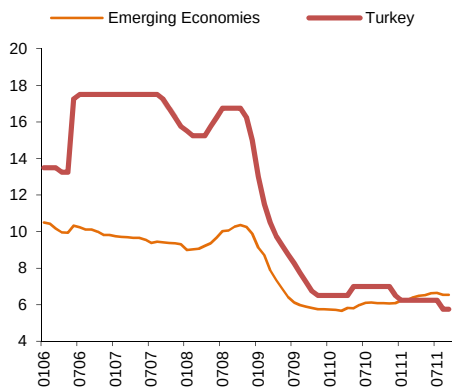


Chart 2.5.5.
Policy Rates in Inflation-Targeting Emerging Economies
(Percent)



* As of end-September 2011.
Source: Bloomberg, CBRT calculations.

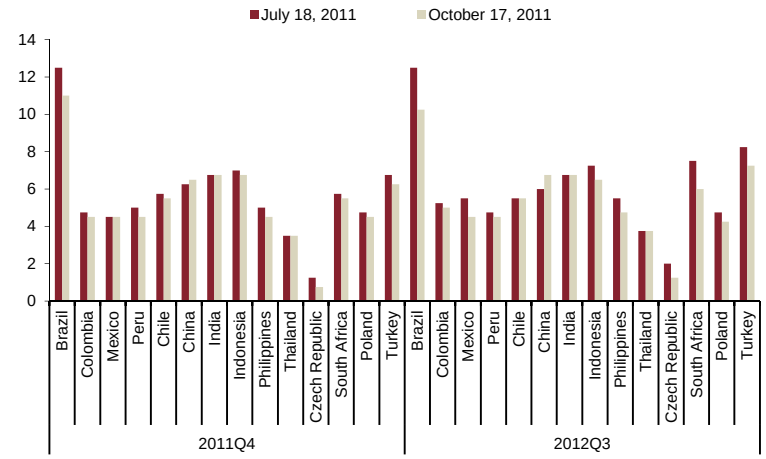
Given the expectations that global growth will lose pace and monetary policy in advanced economies will further be eased in the forthcoming period, policy rate expectations of many emerging economies were also revised downwards (Chart 2.5.6). However, in order to balance macrofinancial risks,

emerging economies are expected to sustain the use of alternative policy tools in the period ahead.

Chart 2.5.6.

Expected Policy Rates in Emerging Economies

(Basis Points)



Source: Bloomberg.

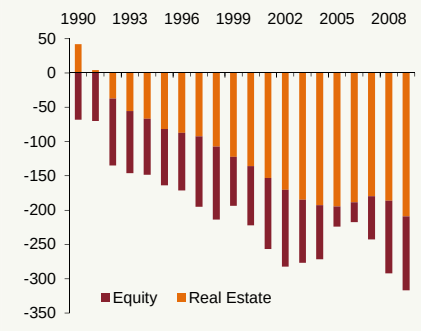
Box 2.1 Balance Sheet Recessions: A Comparison between Japan and the U.S.

Having officially overcome the longest-lasting and the deepest crisis of its history since the Great Depression by July 2009, the U.S. economy has yet to grasp a stable and sustainable growth despite the implementation of expansionary fiscal and monetary policies. The reasons underlying this failure will be evaluated in this Box by sketches from Japan in 1990s.

A brief introduction to the concept of balance sheet recession will be helpful for this analysis. Balance sheet recessions refer to the demand gap due to asset price bubbles that cause damage in the balance sheets of the private sector which has acquired these assets by borrowing. The private sector having assets with market value dropping far below its debt, goes through a long and challenging period of deleveraging in order to repair balance sheet. Increased propensity to save of the deleveraging sectors leads to a deflationary demand gap in the economic activity. In such an environment, public sector spending in order to compensate for the deflationary demand gap becomes quite important.

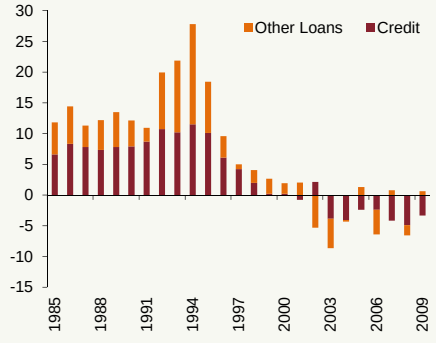
While Japanese economy was growing rapidly with significant contribution from investment expenditures at end 1980s, the growth in the real sector was accompanied by accumulated fragilities in the financial sector. Starting from 1989, stock prices, which had been soaring in tandem with foreign investment aiming to exploit the opportunities in a fast-growing economy, saw sharp declines followed by plunging commercial real estate and land prices in 1991. For example, in the first five years, stock prices and commercial real estate prices went down by 50 and 31 percent, respectively. Consequently, the total wealth loss amounted to 137 percent of the Japanese GDP in this period (Chart 1). Although Tokyo Stock Exchange experienced occasional rebounds through purchases by non-residents, land and commercial real estate prices fell steadily, registering a 75 percent decline from its peak in 1991 to August 2011, thus causing wealth loss to persist.

Chart 1. Accumulated Wealth Loss in Japan
(Percent of GDP)



Source: www.esri.cao.go.jp

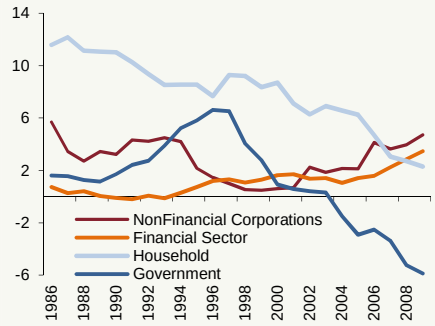
Chart 2. Real Sector Borrowing in Japan
(Percent of GDP)



Source: www.esri.cao.go.jp

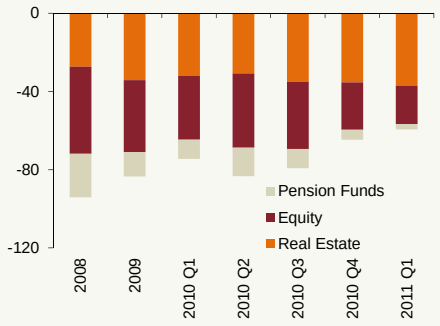
Having caught by the crisis with a high leverage ratio, the corporate sector has been net debt re-payer due to damage in the balance sheets even at periods of practically zero interest rates (Chart 2). This attitude was reflected as a deflationary demand gap on aggregate. In such a case of diminished effectiveness of monetary policy, demand gap caused by the corporate sector was overhauled via public spending, and a possibly severe drag in economic activity was thus prevented (Chart 3).

Chart 3. Japanese Propensity to Save
(Percent of GDP)



Source: www.esri.cao.go.jp

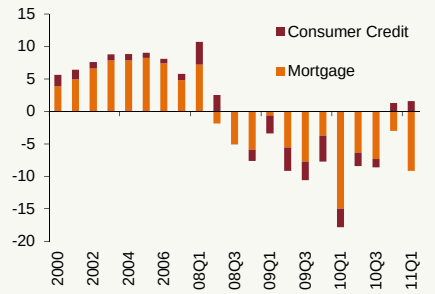
Chart 4. Accumulated Wealth Loss in the U.S.
(Percent of GDP)



Source: www.federalreserve.gov

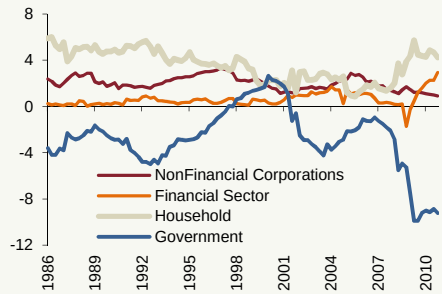
As for the U.S., the crisis, which was manifested amid the problems in the subprime market due to declining housing prices, spreaded across the globe with the bankruptcy of Lehman Brothers in October 2008. By the second half of 2011, housing prices had fallen by 32 percent from the peak of 2006, whereas stock prices had dropped by 8 percent from September 2008. The U.S. stock market, which has compensated for the value loss experienced during the first phase of the crisis on the back of the effective use of expansionary monetary and fiscal policies, and the real estate prices, the downtrend of which was interrupted following the 32 percent decline, point to a milder outlook when compared to Japan. Indeed, the total wealth loss due to declines in the stock market and the real estate prices remained limited to 59 percent of the U.S. GDP during the October 2008-August 2011 period (Chart 4).

Chart 5. Household Borrowing in the U.S.*
(Percent of GDP)



* Annualized quarterly figures.
Source: www.federalreserve.gov.

Chart 6. The U.S. Propensity to Save
(Percent of GDP)



Source: www.federalreserve.gov.

Unlike the Japanese case, in the U.S., the wealth loss was experienced by the household sector. With damaged balance sheets, the U.S. households have been deleveraging since mid-2008 (Chart 5). The Japanese corporate sector's behavior observed in the 1990s and the U.S. households' behavior in the post-2008 resemble each other (Charts 3 and 6). Public spending played a significant role also in the U.S. in closing the deflationary gap due to increased savings[2] of households and the financial sector. Bolstered also by the government expenditures, the U.S. economy was able to sustain growth in this period, albeit below its former trend.

In the U.S., where the wealth loss is more limited compared to Japan, the position of households as net debt re-payers, presents a negative outlook. This is essentially caused by the possibility of households' deleveraging behavior to be lasting due to the slow pace of debt re-payment. Indeed, the ratio of the U.S. household debt to disposable income, which was 133 percent at the onset of the crisis, went down by 14 percentage points to 119 percent at the end of the first quarter of 2011. The debt ratio, which dropped by 14 percentage points during the past 13 quarters, is expected to fall below 100 percent (the psychological boundary) no earlier than the first quarter of 2016, even assuming the same speed for re-payment.

The comparative analysis suggests that given that the monetary policy has less room for maneuver, keeping the fiscal policy expansionary is of great significance regarding the U.S. economic growth. The rising ratio of public debt to national income in Japan brought about pressures on the government, necessitating the implementation of fiscal austerity programs for two times, the former being in 1997 and the latter in 2001. Aimed at diminishing the budget deficit, these implementations were successful in their first years, but the receding tax revenues amid the slowing economic activity further deteriorated the budget balance in the subsequent years. Due to its debt stock dynamics, a similar expectation for fiscal discipline also applies to the U.S. economy. In this respect, keeping current spending in line with the medium-term tightening measures is crucial in order to alleviate uncertainties on growth.

[2] Parallel to the uncertainty and the declining household consumption, corporate sector borrowing and investment have also declined.

Box 2.2 Debt Crisis and Sustainability of Public Debt in the Euro Area

This Box analyzes the underlying reasons for the proposed solutions to overcome the recent debt problem in the euro area. In this context, the sensitivity of the countries' debt roll-over capacities against alternative market rates and growth rates are analyzed.

Table 1 displays where euro area countries stand with respect to forecasts for their public financing, debt liabilities and economic activity as of September. Average current GDP growth rates that are expected to be realized by 2016 in addition to estimated ratio of the gross public debt stock to GDP for end-2016 and the primary balance forecasts in compatible with these ratios are taken from the September 2011 issue of the IMF World Economic Outlook.

Table 1. IMF September 2011 Forecasts

	Nominal Interest Rate*	Nominal Debt Stock/GDP (End-2011, Percent)	Nominal Debt Stock/GDP (End-2016, Percent)	Nominal GDP Growth (2011-2016 Average, Percent)	Primary Balance/GDP (Percent)
Greece	22.6	165	162	1.9	3.84
Portugal	10.9	106	110	2.5	2.17
Ireland	7.6	109	114	4.1	-0.10
Italy	5.5	121	114	2.6	4.06
Spain	5.1	67	77	3.5	-1.73
France	2.6	86	87	3.7	-0.34
Germany	1.8	82	75	2.2	1.64

* Market interest rate on September 30, 2011.

Given the average market interest rate and the average current GDP growth expectation for the 5-year period until 2016, the required average primary balance rate compatible with the gross debt stock to GDP ratio envisaged by the IMF for end-2016 is calculated by solving the nested standard debt dynamics equation.[3] The results of this solution using alternative interest and growth rates are displayed in Tables 2 and 3, respectively.

[3] Debt stock dynamics equation is taken from Değerli and Keleş(2011).

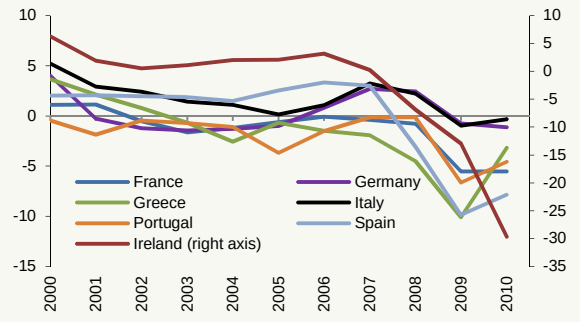
Table 2. The Sensitivity of the Primary Balance to Interest Rates*

	-200 basis points	-150 basis points	-100 basis points	-50 basis points	0 basis point	+50 basis points	+100 basis points	+150 basis points	+200 basis points	IMF September Forecasts
Greece	31.34	32.17	32.99	33.81	34.64	35.46	36.29	37.11	37.94	3.84
Portugal	5.93	6.47	7.01	7.54	8.08	8.62	9.16	9.69	10.23	2.17
Ireland	0.66	1.21	1.77	2.33	2.88	3.43	3.99	4.54	5.10	-0.10
Italy	2.49	3.08	3.68	4.27	4.86	5.45	6.04	6.64	7.23	4.06
Spain	-2.31	-1.95	-1.59	-1.23	-0.88	-0.52	-0.16	0.19	0.55	-1.73
France	-2.93	-2.49	-2.05	-1.62	-1.18	-0.74	-0.31	0.13	0.56	-0.34
Germany	-0.34	0.06	0.46	0.86	1.25	1.65	2.05	2.45	2.84	1.64

* 2011-2016 Average

The column "0 basis point" displays the average primary balance that should be attained by the countries during five years in order to reach the IMF debt stock forecast for end-2016, given the market interest rates on September 30, 2011. Accordingly, the primary surplus to be attained by Greece, Italy and Portugal to roll over their debt with this market interest rate is notably higher than their historical averages (Chart 1).

Chart 1. Primary Surplus Realizations
(Percent)



Source: WEO.

A comparison between the current analysis and the one constructed by August rates and the April 2011 growth forecasts of the IMF[4] exhibits a markedly deteriorated outlook for the above countries due to downward revision of their growth rates and soaring market interest rates. Compared to the previous analysis, Ireland and France on the other hand, present a favorable outlook amid declining market rates. As for Germany, despite the declining interest rates, the outlook deteriorated slightly following the downward revision of the growth forecasts. Spain, on the other hand, stands out as the country with the best position among the indebted countries in terms of public finance in both analyses.

[4] For a detailed analysis, see Değerli and Keleş (2011).

Table 3. The Sensitivity of the Primary Balance to Growth Rates*

	-150 basis points	-125 basis points	-100 basis points	-75 basis points	-50 basis points	-25 basis points	0 basis point	+25 basis points	+50 basis points	IMF September Forecasts
Greece	37.11	36.69	36.28	35.87	35.46	35.05	34.64	34.23	33.82	3.84
Portugal	9.71	9.44	9.17	8.89	8.63	8.36	8.08	7.81	7.54	2.17
Ireland	4.56	4.28	4.00	3.72	3.44	3.16	2.88	2.60	2.32	-0.10
Italy	6.62	6.33	6.03	5.74	5.44	5.15	4.86	4.57	4.28	4.06
Spain	0.22	0.04	-0.14	-0.33	-0.51	-0.69	-0.88	-1.06	-1.24	-1.73
France	0.13	-0.09	-0.31	-0.53	-0.74	-0.96	-1.18	-1.40	-1.62	-0.34
Germany	2.43	2.23	2.03	1.84	1.64	1.45	1.25	1.06	0.86	1.64

* 2011-2016 Average.

Table 3 results are obtained conducting a similar analysis under alternative growth scenarios. The column "0 basis point" displays the average primary balance that should be attained by the countries during five years in order to meet the September 2011 growth forecast of the IMF. In case Italy, Germany and France, the core economies of which growth forecasts were revised downwards, contract more severely than expected, the primary surplus becomes unsustainable, in particular in Italy.

Sustainability of debt dynamics of the euro area countries in the forthcoming period depends on the growth rate as well as the market interest rates. Given that the growth outlook will remain broadly unchanged in the short term, developments regarding the debt crisis will be more sensitive to interest rates. For debt sustainability, structural reforms both at local and regional scales should be completed immediately in order to ensure desired levels in market interest rates, which are sensitive to both growth outlook and economic uncertainties. In this regard, the political determinacy of the decision-makers and the steps to be taken are crucial for solving the debt crisis, which is gradually going beyond being sustainable.

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Değerli, A., G. Keleş, (2011), "Kamu Borç Stoku Sürdürülebilirliği ve Euro Bölgesi Borç Krizi" (in Turkish), CBRT Economic Notes No: 11/13.

Box 2.3 Real Effective Exchange Rate Indicators for Turkey

The real effective exchange rate is used to understand the level and the change in the prices of a product basket in a country relative to other countries in the comparison group. The movements in the real effective exchange rate can also provide information about the changes in the competitiveness of a country compared to others. Significant differences may exist between advanced and emerging economies in the calculation of real effective exchange rate, thus necessitating accurate selection of the comparison group. Based on this, this Box analyzes the real effective exchange rate movements in Turkey separately for advanced and emerging economies, and presents the possible causes of the divergences that arise in this comparison.

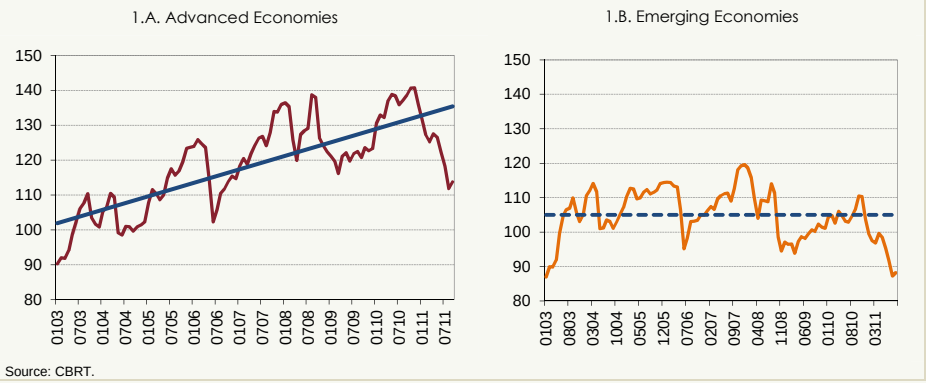
The real effective exchange rate for Turkey is calculated using the formula in equation 1. In this equation, P_{TUR} is the price level in Turkey, P_i^* is the price level in the country *i* within the comparison group, $e_{i,TUR}$ is the TL-denominated nominal effective exchange rate of the country *i*, w_i is the weight of the country *i* within the comparison group and *N* is the number of countries within the comparison group. An increase in the real effective exchange rate in this equation, which is abbreviated as REER, implies an increase in the prices of Turkish goods against foreign goods or appreciation of the TL in real terms.

$$REER = \sum_{i=1}^{N} w_i \frac{P_{TUR}}{P_i^* e_{i,TUR}} \qquad (1)$$

When weights (w_i) are fixed, REER may increase due to an increase in P_{TUR} or a decrease in P_i^* or $e_{i,TUR}$. The decrease in $e_{i,TUR}$ means a nominal appreciation of the TL. Moreover, given the nominal exchange rates, when inflation in Turkey is higher than other countries in the comparison group, REER is also expected to increase.

Chart 1 illustrates the real effective exchange rates of Turkey for two different comparison groups (advanced and emerging economies). As can also be inferred from this Chart, even though Turkey's real exchange rate appreciated in the last 8 years compared to advanced economies, it moved in line with the emerging economies.

Chart 1. CPI-Based Real Effective Exchange Rate (2003=100)



Source: CBRT.

Two important factors may be influential on the divergence between the real effective exchange rate movements of the advanced and emerging economies. The first one is the so-called Balassa-Samuelson effect which implies the real effective exchange rate increases due to faster increase of the prices of the non-tradable goods owing to the development of the economy. In the past 8 years, emerging economies grew by 6.66 percent on average, while advanced economies posted a 1.44 percent growth. Thus, the divergence of growth between emerging and advanced economies implies that the Balassa-Samuelson effect will be higher for emerging economies, and therefore, the real effective exchange rate will increase in emerging economies (Choudhri and Khan, 2004).

The second factor causing the divergence of the real effective exchange rate between advanced and emerging economies is the faster improvement of the quality and the variety of goods and services consumed by the emerging economies owing to the rapid economic growth. Accordingly, emerging economies will experience a higher positive bias in their inflation rates. Bils and Klenow (2001) estimate the annual quality bias for the U.S. economy to be 2.2 percent for the product basket used in their study. Employing the econometric method by Bils and Klenow (2001), Arslan and Ceritoğlu (2011) estimate the annual quality bias for Turkey to be approximately 3 percent. Similarly, Filho and Chamon (2008) estimate the annual quality bias for Brazil and Mexico, which are among emerging economies like Turkey, as 3 percentage points. This divergence in inflation measurement bias between advanced and emerging economies exacerbates the inflation in emerging economies relative to advanced economies when using equation 1, thereby leading to measurement-driven appreciation of the real exchange rate.

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3. Inflation Developments

3.1. Inflation

Consumer prices increased by 1.07 percent in the third quarter of 2011, while annual inflation went down to 6.15 percent with a limited quarter-on-quarter decline. Depreciation of the TL stood as the leading factor in inflation dynamics in this period. Annual food inflation posted a drastic decline due to the base effect driven by unprocessed food prices, whereas core inflation indicators went up owing to the exchange rate developments. Prices of core goods were particularly influenced by the exchange rate developments, while prices of services maintained their benign course. Despite the ongoing decline in international commodity prices, pressures driven by producer prices remained strong mainly due to the exchange rate effect.

Across subcategories, the rate of quarterly price changes was up from the average of previous years excepting the prices of food and services (Chart 3.1.1). The course of prices of core goods was affected by exchange rate developments and cumulative cost increases. In spite of the decline in international energy prices, the increase in domestic energy prices surpassed the average of the past years due to the weak course of the Turkish lira. On the food front, prices registered a lower increase compared to previous years owing to the favorable course of unprocessed food prices. Gold prices boosted in this quarter, reflecting upon annual consumer inflation as 0.25 percentage points (Chart 3.1.2). The underlying trend of services prices maintained its benign course in items other than transport. Consumer inflation is expected to rise in the last quarter due to the increases in administered prices and the unfavorable base effects led by the food prices. It is assessed that the lagged effects of exchange rate developments would persist, however, the secondary effects of price movements driven by exchange rate developments would remain limited amid the slowdown in the economic activity.

Chart 3.1.1.
CPI by Subcategories
(Third-Quarter Percent Change)

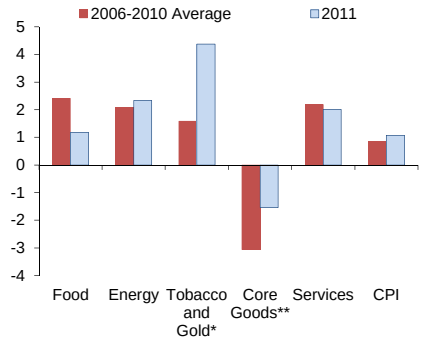
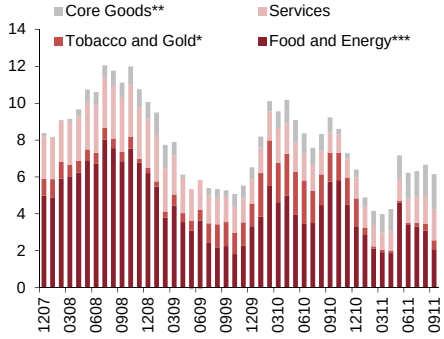


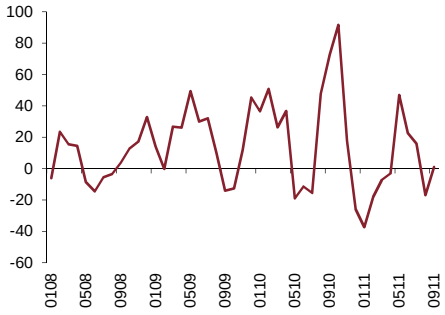
Chart 3.1.2.
Contribution to Annual CPI Inflation



* Tobacco and Gold: Alcoholic beverages, tobacco and gold.
** Core Goods: Goods excluding food, energy, alcoholic beverages, tobacco and gold.
*** Food and Energy: Food, non-alcoholic beverages and energy.
Source: TurkStat, CBRT.

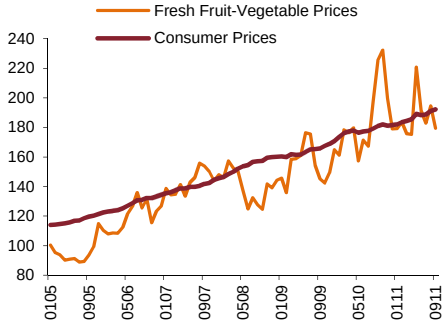
Having followed a volatile course in the first two quarters, food inflation plummeted by 5.9 percentage points to 2.23 percent as envisioned in the July Inflation Report. This is mainly attributable to the base effect led by the food prices. Prices displayed a moderate outlook in the last quarter excepting the base effect (Chart 3.1.3). Showing a decline, the prices of fresh fruits and vegetables led the favorable course of the food prices (Chart 3.1.4). Increases were registered in other unprocessed food prices, particularly in red meat (by 8.04 percentage points). Seasonally adjusted data more clearly reveal the base effects stemming from unprocessed food prices. Unprocessed food prices, which posted an increase far beyond the seasonal trend in the third quarter of 2010, displayed a sharp decline in the last two months of the same year. In this context, the base effect stemming from unprocessed food prices will have an adverse effect on food, and hence, on consumer inflation in November and December.

Chart 3.1.3.
Unprocessed Food Prices
(Seasonally Adjusted, 3-Month Average, Annual Percent Change)



Source: TurkStat, CBRT.

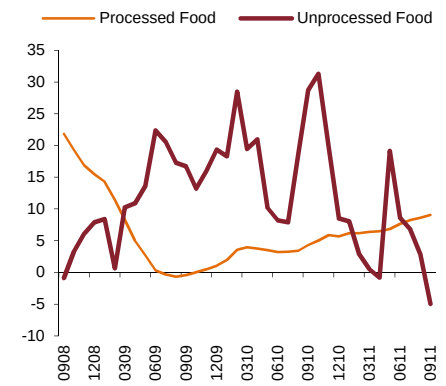
Chart 3.1.4.
Subcategories of Unprocessed Food and Consumer Prices
(Seasonally Adjusted, Index, 2003=100)



Source: TurkStat, CBRT.

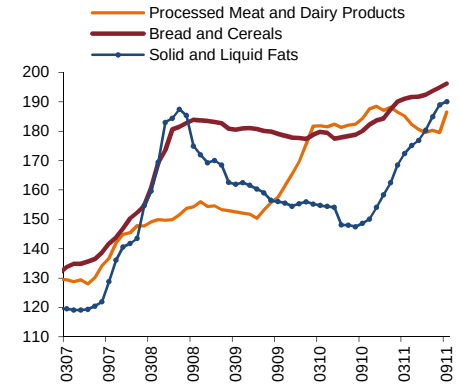
Processed food inflation surged by 1.42 percentage points to 9.07 percent in this quarter (Chart 3.1.5). This was mainly caused by oils and fats prices with an annual inflation reaching 27.89 percent and registering increases parallel to both international and domestic developments (Chart 3.1.6). Moreover, despite the decline in imports prices, the dramatic depreciation of the Turkish lira had adverse repercussions across the processed food prices in general, pushing them up by 3.03 percent, far beyond the averages of the previous years (Table 3.1.1).

Chart 3.1.5.
Food Prices
(Annual Percent Change)



Source: TurkStat, CBRT.

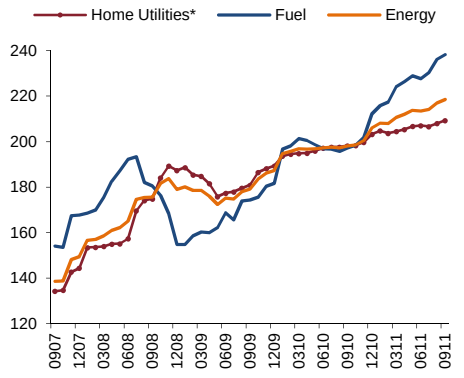
Chart 3.1.6.
Selected Processed Food Prices
(Index, 2003=100)



Source: TurkStat, CBRT.

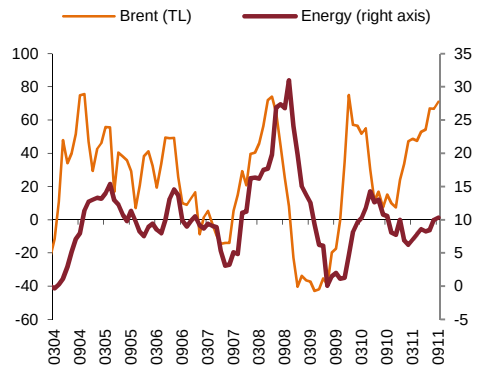
Energy prices increased by 2.34 percent during the third quarter (Table 3.1.1). Although international oil prices were slightly down compared to the end of the second quarter, depreciation of the Turkish lira accelerated the surge in domestic fuel prices (Chart 3.1.7). Similarly, among home utilities, solid fuel and bottled gas prices also posted increases. Thus, annual inflation in the energy group reached 10.3 percent in September (Chart 3.1.8). It was stated in the July Inflation Report that sharp increases in TL-denominated oil prices might lead to increases in natural gas and electricity prices. As a matter of fact, natural gas and electricity tariffs were raised starting from October 1. Accordingly, annual inflation in the energy group is expected to boost in October to add 0.5 percentage points to annual consumer inflation.

Chart 3.1.7.
Energy Prices
(Index, 2003=100)



* Home utilities include electricity, water, natural gas, bottled gas and solid fuel.
Source: TurkStat, CBRT.

Chart 3.1.8.
Energy and TL-Denominated Oil Prices
(Annual Percent Change)



Source: TurkStat, Bloomberg, CBRT.

The SCT rates were raised on some motor vehicles, mobile phones, alcoholic beverages and tobacco products by the Council of Ministers' decision, which was published on the Official Gazette on October 13, 2011. Tobacco products are estimated to become the largest contributor to consumer price hikes out of this tax rise, while the effect of other items is expected to remain limited. The estimation of the indirect tax on tobacco products and the final effect of the tax on consumer prices are analyzed in Box 3.2.

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

	2010			2011		
	III	IV	Annual	I	II	III
CPI	**1.15**	**1.55**	**6.40**	**1.57**	**1.83**	**1.07**
1. Goods	1.29	1.64	7.18	1.53	2.05	0.73
Energy	0.43	3.98	9.96	2.27	1.37	2.34
Food and Non-Alcoholic Beverages	7.02	-0.18	7.02	3.77	-2.46	1.18
Unprocessed Food	13.16	-3.05	8.52	5.08	-5.79	-1.00
Processed Food	1.69	2.59	5.68	2.61	0.57	3.03
Goods (excl. Energy and Food)	-2.96	2.21	6.09	-0.68	6.32	-0.36
Core Goods	-3.45	2.59	1.70	-1.08	7.73	-1.55
Durable Goods (excl. Gold)	-0.34	-1.06	0.26	4.26	1.85	3.69
Alcoholic Beverages, Tobacco and Gold	-1.27	0.93	24.61	0.81	1.05	4.38
2. Services	**0.73**	**1.31**	**4.24**	**1.67**	**1.22**	**2.02**
Rent	1.30	0.98	3.96	1.08	0.99	1.35
Restaurants and Hotels	1.56	2.30	9.76	1.65	1.80	2.37
Transport	1.83	1.28	7.04	2.28	2.10	3.07
Communication	-2.90	2.23	-3.51	1.96	-1.71	0.35
Other Services*	1.19	0.30	3.57	1.61	2.14	2.56

* Services excluding rents, restaurants and hotels, transport and communication.
Source: TurkStat, CBRT.

Annual inflation in core goods reached 7.64 percent in September amid the ongoing depreciation of the Turkish lira. Following a deceleration in the previous quarter, seasonally adjusted data point to a pick-up in core inflation in the third quarter (Chart 3.1.9). Price increases in durable goods, mainly automobile and furniture, were instrumental in this development in the third

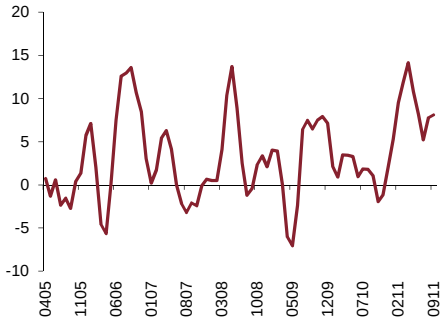
quarter (Table 3.1.2 and Chart 3.1.10). Meanwhile, following a stable increase since November 2010, annual inflation in clothing went down in September (Chart 3.1.10). However, this is envisaged to reflect the temporary effects exclusive to the sale season, and clothing prices are expected to speed up in the last quarter due to adopted measures in imports of textiles and ready-wear.

Table 3.1.2.
Prices of Core Goods
(Quarterly and Annual Percent Change)

	2010			2011		
	III	IV	Annual	I	II	III
Core Goods	**-3.45**	**2.59**	**1.70**	**-1.08**	**7.73**	**-1.55**
Clothing and Footwear	**-11.90**	**9.94**	**4.72**	**-12.04**	**25.08**	**-12.13**
Durable Goods (excl. Gold)	**-0.34**	**-1.06**	**0.26**	**4.26**	**1.85**	**3.69**
Furniture	1.77	-1.06	5.94	0.75	5.04	2.88
Electrical and Non-Electrical Appliances	-0.85	-0.23	-2.23	2.87	-1.26	0.34
Automobile	-0.61	-1.67	-0.26	6.31	2.29	5.68
Other Durable Goods	-1.81	0.90	1.79	2.15	2.71	1.85
Other	**0.58**	**1.18**	**0.91**	**1.82**	**2.09**	**1.54**

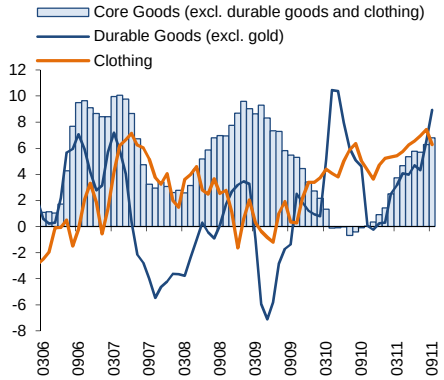
Source: TurkStat, CBRT.

Chart 3.1.9.
Prices of Core Goods
(Seasonally Adjusted, 3-Month Average, Annual Percent Change)



Source: TurkStat, CBRT.

Chart 3.1.10.
Prices of Core Goods
(Annual Percent Change)



Source: TurkStat, CBRT.

Prices of services surged by 2.02 percent, a rate close to historical averages (Chart 3.1.11). Among subcategories, rents displayed a favorable outlook compared to the previous quarter, while the rate of increase in prices of transport, restaurants and hotels remained unchanged from the previous periods. Stimulated by costs and the base effect in the third quarter, the annual rate of increase in the prices of services rose by 1.34 percentage points to 6.36 percent quarter-on-quarter. Particularly, the cumulative increases in fuel and processed food prices reflected on the prices of transport, restaurants and hotels (Chart 3.1.12). Meanwhile, prices for communication services posted a quarter-on-quarter increase, and annual inflation continued to rise due to the base effect. Regarding services, the impact of the depreciation in the Turkish

lira remained limited on the prices in certain groups like transport and other services.

Chart 3.1.11.
Prices of Services by Subcategories
(Third-Quarter Percent Change)

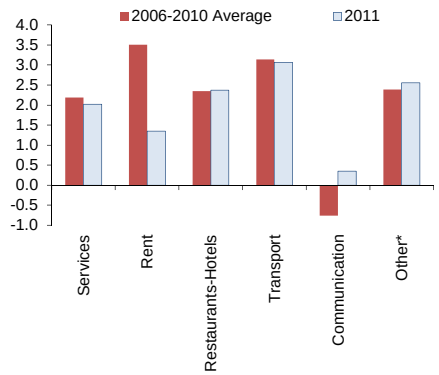
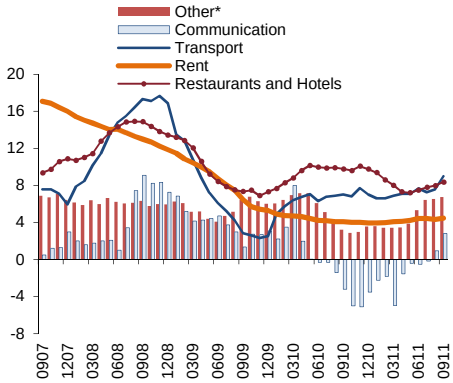


Chart 3.1.12.
Prices of Services by Subcategories
(Annual Percent Change)



* Services excluding rents, restaurants and hotels, transport and communication.
Source: TurkStat, CBRT.

Seasonally adjusted indicators point to an increase in the underlying trend of services price inflation in this quarter, following a downtrend in the first half of the year (Chart 3.1.13). On the other hand, the diffusion index, showing the ratio of items with increasing and decreasing prices to overall items in this subcategory, remained partly horizontal (Chart 3.1.14).

Chart 3.1.13.
Prices of Services
(Seasonally Adjusted, 3-Month Average, Annual Percent Change)

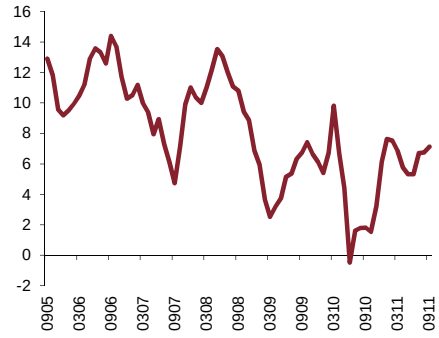
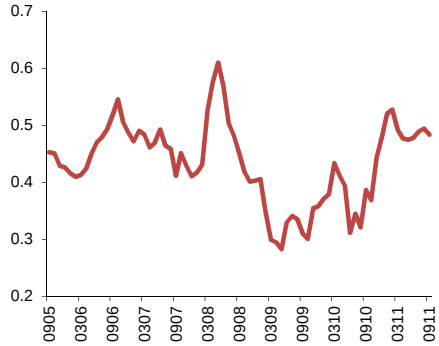


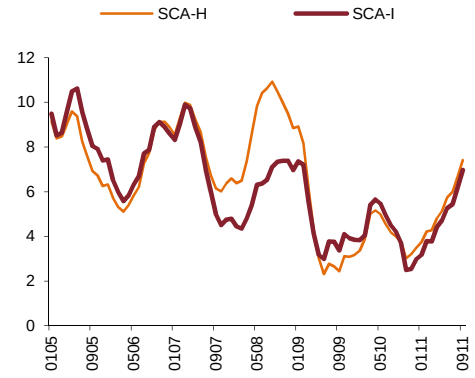
Chart 3.1.14.
Diffusion Index of Services Prices*
(Seasonally Adjusted, 3-Month Average)



* Diffusion index is calculated as the ratio of the number of items with increasing prices minus the number of items with decreasing prices to total number of items within a given month.
Source: TurkStat, CBRT.

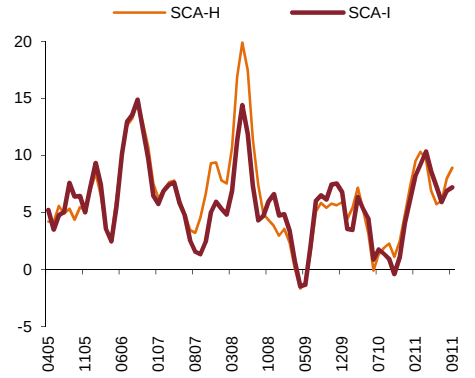
The annual rate of increase in core inflation indicators SCA-H and SCA-I continued to trend upward in the third quarter amid the developments in core goods inflation (Chart 3.1.15). Meanwhile, seasonally adjusted data indicate an upward trend starting from the third quarter (Chart 3.1.16).

Chart 3.1.15.
Core Inflation Indicators SCA-H and SCA-I
(Annual Percent Change)



Source: TurkStat, CBRT.

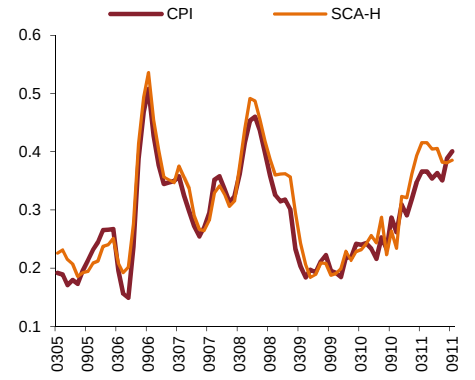
Chart 3.1.16.
Core Inflation Indicators SCA-H and SCA-I
(Seasonally Adjusted, 3-Month Average, Annual Percent Change)



Source: TurkStat, CBRT.

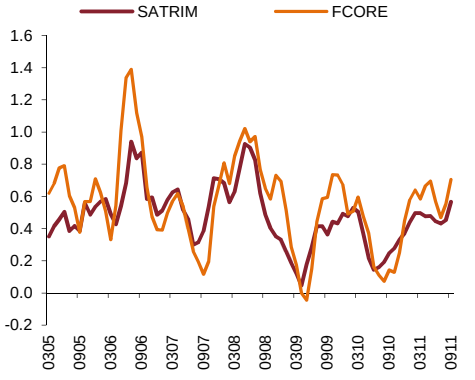
SCA-H diffusion index displays a rather flat outlook in the underlying inflation (Chart 3.1.17). On the other hand, alternative core inflation measures monitored by the CBRT were up compared to the second quarter (Chart 3.1.18).

Chart 3.1.17.
CPI and SCA-H Diffusion Indices
(Seasonally Adjusted, 3-Month Average)



Source: TurkStat, CBRT.

Chart 3.1.18.
Core Inflation Indicators SATRIM and FCORE*
(3-Month Average)

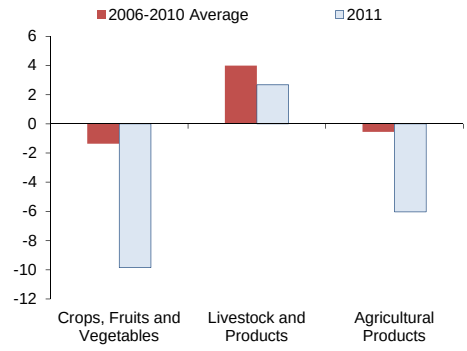


* SATRIM: Seasonally adjusted trimmed mean inflation.
FCORE: Factor model based core inflation indicator.
(See Inflation Report 2011-I, Box 3.2).
Source: CBRT.

Producer prices soared by 3.31 percent in the third quarter, while annual inflation amounted to 12.15 percent at the end of the quarter (Table 3.1.3). Amid falling prices of crops and fruits-vegetables, which also reflected on consumer inflation, agricultural prices went down by 6.03 percent. On the other hand, producer prices for livestock breeding posted an increase in this period (Chart 3.1.19 and Table 3.1.13). Crops, used as inputs for the manufacturing

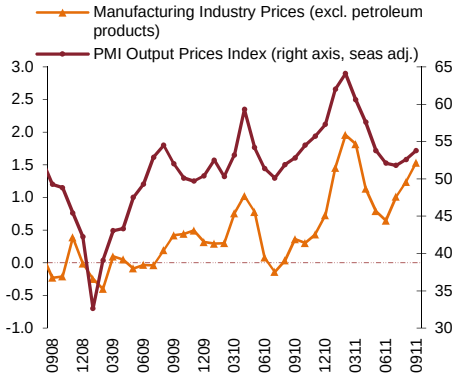
industry, also followed a moderate course in this period. Sunflower prices, which previously posed a significant pressure on consumer prices through prices of fats and oils, remained unchanged in this period. Moreover, wheat and cotton prices also went down in this quarter, alleviating the cost pressures on bread and cereals.

Chart 3.1.19.
Agricultural Prices
(Third-Quarter Percent Change)



Source: TurkStat.

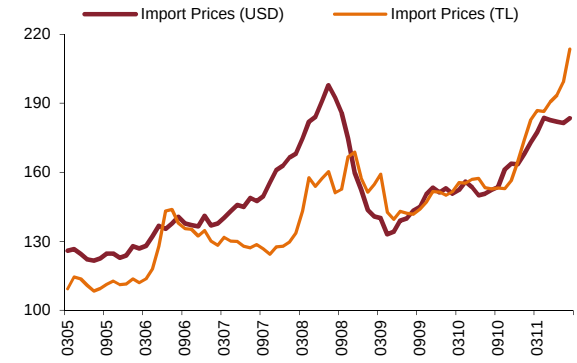
Chart 3.1.20.
Manufacturing Industry and PMI Output Prices



Source: TurkStat, Markit, CBRT.

The course of producer prices was mainly influenced by exchange rate developments in this quarter. The slowdown in international commodity prices, which started in the second quarter, gained momentum in the third quarter. Nevertheless, the significant depreciation of the Turkish lira increased TL-denominated import prices, leading to a re-acceleration of the manufacturing industry inflation (Charts 3.1.20 and 3.1.21). Thus, manufacturing industry prices excluding oil, rose by 4.67 percent in the last quarter, while the cumulative increase recorded since the onset of the year reached to 12.63 percent (Table 3.1.3). Although these price increases were reflected across all subcategories, producer prices were mainly affected through soaring prices of food, base metal, electrical machinery and equipment, and motor vehicles in this period. It is notable that the rise in costs spilled over into consumer prices through these channels, particularly through the durables. As this points to a sizeable cumulative effect, the rise in producer prices is believed to further weigh on consumer prices in the rest of the year.

Chart 3.1.21.
USD and TL-Denominated Import Prices
(Index, 2003=100)



Source: TurkStat.

Despite the ongoing strong pressures driven by producer prices, the relatively lower spillover effect of these increases into consumer prices compared to previous periods, signifies the role of demand conditions on the pricing behavior. Meanwhile, the probability that the depreciation of the Turkish lira may gradually be perceived as more permanent appears as a risk factor that may influence the extent of the exchange rate pass-through.

Table 3.1.3.
PPI and Subcategories
(Quarterly and Annual Percent Change)

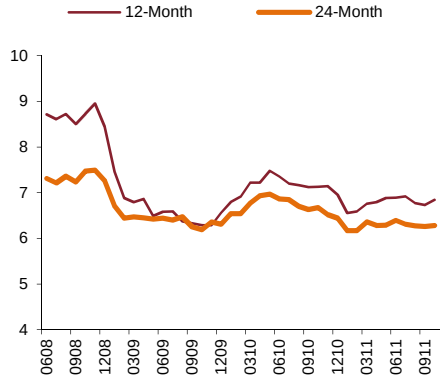
	2010			2011		
	III	IV	Annual	I	II	III
PPI	**1.51**	**2.21**	**8.87**	**5.40**	**0.77**	**3.31**
Agriculture	**1.71**	**0.26**	**14.52**	**5.84**	**-1.73**	**-6.03**
Crops, Fruits and Vegetables	2.78	-3.17	9.20	6.81	-2.67	-9.84
Livestock and Animal Products	6.23	8.21	29.85	-1.26	-0.39	2.68
Industry	**1.46**	**2.64**	**7.71**	**5.31**	**1.30**	**5.24**
Mining	3.75	0.95	7.11	9.70	1.08	4.94
Manufacturing	**0.99**	**2.86**	**6.62**	**6.27**	**1.98**	**4.98**
Manufacturing (excl. Petroleum)	1.09	2.20	5.92	5.55	1.95	4.67
Manufacturing (excl. Petroleum and Base Metals)	0.72	1.90	3.98	4.85	1.53	4.12
Electricity, Gas and Water	5.07	1.32	18.68	-4.08	-4.73	**7.89**

Source: TurkStat, CBRT.

3.2. Expectations

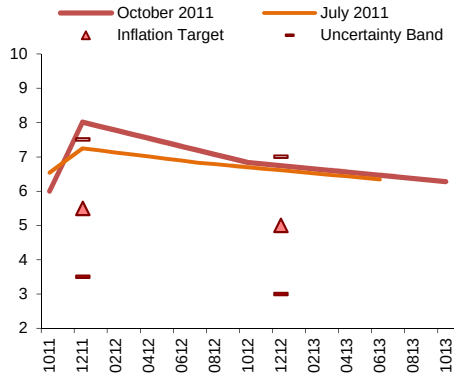
Having risen during the first half of 2011, inflation expectations remained relatively flat in the third quarter (Chart 3.2.1). Although inflation realizations in August and September were above expectations, medium-term expectations were not subject to a significant revision. Near-term inflation expectations were slightly down quarter-on-quarter (Chart 3.2.2). Currently, inflation expectations continue to hover above the year-end targets of 5.5 and 5 percent for 2011 and 2012, respectively.

Chart 3.2.1.
12- and 24-Month Ahead CPI Expectations*
(Annual Percent Change)



* CBRT Survey of Expectations, second survey period results.
Source: CBRT.

Chart 3.2.2.
Inflation Expectations Curve*
(Annual Percent Change)



* Calculated by linear interpolation of expectations for different time spans using the CBRT Survey of Expectations, second survey period results.
Source: CBRT.

The distribution of survey respondents' for both 12-month and 24-month ahead inflation expectations converged relatively in this period compared to July (Charts 3.2.3 and 3.2.4).

Chart 3.2.3.
Distribution of 12-Month Ahead Inflation Expectations*

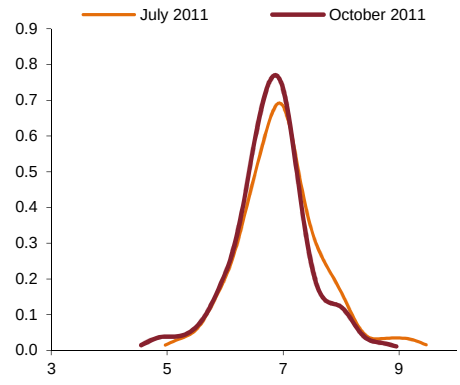
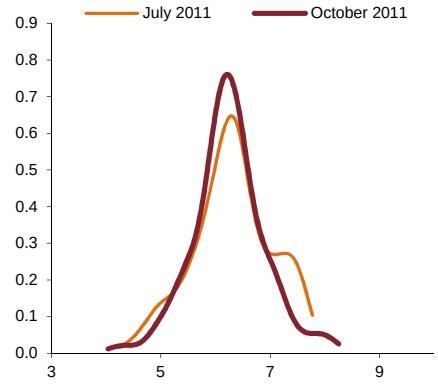


Chart 3.2.4.
Distribution of 24-Month Ahead Inflation Expectations*



* Horizontal axis depicts inflation rates, while the vertical axis indicates the Kernel forecast. CBRT Survey of Expectations, second survey period results.
Source: CBRT.

Box 3.1 Taxation of Tobacco Products and Its Effect on Prices

The main funding resource for governments is tax revenues. To this end, two types of taxes are collected. First type is made up of direct taxes like income tax collected on a certain ratio of income, whereas the second is indirect taxes levied on purchases of goods and services irrespective of the consumer's income. The most common example to indirect taxes is the Value Added Tax (VAT). In addition to VAT, Special Consumption Tax (SCT) is also collected in Turkey on some products including automobiles and technological products like mobile telephones as well as other products such as alcoholic drinks, tobacco products and fuel oil.

For the majority of the products under this scope, the base to apply for the calculation of the SCT is defined in the Article 11 of the Law on Special Consumption Tax No.4760 as "*…is constituted by the components of the value added tax base excluding the special consumption tax to be calculated*". In other words, the final consumer price is obtained by first adding SCT and then the VAT to the price set by the producer. However, for tobacco products, this rule is different such that the SCT base for tobacco products stated in the above law is not the producer's price,[1] but the product's retail price for final consumers. Therefore, this method gives us a non-linear taxation scheme which entails the collection of VAT on the calculated SCT, as well as the collection of SCT on the calculated VAT, since VAT is already included in the final consumer's price.

The relation between the unit producer price and the final sales price using this method can be illustrated by the following formula:

Final Sales Price = Producer Price + SCT Amount + VAT Amount

Using a mathematical illustration, this relation can be expressed as follows:[2]

Final Sales Price (FSP):	Y
SCT Amount:	$Y * sct$
VAT Amount:	$(X + Y * sct) * vat$
Producer Price:	X
$FSP = Y = X + [Y * sct] + [(X + Y * sct) * vat]$	

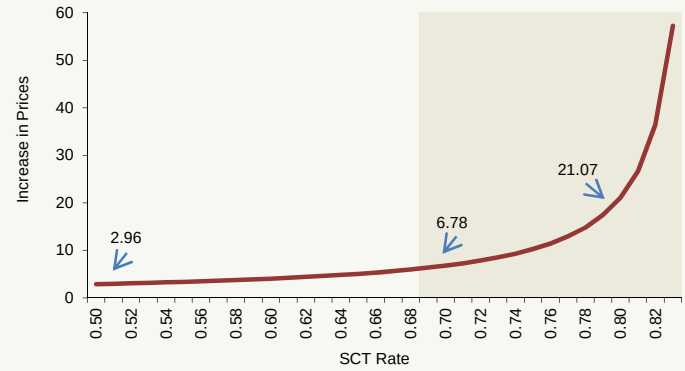
[1] The producer price in this Box refers to the non-taxed net price which includes the share of the producer as well as the dealer.
[2] The SCT and VAT rates are denoted as "sct" and "vat, respectively in the table. Amounts indicate the monetary sum corresponding to the said tax item. SCT base is the final sales price. VAT base is the sum of the producer price and the calculated SCT. The calculation method is displayed for the products subject to proportional SCT. The same method also applies to products subject to lump-sum SCT.

The final sales price (*Y*), given in the above equation, can be formulated as a function of the producer's price (*X*), the SCT rate (*sct*) and the VAT rate (*vat*) as follows:

$$FSP = Y = \frac{(1 + vat) * X}{1 - (1 + vat) * sct}$$

It is clear that when the producer's price (X) and the VAT rate (*vat*) are kept constant, an increase in the SCT rate (*sct*) increases the final sales price (*Y*). However, given the nature of the function, this relation is not linear. Assuming constant producer price and VAT rate, this non-linear relation clearly illustrates the rise in the final consumer price due to a 1-percent increase in the SCT rate (Chart 1). For example, under these assumptions, raising the SCT rate from 50 to 51 percent, 69 to 70 percent, and 79 to 80 percent results in a price increase in final tobacco products by 2.96, 6.78 and 21.07 percent, respectively. Thus, as the rate gets higher, the SCT rate-price increase curve gets steeper.

Chart 1. Sensitivity of the Prices of Tobacco Products to SCT Rates *
(Percent)



* Shows the effect of a 1-percent increase in the SCT rate on the price of final tobacco products.

In sum, as tobacco products are taxed using a unique approach, the level of the SCT rates determine to what extent tax adjustments are reflected on prices. Hence, as the SCT rate increases, a lower adjustment in SCT rates would suffice to attain a certain amount of increase in tobacco prices.

Box 3.2 Updated Estimates of Exchange Rate and Import Price Pass-Through

For central banks having price stability as the main objective, understanding the short and medium-term effects of exchange rate movements on inflation (pass-through) is crucial with regard to the implementation of the monetary policy. Hence, during the transition to inflation targeting, the CBRT produced a series of studies on analyzing the effects of the exchange rates on inflation in Turkey, and publicly shared these studies on its website. However, both the impact of the global crisis and the changing macroeconomic dynamics called for an update in estimates of the pass-through. With a view to informing the public about the recent extent of the pass-through, and also, enhancing the reliability of the inflation forecasts, this Box shares the updated estimates of the CBRT experts with the public.[3]

In seeking an answer to the question of how the changes in exchange rate and import prices affect inflation, the vector autoregressive (VAR) model approach proposed by McCarthy (2000) is adopted. Unlike other studies, multiple models with various variables are employed, and pass-through estimates obtained from alternative VAR models are jointly presented. Accordingly, seven different VAR models are estimated in order to analyze pass-through for the March 2002-June 2011 period on a monthly frequency.

Estimated models display a triangular-causal system and allow pricing in various stages through the production chain, thereby providing information on to what extent a shock in any stage is passed through to the other stage. Findings on the speed and duration of the pass-through are derived from the results of the impulse-response function. In the most general model [Model 7: $(\tilde{y}_t, \Delta e_t^b, \pi_t^m, \pi_t^p, \pi_t^c, \Delta i_t)$], where the order of variables is determined according to the identification of shocks; output gap, the change in the exchange rate basket, monthly rate of increase of import prices in USD, manufacturing industry inflation, core consumer price indicator (CPI excluding unprocessed food and alcohol-tobacco), inflation and finally the first difference of the nominal benchmark interest rate are denoted by $(\tilde{y}_t)$, (Δe_t^b), (π_t^m), (π_t^p), (π_t^c) and (Δi_t), respectively. Other estimated models can be summarized as follows:

Model 1: $(\tilde{y}_t, \Delta e_t^{usd}, \pi_t^m, \pi_t^c)$

Model 2: $(\tilde{y}_t, \Delta(e_t^{usd} * m_t), \pi_t^c)$

Model 3: $(\tilde{y}_t, \Delta e_t^{usd}, \pi_t^m, \pi_t^p, \pi_t^c)$

[3] For detailed information, see Kara and Öğünç (2011).

Model 4: $(\tilde{y}_t, \Delta(e_t^{usd} * m_t), \pi_t^p, \pi_t^c)$

Model 5: $(\tilde{y}_t, \Delta e_t^b, \pi_t^m, \pi_t^c)$

Model 6: $(\tilde{y}_t, \Delta e_t^b, \pi_t^m, \pi_t^p, \pi_t^c)$

Where, m_t is the import prices in USD, Δe_t^{usd} is the change in USD, and Δ the first difference operator.

Main Findings

Results of the cumulative impulse-response analysis are summarized in Table 1 for a 2-year period. The table depicts the cumulative response of the consumer price indicator (CPI excluding unprocessed food, alcohol and tobacco) to a 1-unit permanent shock in exchange rate basket, USD, import prices in USD and import prices denominated in TL, respectively. Estimates are given separately for two sample periods, one covering the whole sample and the other covering the pre-crisis period.

Table 1. Impact of a 1-unit Permanent Shock to Exchange Rate and Import Prices on Core Price Indicator: Summary of the Cumulative Impulse-Response Function Findings (Percent)

			Response of the Core Price Indicator			
Sample Period: 2002:03-2011:06			End of First Quarter	End of First Year	End of Second Year	Completion of 80 % of Pass-Through
	Model	Number of Lags				
Shock to Exchange Rate Basket	**Model 5**	2	0.08	0.14	0.16	9 months
	Model 6	1	0.08	0.16	0.16	6-7 months
	Model 7	1	0.08	0.16	0.16	6-7 months
		2	0.09	0.15	0.18	10 months
Shock to USD	**Model 1**	2	0.05	0.08	0.09	11 months
	Model 3	1	0.06	0.11	0.12	6-7 months
		2	0.06	0.10	0.12	11 months
Shock to Import Prices in USD	**Model 1**	2	0.10	0.18	0.20	9-10 months
	Model 3	1	0.11	0.20	0.21	7-8 months
		2	0.10	0.16	0.18	9 months
	Model 5	2	0.08	0.14	0.16	9-10 months
	Model 6	1	0.08	0.15	0.17	9 months
	Model 7	1	0.08	0.16	0.17	9 months
		2	0.09	0.16	0.18	9-10 months
Shock to Import Prices in TL	**Model 2**	2	0.08	0.15	0.17	9 months
	Model 4	2	0.08	0.15	0.17	9 months
Sample Period: 2002:03-2008:07						
Shock to Exchange Rate Basket	**Model 5**	1	0.09	0.20	0.23	10-11 months
	Model 6	1	0.09	0.20	0.23	10-11 months
	Model 7	1	0.10	0.21	0.23	10 months
Shock to USD	**Model 1**	1	0.08	0.20	0.23	11-12 months
	Model 3	1	0.09	0.18	0.21	13 months
Shock to Import Prices in USD	**Model 1**	1	0.12	0.27	0.32	14 months
	Model 3	1	0.12	0.26	0.32	14 months
	Model 5	1	0.06	0.14	0.17	11 months
	Model 6	1	0.06	0.14	0.16	12 months
	Model 7	1	0.07	0.15	0.18	11-12 months
Shock to Import Prices in TL	**Model 2**	1	0.08	0.18	0.22	13-14 months
	Model 4	1	0.08	0.18	0.22	13-14 months

Source: Kara and Öğünç (2011).

An analysis of the pass-through from exchange rates to core consumer prices suggest that the cumulative effect for the exchange rate basket reaches around 15 percent by the end of the first year, while it is around 10 percent for the USD in the same period. Pass-through estimates for import prices in the USD have a wide range between 14 and 20 percent for this period (16 percent on average), and the reflection of a change in import prices in Turkish lira on prices amounts to around 15 percent at the end of the first year. Findings indicate that import price pass-through is as important as the exchange rate pass-through on consumer price dynamics in Turkey.

In short, estimates point that the pass-through of the exchange rate and import prices for a 1-year period is around 15 percent. In other words, a permanent 10-percent increase in the exchange rate causes the core price indicator to go up by 1.5 percent on a cumulative basis within a year.

Overall, it is seen that most of the pass-through effect is completed within a 1-year period. Moreover, as illustrated in Table 1, pass-through is higher in the sample period that excludes the post-crisis period. For example, in the 1-year period before the crisis, approximately 20 percent of the change in the exchange rate basket was reflected on core consumer prices, while this ratio fell to 15 percent for the whole sample. This finding brings out the question of whether the pass-through from the exchange rate to domestic prices has varied over time.

Is the Exchange Rate Pass-Through Declining in Turkey?

Two separate analyses were conducted in order to assess whether pass-through varies over time. Recursive cumulative impulse-response function estimates with the VAR method were used in the first one, while the results obtained by the time-varying parameter (TVP) model were used in the second one.

The evolution of the cumulative reaction of the core price indicator to a 1-percent increase in the exchange rate basket is given in Chart 1a.[4] While findings suggest that short-term pass-through (3 months) remained virtually unchanged over time, they point that medium-term pass-through (for 1 or 2-year periods) gradually decreases. For example, while pass-through effect for one year is estimated as 20 percent for observations up to 2006, it goes down to 15 percent when the current data are included. The change in pass-through estimates is particularly notable during the severe times of the global financial crisis.

[4] In this exercise, the VAR model was estimated recursively by increasing the sample size one by one. All the cumulative response results obtained for each period were presented for the ends of different periods (first quarter, first and second year-end). Results were obtained by estimating Model 5, which includes the exchange rate basket, with two lags.

The Evolution of Pass-Through

Chart 1a. The Recursive Pass-Through of Exchange Rate Basket to Consumer Prices Using VAR

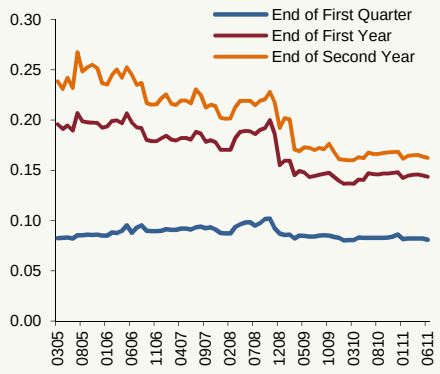
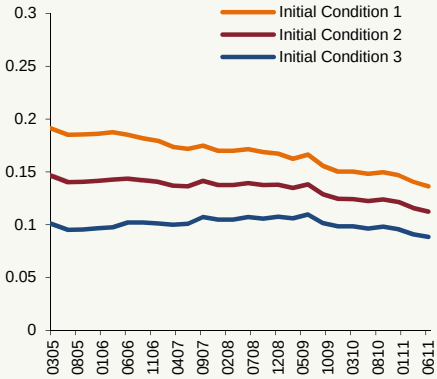


Chart 1b. The Evolution of the Coefficient of the USD in the TVP Model*



* This model is estimated using the Kalman filter. The results of the model depend on the values that the parameters can take at the beginning of the period. Therefore, three alternative initial conditions were assumed in this study. While the second initial condition uses the Ordinary Least Squares (OLS) estimate of the respective model as the initial value, the first and the third conditions take "OLS estimate±1 standard deviation of the parameter" as the initial values.
Source: Kara and Öğünç (2011).

TVP model also points to a similar finding (Chart 1b). In this model, where core inflation indicator is the dependent variable, the evolution of the sum of the coefficients for measuring the pass-through from the changes in the USD is given. In order to provide robustness with respect to initial conditions, the respective model is estimated under three different initial conditions. Although the results depend on the initial conditions, the underlying trend in each case points to a recently declining pass-through effect.

In sum, empirical findings suggest that the pass-through from exchange rate to consumer prices has gradually decreased in the recent years. This also brings out a major issue to be considered in interpreting the findings of the study such that the above-mentioned pass-through effect of 15 percent is estimated using the 2002-2011 period. Thus, it should be underlined that the pass-through may have fallen even below 15 percent when only the post-crisis period is concerned.

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Kara, H., F. Öğünç, (2011). "The Effect of Exchange Rates and Import Prices on Inflation", CBRT Economic Notes No. 11/14.

McCarthy, J., (2000), "Pass-Through of Exchange Rates and Import Prices to Domestic Inflation in Some Industrialized Economies", Federal Reserve Bank of New York Staff Report No. 111.

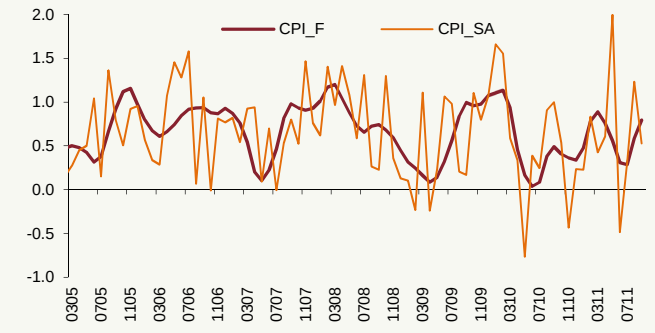
Box 3.3 Filtering Short-Term Fluctuations in Price Series

Price indices, like many other economic time series, are subject to seasonal fluctuations. Seasonal adjustment is a strong tool that enables to remove such fluctuations which prevents to detect the real changes in the series. However, as seasonal adjustment can only capture the movements repeated in certain seasonal frequencies, it may also cause series to be highly volatile, thus complicating the interpretation of the underlying trend. In other words, in the event that the series contains repeated movements in non-seasonal frequencies, seasonal adjustment may fail to filter out short-term fluctuations completely.

Against this background, by combining the wavelet filter with the band-pass filter, Akkoyun et al. (2011) propose a 2-step method in order to capture short-term fluctuations that are completed in a 1-year period. The method proposed by the above study yields smoother series than the seasonally adjusted ones and the obtained filtered series also successfully capture the dynamics in the subcategories of the consumer prices. In this Box, the method by Akkoyun et al. (2011) and the recent inflation trends will be analyzed.

Firstly, this method aims at removing the short-term fluctuations in the price series. Short-term fluctuations are defined as price cycles that are completed within a 1-year period. In this context, firstly, price cycles which are completed within 2-8 months are removed by the wavelet filter, and in the second step, the cycles which are completed within 8-12 months are removed by the band-pass filter.[5] Filtered CPI series are shown in Chart 1.

Chart 1. Seasonally Adjusted vs. Filtered CPI*
(Monthly Percent Change)

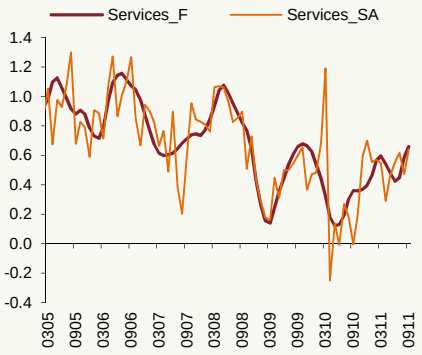


* CPI_SA: Seasonally adjusted CPI, CPI_F: Filtered CPI.

[5] Details on the selection and application of the filters used are available in Akkoyun et al. (2011).

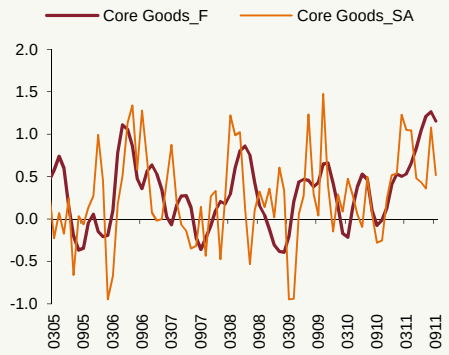
As depicted in Chart 1, monthly percent changes in filtered series are smoother than the seasonally adjusted ones. The advantage of filtering in order to monitor the short-term fluctuations in price series is more pronounced for the subcategories that are more often subject to non-periodical shocks. For example, while filtered series and seasonally adjusted series for prices of services display a relatively similar pattern, the same conclusion does not apply to the prices of core goods (Charts 2 and 3).

Chart 2. Services Prices
(Monthly Percent Change)*



* Services_SA: Seasonally adjusted services prices, Services_F: Filtered services prices.

Chart 3. Core Goods Prices*
(Monthly Percent Change)

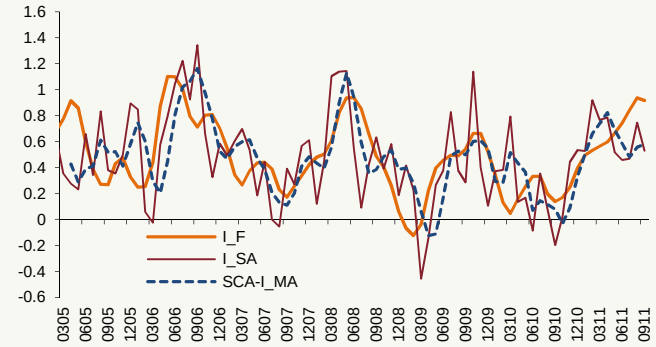


* Core Goods_SA: Seasonally adjusted core goods prices, Core Goods_F: Filtered core goods prices.

As illustrated, short-term movements in prices of services mostly occur at seasonal frequencies, whereas, short-term fluctuations other than seasonal ones are also present in the prices of core goods. Therefore, seasonally adjusted data should be interpreted more carefully in these types of series.

Interpreting the recent developments using the above method reveals that the monthly percent change in the prices of services increased in the third quarter, whereas, the monthly percent change in core prices has considerably accelerated since the start of the year. Accordingly, the I index, which is formed by the filtered prices of services and core goods, maintained its uptrend in the third quarter as well (Chart 4). Moreover, this trend resembles the trend obtained by taking the 3-month moving averages of the seasonally adjusted I index.

Chart 4. Seasonally Adjusted I vs. Filtered I*
(Monthly Percent Change)



* Filtered I series is constructed by filtered services and core goods series.*I_SA: Seasonally adjusted I, I_F: Filtered I, _F: I series with 3-month moving average.

Analysis of the evolution of short-term inflation is quite important not only for the central bankers but also for other policymakers. However, the fact that the inflation is subject to various shocks and it has a heterogeneous nature complicates the above analysis, thereby requiring the use of alternative methods other than the traditional ones. In this respect, the main subcategories of consumer prices filtered by this method summarized in this Box, and finally the derived I index are found to be smoother than the seasonally adjusted indicators. The method can provide significant information especially about the core goods prices, which display non-seasonal short-term fluctuations. Lastly, the performance of the I series filtered by this method is comparable to the alternative core indicators calculated and monitored by the CBRT.

REFERENCES

Akkoyun, H. Ç., O. Atuk, N. A. Koçak and M. U. Özmen, (2011), "Filtering Short Term Fluctuations in Inflation Analysis", CBRT Working Paper No. 11/20.

4. Supply and Demand Developments

The second-quarter national accounts data turned out to be more favorable compared to the outlook presented in the July Inflation Report. Economic activity lost momentum quarter-on-quarter as expected, whereas the slowdown in domestic demand was less than expected. Amid the plunge in imports, net exports contributed positively to quarterly growth, as envisaged. Thus, the divergence between the recovery rates of domestic and external demand during the exit from the crisis was decelerated. Third-quarter data indicate that the slowdown in economic activity still persists. Seasonally adjusted data for industrial production edged up in the July-August period compared to the second quarter, while domestic demand indicators pointed to an ongoing slowdown.

Despite the better-than-envisaged realization in the second quarter, a weaker medium-term outlook for the economic activity is assumed amid worsening external demand conditions. Notwithstanding the deterioration in the global growth outlook, economic activity is expected to settle into a mild growth path in the upcoming period, in view of the balancing effects of the adopted policy measures on domestic demand. However, the unfavorable global growth outlook keeps the downside risks brisk against domestic economic activity (Box 4.1).

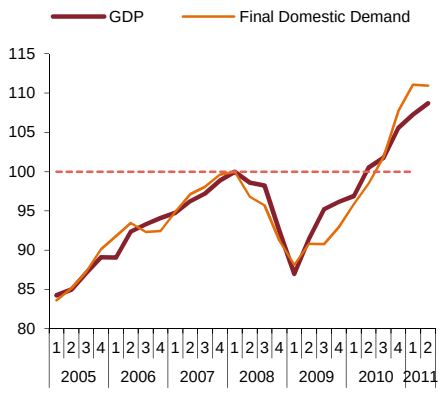
Given the current outlook of receding unit labor costs owing to productivity gains in addition to low capacity utilization rates amid the weak external demand, aggregate demand conditions are not expected to pose upward pressure on inflation. Despite the weak external demand, the correction in the current account deficit that started with the decline in imports, is expected to continue in the upcoming period.

4.1. Gross Domestic Product Developments and Domestic Demand

The national accounts data released by TurkStat suggest that GDP posted a year-on-year increase by 8.8 percent in the second quarter of 2011. The largest contributor to annual growth was private demand, for both consumption and investment. On the other hand, the negative contribution to growth by net external demand remained unchanged in this period.

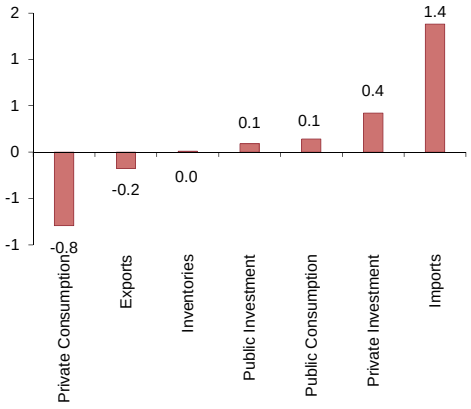
Seasonally adjusted data suggest that the GDP slowed down slightly quarter-on-quarter, increasing by only 1.3 percent in the second quarter (Chart 4.1.1). Meanwhile, final domestic demand remained flat in this period. The analysis of the contributions to quarterly growth indicates an essentially unchanged inventories with net external demand standing out as the main driver of growth (Chart 4.1.2). Despite the diminishing contribution of exports to growth amid the weak global economic growth in the second quarter, contraction in imports was more pronounced compared to exports due to the slowdown in domestic demand as well as the depreciation of the TL.

Chart 4.1.1.
GDP and the Final Domestic Demand
(Seasonally Adjusted, 2008 Q1=100)



Source: TurkStat, CBRT.

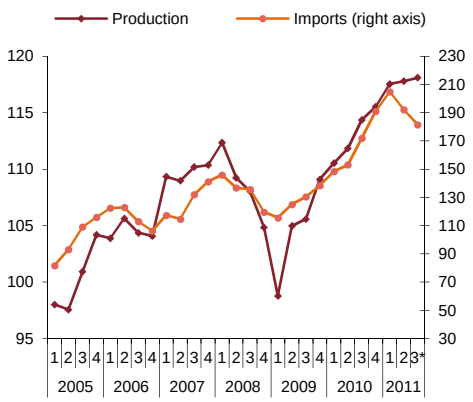
Chart 4.1.2.
Contribution to GDP Growth by Demand Components
(Percent)



Source: TurkStat, CBRT.

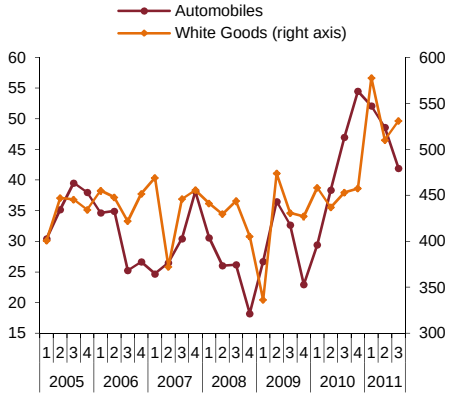
Third-quarter data indicate that the slowdown in final domestic demand that started in the second quarter still continues. In the July-August period, production of consumption goods, which is one of the private consumption demand indicators, remained almost flat, whereas, imports of consumption goods declined (Chart 4.1.3). Fueled also by the depreciation of the TL, automobile sales maintained its downtrend in the third quarter, while the sales of white goods recorded an increase following a sharp decline in the second quarter (Chart 4.1.4). In addition, developments in the consumer confidence index also points a slowdown in consumption demand (Chart 4.1.5).

Chart 4.1.3.
Production and Import Quantity Indices of Consumption Goods (Seasonally Adjusted, 2005=100)



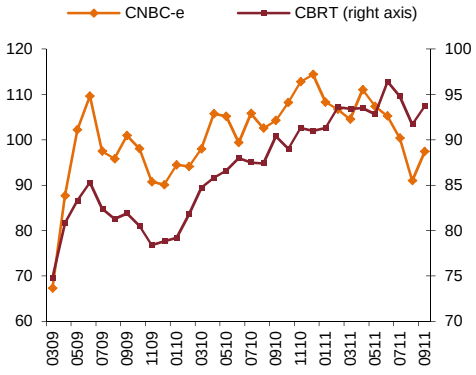
* As of August.
Source: TurkStat, CBRT.

Chart 4.1.4.
Domestic Sales of Automobiles and White Goods (Thousand, Seasonally Adjusted)



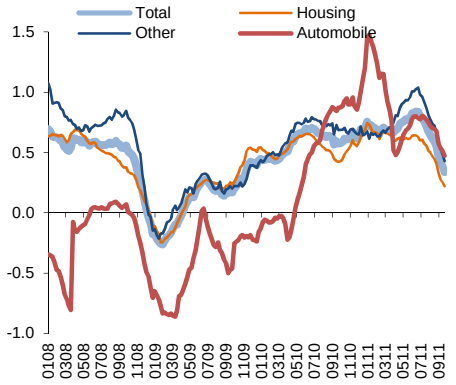
Source: AMA, WGIA, CBRT.

Chart 4.1.5.
Consumer Confidence



Source: TurkStat, CNBC-e.

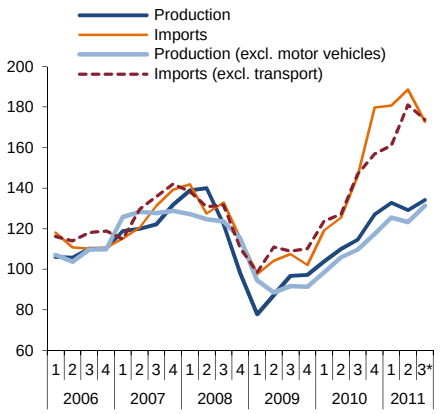
Chart 4.1.6.
Weekly Consumer Loans
(Weekly Percent Change, 13-Week Average)



Source: CBRT.

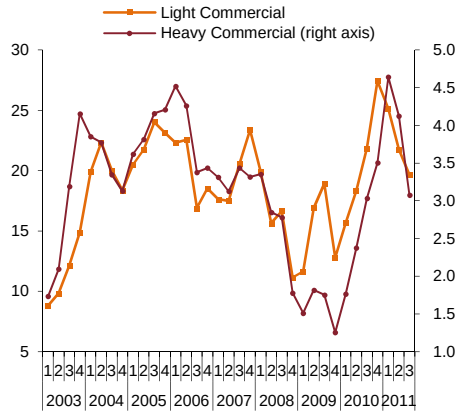
Leading indicators point to a mild course also for investment demand. Indeed, the data for the July-August period indicate a limited increase in the production and a decline in the imports of capital goods (Chart 4.1.7). On the other hand, the downtrend in the domestic sales of light and heavy commercial vehicles continued into the third quarter (Chart 4.1.8). Similarly, consumer loans recorded a significant slowdown in the third quarter (Chart 4.1.6).

Chart 4.1.7.
Production and Import Quantity Indices of Capital Goods (Seasonally Adjusted, 2005=100)



* As of August.
Source: TurkStat, CBRT.

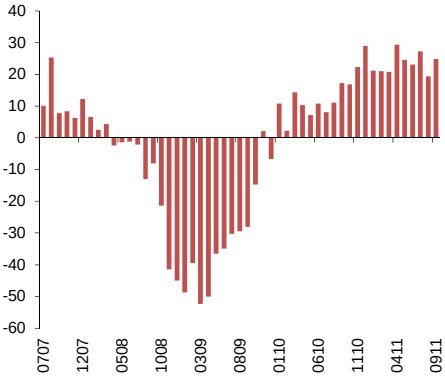
Chart 4.1.8.
Domestic Sales of Commercial Vehicles (Thousand, Seasonally Adjusted)



Source: AMA, CBRT.

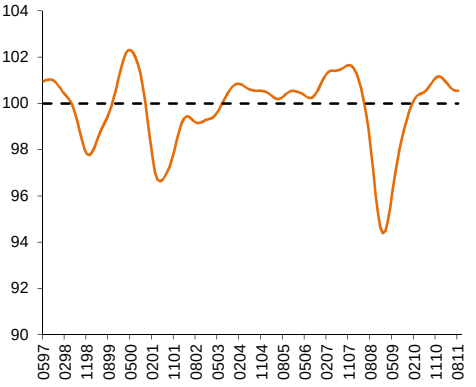
Domestic demand indicators signal a temporary slowdown in the third quarter, followed by a mild course of economic growth thereafter. 12-month ahead Investment expectations obtained from the BTS remain stable at high levels, pointing to the absence of a significant deterioration in investment sentiment (Chart 4.1.9). Most of all, the index formed by the aggregation of selected leading indicators of economic activity also signals that the slowdown in economic activity will remain limited (Chart 4.1.10).

Chart 4.1.9.
12-Month Ahead BTS Expectations for Investment (Up-Down, Seasonally Adjusted)



Source: CBRT.

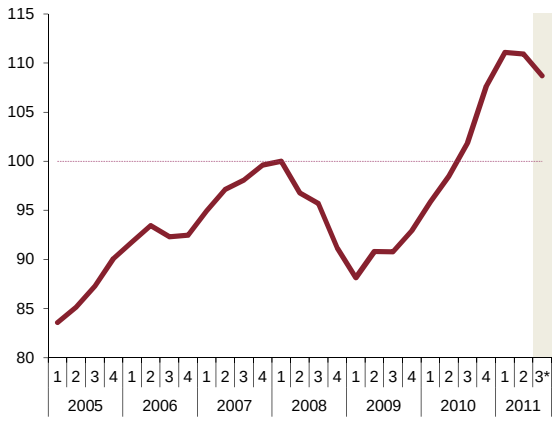
Chart 4.1.10.
Leading Indicators Index (Seasonally Adjusted)



Source: TurkStat, CBRT.

In sum, given the recently announced data, domestic demand is estimated to have contracted in the third quarter on a quarterly basis (Chart 1.4.11). However, domestic demand is expected to display a mild pace of growth in the medium term. Meanwhile, in view of the CBRT's monetary policy implementations as well as the deterioration in global risk perceptions which feeds into depreciation of the TL, the decomposition of aggregate demand may change in the upcoming period in favor of domestic products, thus contributing to the normalization of the current account balance.

Chart 4.1.11.
Final Domestic Demand
(Seasonally Adjusted, 2008Q1=100)

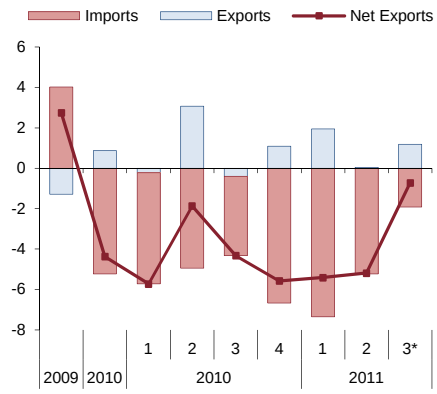


* Estimate.
Source: TurkStat, CBRT.

4.2. External Demand

The second-quarter external demand developments turned out be slightly worse than projected in the July Inflation Report. Exports of goods and services increased by 0.2 percent year-on-year, putting a cap on the contribution of exports to annual growth. Meanwhile, imports of goods and services recorded a year-on-year upsurge of 18.8 percent, further contributing negatively to growth (Chart 4.2.1). As per the analysis of the seasonally adjusted data, a different outlook appears for the near term. While exports followed an almost flat course in the second quarter, imports declined on a quarterly basis for the first time since the first quarter of 2009 (Chart 4.2.2). Accordingly, the demand components were further balanced with the net external demand contributing positively to growth.

Chart 4.2.1.
Contribution of Net External Demand to Annual GDP Growth
(Percent)



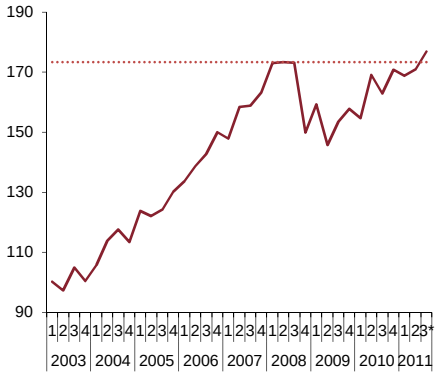
* Estimate.
Source: TurkStat, CBRT.

Chart 4.2.2.
Exports and Imports of Goods and Services
(Seasonally Adjusted, 1998 Prices, Billion TL)

* Estimate.
Source: TurkStat, CBRT.

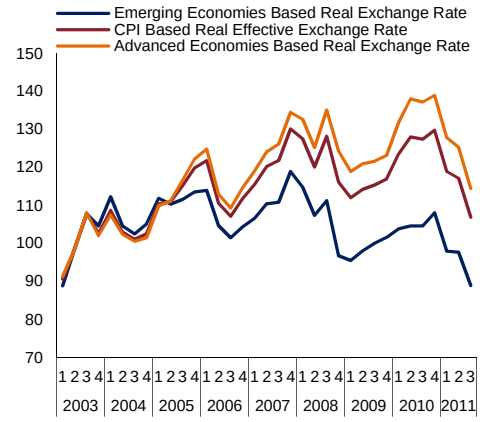
As a result of the turmoil in the euro area, which was less severe and more localized than the current one, both the exports quantity index and the exports of goods and services had contracted in 2010. On contrary, recent data releases point that, despite the global turmoil, export quantity index reached its pre-crisis level after a lapse of twelve quarters, by posting an increase in the third quarter (Chart 4.2.3). This indicates that the ongoing depreciation of the real exchange rate since the last quarter of 2010 bolstered the relative competitiveness of firms in external markets (Chart 4.2.4).

Chart 4.2.3.
Export Quantity Index
(Seasonally Adjusted, 2003=100)



* Estimate for September.
Source: TurkStat, CBRT.

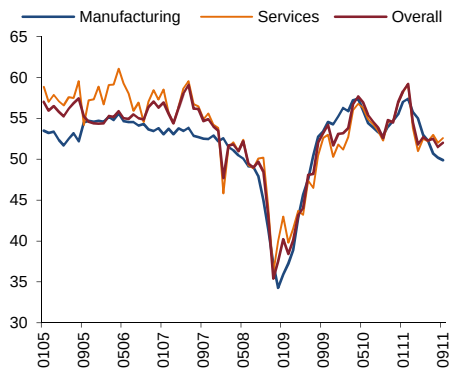
Chart 4.2.4.
CPI-Based Real Exchange Rates
(2003=100)



Source: CBRT.

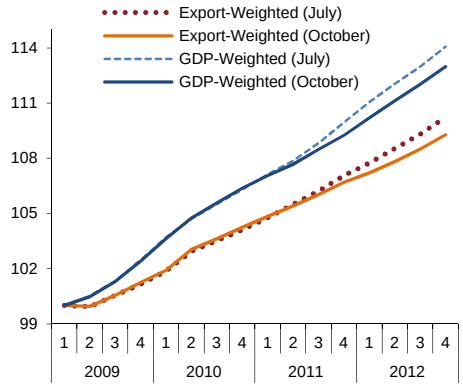
Recent developments in international markets heighten uncertainties regarding the global economic activity. The growing probability of default in Greece, classification of Italy, one of the leading economies of the EU, among the troubled countries, the U.S. economic growth coming to a standstill, and the weak course of the Japanese economy give way to a slowdown in economic activity on a global scale. Indeed, an analysis of the global PMI indices indicates that the manufacturing industry index hit 27-month low in September, remaining below the neutral level of 50. As for the services sector, PMI for the services sector followed a weak course throughout the third quarter (Chart 4.2.5). Moreover, the deterioration in both investor and the consumer confidence due to mounting perception that no solution to global problems would be introduced in the short term also led to worsening of the medium-term growth outlook. Downward revision of both the GDP-weighted as well as the export-weighted global production index confirms the negative outlook (Chart 4.2.6). Accordingly, global problems are expected to further restrict the external demand even with the competitiveness provided by the exchange rate movements.

Chart 4.2.5.
Global PMI Indices
(Seasonally Adjusted)



Source: Bloomberg.

Chart 4.2.6.
Export and GDP-Weighted Global Production Indices
(Seasonally Adjusted, 2009Q1=100)

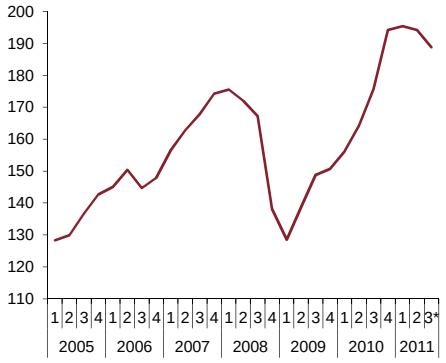


Source: Bloomberg, CBRT.

The import quantity index, which has followed a weak course since the start of 2011, remained below the previous quarter's average in the July-August period (Chart 4.2.7). As for the subcategories of import quantity index, imports of intermediate goods edged up, while imports of consumption and investment goods declined (Chart 4.2.8). Parallel to the depreciation of the Turkish Lira, imports of passenger cars, mainly the transport vehicles, and durable consumption goods plummeted. Amid the depreciation of the real exchange

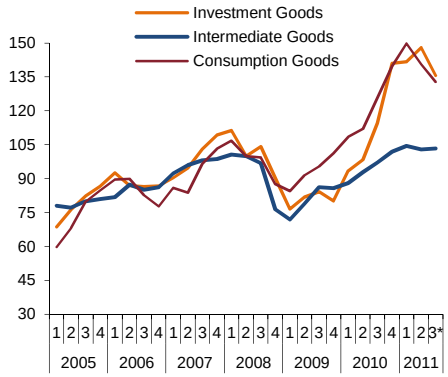
rate coupled with the slowing loans and loosening domestic demand, imports of goods and services are estimated to have posted a quarter-on-quarter decline in the third quarter (Chart 4.2.2).

Chart 4.2.7.
Import Quantity Index
(Seasonally Adjusted, 2003=100)



* As of August.
Source: TurkStat, CBRT.

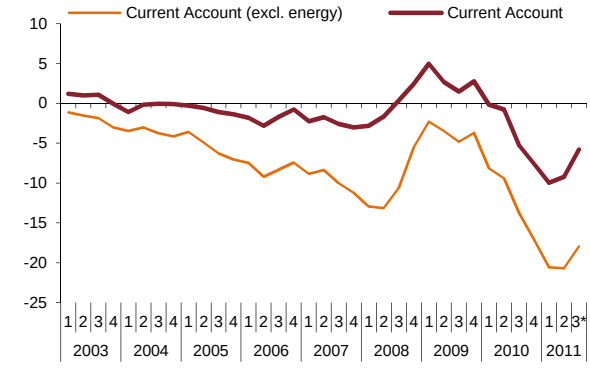
Chart 4.2.8.
Quantity Indices for Imports by Subcategories
(Seasonally Adjusted, 2008Q1=100)



* As of August.
Source: TurkStat, CBRT.

In sum, net external demand is expected to contribute positively to growth in the third quarter. Balancing of domestic and external demand supports the improvement of the current account balance. The gap between imports and exports is expected to narrow further in the upcoming period, thereby improving the current account balance. However, adopting structural measures to enhance productivity and savings is critical in order to permanently bring the current account balance to reasonable levels.

Chart 4.2.9.
Current Account Balance
(Seasonally Adjusted, Billion USD)

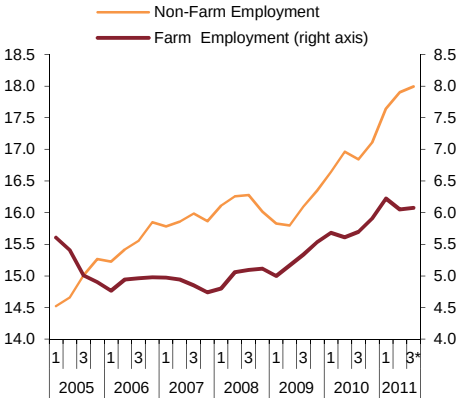


* Estimate for September.
Source: TurkStat,CBRT.

4.3. Labor Market

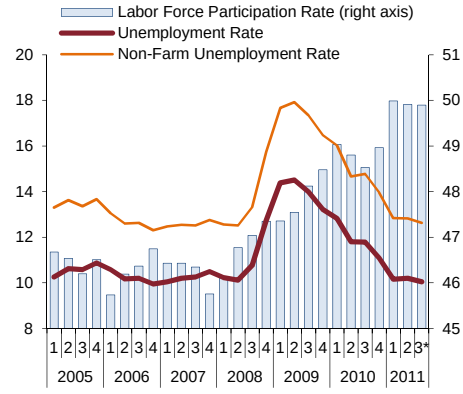
Second-quarter employment developments were broadly consistent with the outlook presented in the July Inflation Report. Seasonally adjusted data on industrial employment declined as expected, while non-farm employment growth posted a quarter-on-quarter slowdown. Moreover, farm employment, having been on the rise since the second half of 2010, went down in this period, albeit remaining above the pre-crisis levels (Chart 4.3.1). Accordingly, the unemployment rate, which reverted to its pre-crisis level in the first quarter of 2011, remained flat in the second quarter, and edged down in July (Chart 4.3.2).

Chart 4.3.1.
Farm and Non-Farm Employment
(Seasonally Adjusted, Million)



* As of July.
Source: TurkStat, CBRT.

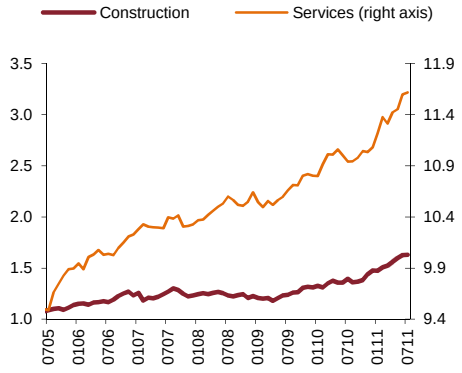
Chart 4.3.2.
Unemployment Rates
(Seasonally Adjusted, Percent)



* As of July.
Source: TurkStat, CBRT.

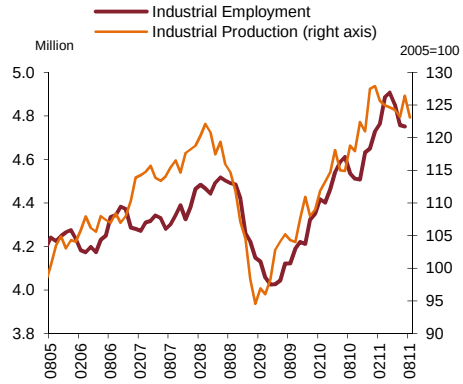
Services and construction sectors contributed positively to seasonally adjusted non-farm employment, while industrial employment receded in the second quarter of 2011(Charts 4.3.3 and 4.3.4). Even though this outlook remained unchanged in June, employment growth in services and construction sectors slowed down in July, while the downtrend of industrial employment waned. Given the scale of the sector in terms of the number of employees, the acceleration of employment in the construction sector since the onset of 2011 is notable.

Chart 4.3.3.
Services and Construction Sector Employment
(Seasonally Adjusted, Million)



Source: TurkStat, CBRT.

Chart 4.3.4.
Industrial Employment and Production
(Seasonally Adjusted)



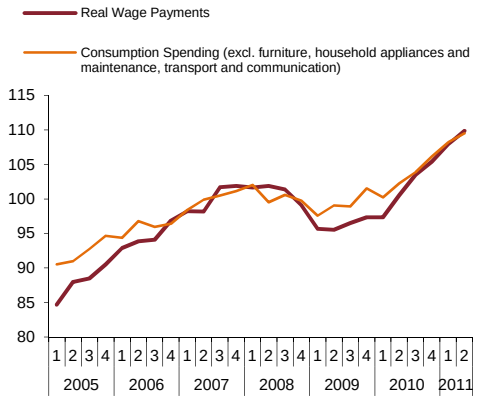
Source: TurkStat, CBRT.

Recent developments in the industrial sector indicate that having followed a decline for five consecutive months, seasonally adjusted industrial production posted a month-on-month increase in July before falling back in August. Given the persistent downtrend of the PMI employment index in the August-September period, a leading indicator of the developments in industrial employment, as well as the deterioration in the economic outlook for the U.S. and the euro area, recovery of the employment conditions in the industrial sector is likely to take time (Chart 4.3.5).

Chart 4.3.5.
Manufacturing Industry Employment (Quarterly Percent Change) and PMI Employment Index
(Seasonally Adjusted)

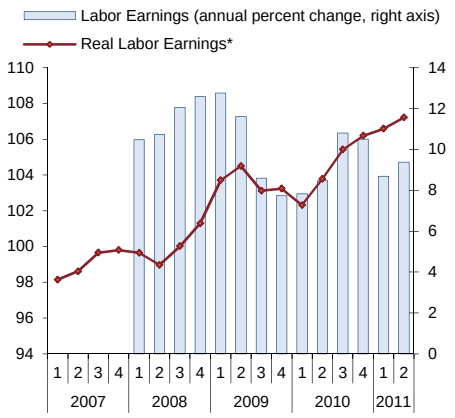
Source: TurkStat, Markit, CBRT.

Chart 4.3.6.
Household Spending and Real Wage Payments*
(Seasonally Adjusted, 2007=100)



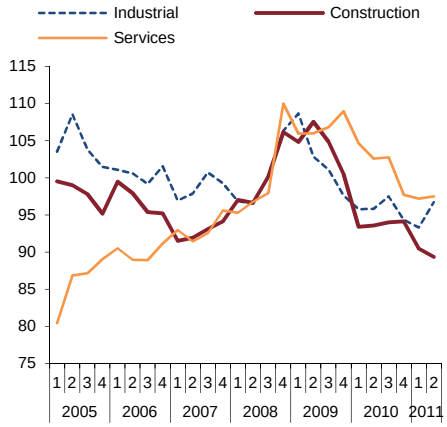
* Calculated as the weighted average of total wages paid in industrial, construction, trade, accommodation-catering services, transport-warehousing sectors. Deflated by CPI.
Source: TurkStat, CBRT.

Chart 4.3.7.
Hourly Labor Cost in Non-Farm Sectors
(Seasonally Adjusted, 2008=100)



* Deflated by CPI.
Source: TurkStat, CBRT.

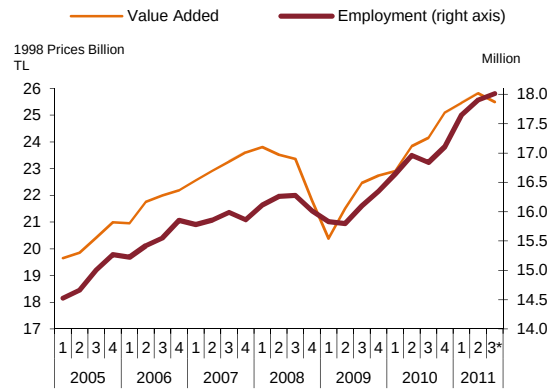
Chart 4.3.8.
Unit Wages (Wage per Hour Worked/Productivity)*
(Seasonally Adjusted, Real, 2008=100)



* Real unit wages in the services sector are calculated as the ratio of total wage payments to turnover. As for the industrial and construction sectors, total wage payments are divided by production and CPI.
Source:, TurkStat, CBRT.

An evaluation of labor market developments in terms of their contribution to domestic demand reveals that wage payments have continued to bolster domestic demand in the second quarter of 2011 (Chart 4.3.6). On the other hand, considering wages as a cost item, non-farm hourly earnings index, published under the Labor Cost Indices, edged up quarter-on-quarter in real terms in the second quarter of 2011 (Chart 4.3.7). However, real unit wages which also take productivity developments into account, increased only in the industrial sector in the said period (Chart 4.3.8). This increase reflects the decline in production, and therefore, does not indicate a labor-driven cost pressure on prices.

Chart 4.3.9.
Non-Farm Value Added and Employment
(Seasonally Adjusted)



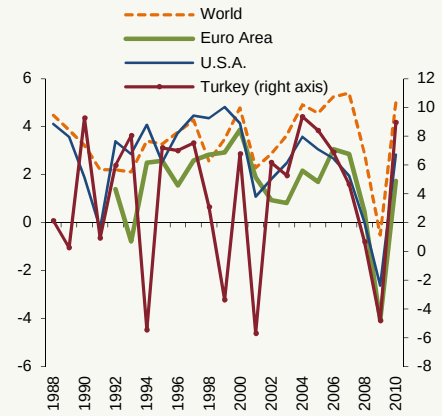
* Estimate.
Source: TurkStat, CBRT.

To sum up, in the April-July 2011 period, the average non-farm employment growth rate slowed down amid the worsening industrial employment. Third-quarter leading indicators point to an ongoing stagnant outlook in industrial employment. However, global problems are expected to put a cap on employment opportunities in the forthcoming period. Accordingly, non-farm employment growth is expected to lose pace quarter-on-quarter in the third quarter of the year (Chart 4.3.9).

Box 4.1 The Relation Between Business Cycles in Turkey and the Global Economy

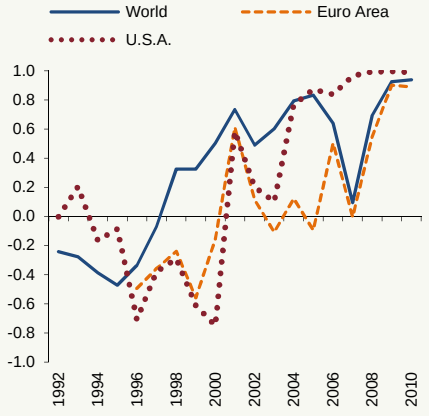
The analysis of the relations between global growth and the Turkish economic growth indicates that, prior to 2001, in periods of contractions in the domestic economy, global growth continued, pointing that country-specific factors were more influential on the crises during this period (Chart 1). In the post-2001 period on the other hand, domestic economic growth has been more closely linked to global developments. Furthermore, this link is stronger with the U.S. economy, with which our trading activities are more limited compared to euro area (Chart 2). This observation leads us to consider that our economy is also prone to non-commercial channels like the interest rates that are sensitive to the developments in the U.S. economy, liquidity conditions, capital flows and confidence sentiments. Hence, this Box analyzes the relation between the domestic national income and its components to business cycles in the U.S. and the euro area.

Chart 1. Annual GDP Growth Rates
(Percent)



Source: WEO.

Chart 2. Correlation Between the Domestic GDP Growth and Other Growth Rates*



* 5-year moving average.
Source: WEO.

Obtaining business cycles by decomposing a time series is common in the literature. Accordingly, in order to analyze the relation between economies, correlations on national income cycles can be used. The sign of the correlation indicates the direction, while its absolute value displays the strength of the relation.

However, interactions between economic aggregates can emerge at various time spans. For example, while the impact of some shocks appears in the short term, other shocks may be influential in the long term. Hence, obtaining cycles for different time spans (2-4 quarters, 4-8 quarters, etc.) will provide a more detailed analysis of the relationships. As a matter of fact, by using the band-pass filters, Baxter and King (1999) and Christiano and Fitzgerald (2003) obtained cycles for different time spans, enabling more detailed analyses. In view of the transformation of the Turkish economy in the post-2001 period, Akkoyun et al (2011) analyzed the relationship of the national income cycles in the Turkish economy to the euro area and the U.S., by using the wavelet method, which is superior to band-pass filters in terms of its ability to detect the structural changes and temporary shocks.[1]

Each series were decomposed into trends and cycles at various frequency bands by using the wavelet method (Table 1). Scale 1 (D1) shows cycles with the highest frequency (short-term). The higher the scale, the longer the period cycles. Therefore, scale 2 (D2) and scale 3 (D3) show the cycles with medium-term frequency, while scale 4 (D4) denotes cycles with longer term frequency.

Table 1. Frequency Ranges of Trends and Cycles

Scales	Frequency Range
Scale 1 (D1)	2-4 quarters
Scale 2 (D2)	1-2 years
Scale 3 (D3)	2-4 years
Scale 4 (D4)	4-8 years
Trend (A4)	8 years and above

The relationship between the national income cycles of the euro area and the U.S. was analyzed by using the GDP series in addition to its components on the expenditure side, in order to identify the source of the relation (Table 2). In view of the structural transformation that the Turkish economy experienced after 2001, the sample was divided into two sub-samples as 1995Q1-2001Q3 and 2001Q4-2010Q4. In order to isolate the effects of the crisis that led to global contraction as of 2008, the analysis was repeated for the 2001Q4-2007Q4 period. Results indicate that in the post-2001 period, the relation of the derived business cycles with the external developments increased remarkably for each GDP component, especially at frequencies between 2-8 years.

[1] For details on the selection and application of the filters, see Akkoyun et al. (2011) and Akkoyun, Doğan and Günay (2011).

Although the correlations between the domestic economy and the euro area as well as the U.S. are lower for exports at the frequency range of 0-2 years, the relationship is very strong at 2-8 years frequency.

Table 2. Correlations of Domestic Cycles with Euro Area and the U.S. National Income Cycles

	1995Q1-2001Q3		2001Q4-2010Q4		2001Q4-2007Q4	
National income	Euro Area	U.S.	Euro Area	U.S.	Euro Area	U.S.
D1 (0-1 year)	-0.20	0.28	0.47	-0.02	0.12	0.22
D2 (1-2 years)	-0.32	0.42	0.96	0.81	0.84	0.63
D3 (2-4 years)	0.77	0.24	0.84	0.89	0.74	0.87
D4 (4-8 years)	0.60	0.50	0.85	0.99	0.87	1.00
Exports	Euro Area	U.S.	Euro Area	U.S.	Euro Area	U.S.
D1 (0-1 year)	-0.14	-0.07	0.04	0.15	-0.02	0.42
D2 (1-2 years)	0.33	-0.20	0.57	0.52	0.43	0.21
D3 (2-4 years)	0.74	0.13	0.95	0.94	0.94	0.92
D4 (4-8 years)	0.25	0.42	0.94	0.92	0.90	0.97
Private Consumption	Euro Area	U.S.	Euro Area	U.S.	Euro Area	U.S.
D1 (0-1 year)	-0.09	0.17	0.34	-0.05	0.13	0.06
D2 (1-2 years)	-0.71	0.33	0.65	0.61	0.61	0.42
D3 (2-4 years)	0.71	0.52	0.72	0.82	0.62	0.83
D4 (4-8 years)	0.63	0.58	0.66	0.94	0.66	0.94
Private Machinery and Equipment	Euro Area	U.S.	Euro Area	U.S.	Euro Area	U.S.
D1 (0-1 year)	0.30	-0.41	0.12	0.11	0.12	0.21
D2 (1-2 years)	0.31	0.24	0.61	0.74	0.71	0.77
D3 (2-4 years)	0.76	0.29	0.77	0.84	0.55	0.72
D4 (4-8 years)	0.78	0.68	0.63	0.92	0.65	0.94
Imports	Euro Area	U.S.	Euro Area	U.S.	Euro Area	U.S.
D1 (0-1 year)	-0.24	-0.10	0.10	0.17	0.37	0.16
D2 (1-2 years)	-0.06	-0.07	0.81	0.83	0.62	0.80
D3 (2-4 years)	0.52	0.24	0.75	0.84	0.64	0.82
D4 (4-8 years)	0.64	0.52	0.69	0.95	0.68	0.95

The high correlation between the domestic private consumption and private machinery and equipment investment and the U.S. economy at 2-8 years frequency indicates that the external developments can be influential not only through the exports channel but also via the domestic demand. The fact that the capital flows, risk appetite, and the movements in exchange rates and interest rates, which are sensitive to global developments, are influential on financial conditions and confidence sentiment, leads one to consider domestic demand indicators as an alternative channel of influence for global developments. As for the high correlations between imports and the U.S. economy, the evolution of the imported components of private consumption and investment are considered to play a significant role.

In sum, given the structural transformation our economy went through in the post-2001 period, business cycles using national income and its components were analyzed with respect to their relations to cycles in the euro area and the U.S. at various frequency ranges. The conducted analyses indicate that the relationship between the Turkish economy and the global economies grew significantly in the post-2001 period. Moreover, the analysis of the relationship between the Turkish economy and global economies in the post-2001 period shows that the correlation is higher for the U.S. economy than the euro area in the medium and long term (2-8 years). This points to the significance of non-commercial channels effective on our economy.

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Baxter, M., R. King, (1999), "Measuring business cycles: Approximate band-pass filters for economic time series", The Review of Economics and Statistics, 81(4): 575–593.

Christiano, L.J., T. J. Fitzgerald, (2003), "The band pass filter", International Economic Review, 44(2): 435-465.

Box 4.2

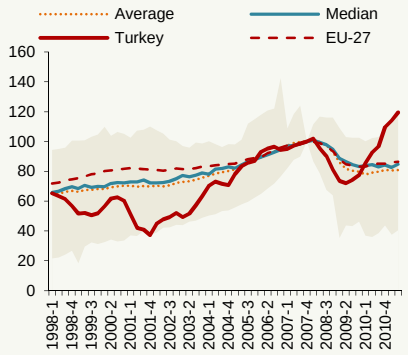
Recent Developments in Investment

Accumulation of capital stock by fixed Investments not only increases the potential production but also enhances the efficiency of the factors of production other than capital, thereby improving the global competitiveness. Thus, limited capital losses or increasing the capital stock during the crisis periods are crucial for maintaining and improving competitiveness in the medium term. For that reason, Turkey's investment performance[2] was analyzed in comparison to EU and Latin American countries, given the trading partnership and the structural similarities, respectively.

Fixed Investments in EU and Turkey

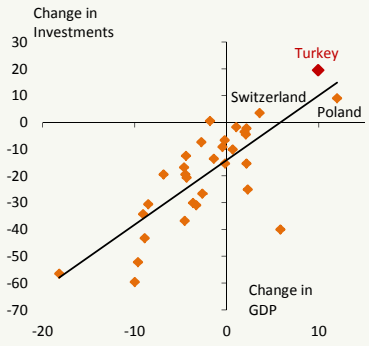
The analysis suggests that investments In Turkey recovered strongly in the global crisis period, in comparison to EU countries. As a matter of fact, while investments in the EU were below the pre-crisis levels in the second quarter of 2011, investments in Turkey hover well above the pre-crisis levels (Chart 1). Out of the 32 countries analyzed, the national incomes of only eleven countries could go beyond the 2007Q4 level, and investments in only four countries exceeded the pre-crisis levels. Turkey, which is one of these four countries besides Luxembourg, Switzerland and Poland, became the country with the highest growing investments compared to the pre-crisis period (Chart 2).

Chart 1. Fixed Investments in EU-27 and Turkey*
(Seasonally Adjusted, Real, 2007Q4=100)



* Average and median include Turkey. Shaded region is the area between the lowest and the highest level of fixed investments.
Source: Eurostat, CBRT.

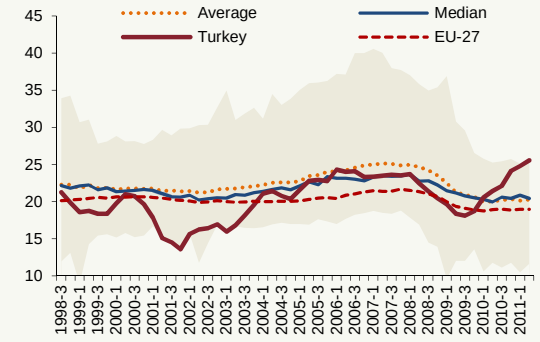
Chart 2. Changes in Fixed Investments and National income in 2011Q2 Compared to 2007Q4*



* As of 2011Q1 for the U.K., Croatia and Greece.
Source: Eurostat, CBRT.

[2] Fixed investments include the machinery and equipment investments of the public and the private sector.

Chart 3. Fixed Investments/GDP in EU-27 and Turkey*
(Fixed Prices, Percent)



* Average and median include Turkey. Shaded region is the area between the lowest and the highest level of fixed investments/GDP.
Source: Eurostat, CBRT.

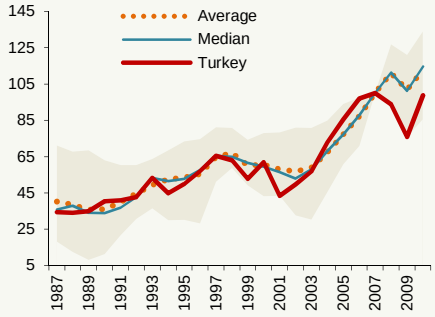
Investment depends on factors such as the changes in expected profitability ratios, coverage of irrevocable costs and access to financing, and thus displays higher volatility than national income. Indeed, the analysis of the changes in national income and investment suggests that while the changes in national income ranged between 12-18 percent across European economies, changes in investment were between -60 percent to 20 percent compared to pre-crisis levels. This confirms the relatively higher volatility of investments compared to national income during the global crisis (Chart 2). The robust course of investments in Turkey in the post-crisis period provided a higher investment to GDP ratio in the second quarter of 2011, even though GDP posted a high growth as well (Chart 3). This increase is even more striking given the fact that, in terms of investment/GDP ratio, Turkey lagged behind the EU averages between 2001 and 2007, the period after the 2001 crisis, which broke out due to Turkey-specific reasons, until the global crisis.

Investments in Latin America and Turkey

The relatively robust course of investments in Turkey compared to EU, where the global crisis is deeply felt, brings out the question of whether the same conclusion also applies to other countries with structural similarities to Turkey. Accordingly, analyzing the course of investment in the selected Latin American countries in comparison to Turkey will be informative. The adverse impact of the global crisis on investments in Turkey is similar to EU, where the propensity to invest declined, but it is different than in Latin America, where the propensity to invest remained unchanged (Charts 1 and 4).

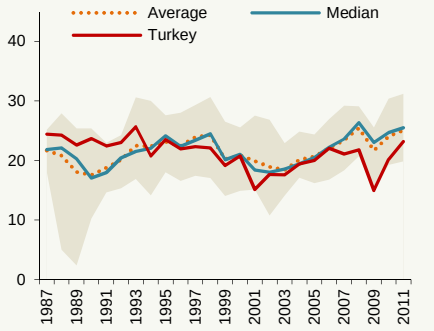
This led Turkey to lag behind Latin America in terms of the investment to GDP ratios, calculated with the current prices (Chart 5). However, calculated with the fixed prices, the comparison of the course of investment to GDP ratios reveals that the deterioration in Turkey is comparable to Latin America, which performed relatively far better than EU(Charts 3 and 6).[3] This also gives significant clues about the effects of the global crisis by regions.

Chart 4. Fixed Investments in Latin America and Turkey*
(Real, 2007=100)



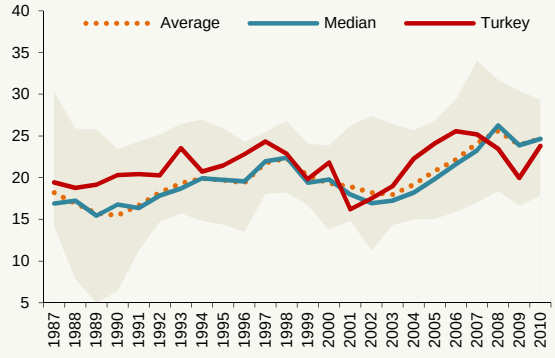
* Average and median include Turkey. Shaded region is the area between the lowest and the highest level of fixed investments.
Source: World Bank, CEIC Data Company, TurkStat.

Chart 5. Investment/GDP in Latin America and Turkey*
(Current Prices, Percent)



* Includes the sum of fixed investment and changes in inventories. Average and median include Turkey. Shaded region is the area between the lowest and the highest level of investment/GDP. 2011 figures are WEO forecasts.
Source: WEO.

Chart 6. Fixed Investments/GDP in Latin America and Turkey*
(Fixed Prices, Percent)



* Average and median include Turkey. Shaded region is the area between the lowest and the highest level of fixed investments/GDP.
Source: World Bank, CEIC Data Company, TurkStat.

[3] As stated in the Inflation Report 2011-III, since the first quarter of 2005, import unit value index for investment goods has diverged from the overall index, in favor of the latter. This evidence when coupled with the divergence of fixed and current investment in Turkey from Latin America brings out the question of whether the import dependency of investment differs between Turkey and Latin America.

In sum, the relatively low level of investment in Turkey during the 2001-2007 period, declined amid the global crisis (similar to EU but unlike Latin American countries). However, starting from the third quarter of 2009, investment in Turkey displayed a relatively exceptional rebound when compared to EU, and converged to Latin America, which was not severely hit by the crisis. This points that the Turkish economy has the potential to expand its capital stock and national income, and also shows that the debates on an "overheated Turkish economy in the post-crisis period" are controversial. Meanwhile, it is remarkable that the divergence in investment occurred in a period of tight global liquidity conditions and heightened demand uncertainty. Lastly, the robust course of investment has the potential to generate macro financial risks in the short term, but it will enhance competitiveness and productivity in the medium and long term.

5. Financial Markets and Financial Intermediation

5.1. Financial Markets

The third-quarter data indicate a slowdown in the global economic growth and an increase in downside risks. Mounting concerns over sovereign debt problems in the euro area coupled with their spillover into the banking sector caused these downside risks to become more pronounced. In addition to the problems in the euro area, unfavorable data on growth for advanced economies also feed into concerns over global economy. Accordingly, global growth forecasts posted declines (Chart 5.1.1). Additional expansionary measures were adopted in advanced economies as downside risks were manifested. The increased probability for advanced economies to go through recession exposed emerging economies to downside risks as well. As a result, expected policy rates in emerging economies also declined (Chart 5.1.2).

Chart 5.1.1.*
Revisions to Growth Rate Forecasts in Advanced and Emerging Economies*
(Percent, GDP-Weighted Average)

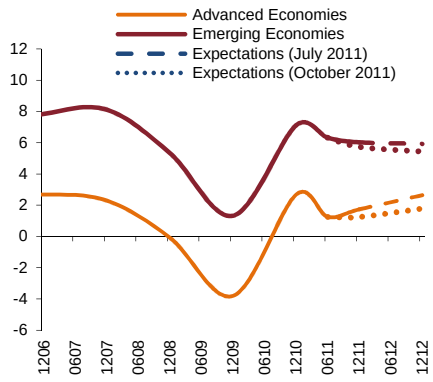
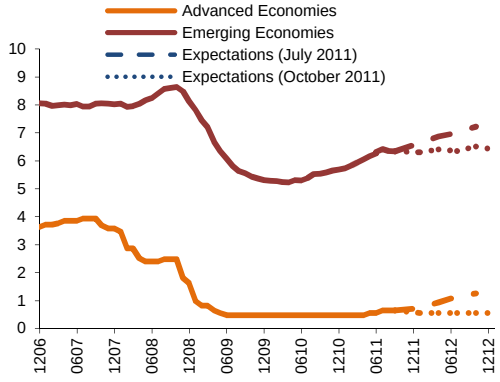


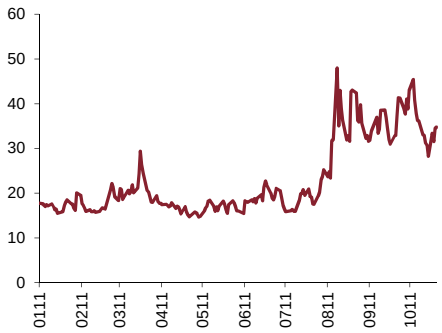
Chart 5.1.2.*
Revisions to Policy Rate Forecasts in Advanced and Emerging Economies**
(Percent, GDP-Weighted Average)



* Dashed lines show the forecasts using the expectation figures in the previous quarter while the dotted lines show the revised forecasts using the updated expectation figures.
** Advanced Economies: U.S.A., EU, and Japan. Emerging Economies: China, India, Brazil, South Korea, Mexico, Russia, Turkey, Poland, Indonesia, South Africa, Thailand, Malaysia, Israel, Czech Republic, Hungary, Colombia, Philippines.
Source: Consensus Forecasts, Bloomberg, CBRT.

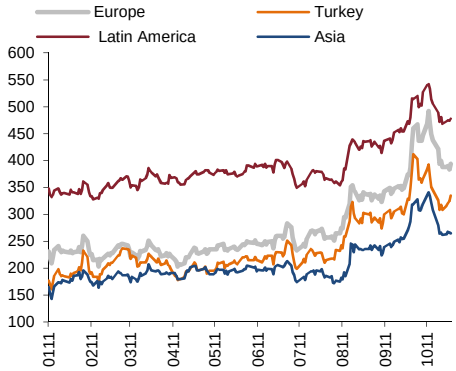
The recently mounting concerns over sovereign debt problems in the euro area caused further deterioration in global risk perceptions (Chart 5.1.3). Moreover, the evident downside risks in emerging economies led to high-rated increases in risk premiums with Turkey's risk premium indicators moving in line with other emerging economies (Chart 5.1.4).

Chart 5.1.3.
Global Risk Appetite (VIX)



Source: Bloomberg.

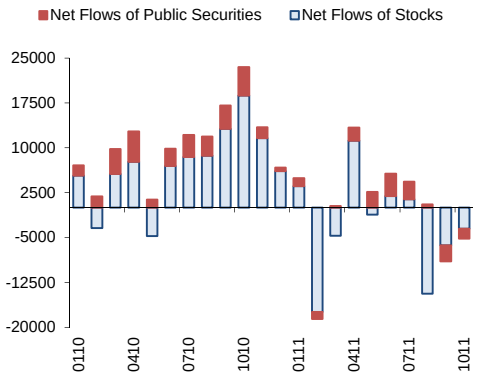
Chart 5.1.4.
EMBI



* Latin America: Peru, Colombia, Mexico, Brazil, Chile.
Asia: Indonesia, Thailand, South Korea, Malaysia, Philippines.
Europe: Romania, Poland, Hungary, Czech Republic, Bulgaria.
Source: Bloomberg, CBRT.

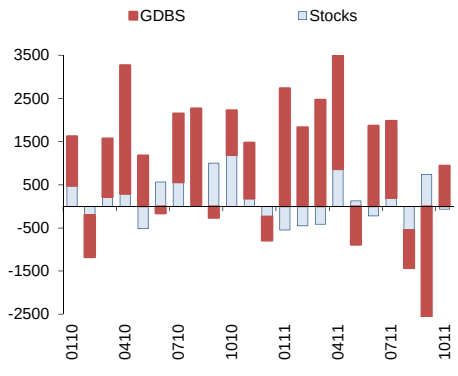
The negative course of global risk perceptions were also influential on capital inflows towards emerging economies as portfolio investments (Chart 5.1.5). More specifically, the decline in growth expectations and the deterioration in risk perceptions led to a fall in portfolio investments, particularly in the stock market. Due to the decline in the global risk appetite, Turkey experienced outflows from the GDBS market in August and in September. As for the stock market, despite the decline in the risk appetite, as Turkey's growth forecasts remained above many other emerging economies, inflows were observed, albeit limited (Chart 5.1.6).

Chart 5.1.5.
Portfolio Flows to Emerging Economies*
(Adjusted for Index and Interest Rate, Million USD)



* As of October 19, 2011.
Source: EPFR.

Chart 5.1.6.
Net Portfolio Flows of Non-Residents*
(Adjusted for Index and Interest Rate, Million USD)

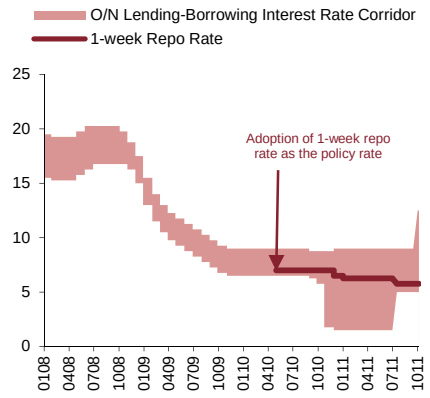


* As of October 14, 2011.
Source: CBRT.

In order to alleviate the risk of recession in the domestic economic activity that can be caused by downside risks on the global economy, the CBRT

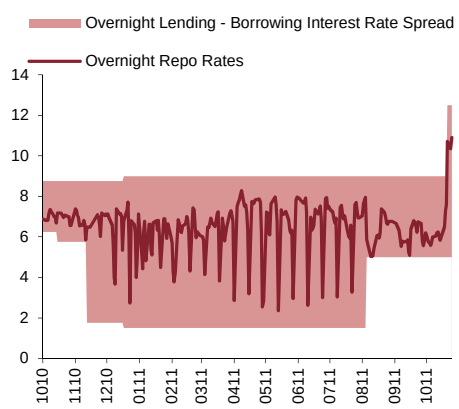
lowered the policy rate by 50 basis points in the interim MPC meeting on August 4 (Chart 5.1.7). In addition, in order to reduce the potential downside volatility in short-term interest rates, the interest rate corridor was narrowed by a 350 basis point increase in the O/N borrowing rate (Chart 5.1.8). Moreover, banks were enabled to hold up to 20 percent of their TL-denominated required reserves in USD or in euro. Additionally, required reserves on funds provided by repo transactions were based on the average of daily balances between two calculation periods, instead of being computed bi-weekly on Fridays. In order to contain the adverse effects of the depreciation in the Turkish lira on medium-term inflation expectations and outlook, the CBRT raised O/N lending rates by 350 basis points in October, and thus, widened the interest rate corridor.

Chart 5.1.7.
CBRT Policy Rate and Interest Rate Corridor



Source: CBRT.

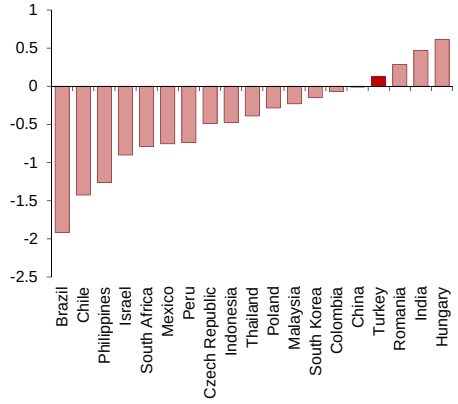
Chart 5.1.8.
Interest Rate Corridor and O/N Repo Rates
(Percent)



Source: ISE, CBRT.

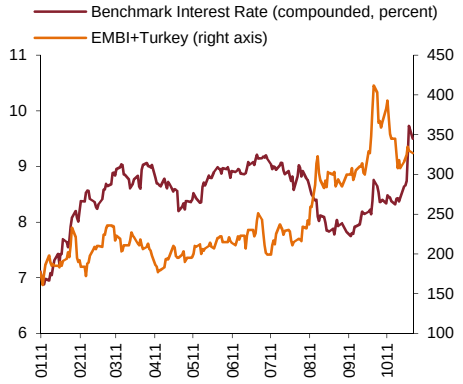
Marked by a downtrend in interest rates amid growth expectations and monetary policy practices in the global markets, market rates in Turkey followed a similar course to other emerging economies in the third quarter. CBRT's policy rate and liquidity decisions taken in August and in September besides its monetary policy stance were instrumental in the decline of market rates in this period. As a result of the adopted measures, market rates moved inversely with the risk premium in August. However, in the subsequent period, market rates went up amid the sovereign risk premium soaring parallel to the mounting deterioration in the global risk appetite. Moreover, the rise in market rates became more evident following the CBRT's O/N lending rate hike by 350 basis points (Charts 5.1.9 and 5.1.10).

Chart 5.1.9.
Third-Quarter Changes in 2-year Market Rates*



* As of October 24, 2011.
Source: Bloomberg, CBRT.

Chart 5.1.10.
Yields on GDBS



Source: ISE, Bloomberg.

Policy rate expectations, a key determinant of market rates, declined notably in the interreporting period (Chart 5.1.11). CBRT's policy rate reduction in August as well as its remarks on the future monetary policy were influential on this decline. Meanwhile, 12-month-ahead inflation expectations from the CBRT's Survey of Expectations remained broadly unchanged (Chart 5.1.12).

Chart 5.1.11.
12-Month Ahead Policy Rate Expectations*

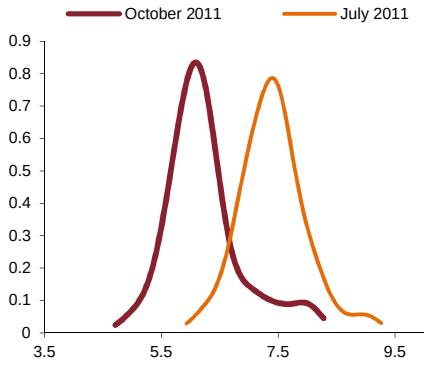
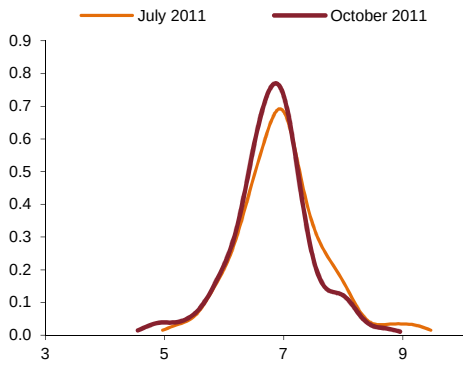


Chart 5.1.12.
12-Month Ahead CPI Inflation Expectations*

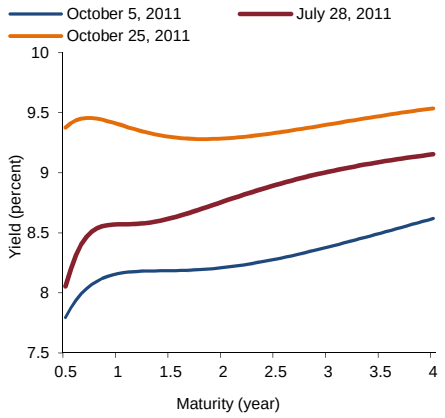


* Horizontal axis shows the policy rate expectation, while the vertical axis shows the Kernel estimate. CBRT's Survey of Expectations, second survey period results.
Source: CBRT.

Market rates declined across all maturities as of end-September with a more limited decline in the short-term interest rates (Chart 5.1.13). The decline in long-term interest rates is attributed to the fall in global growth and interest rate expectations. However, due to the deteriorating global risk perceptions coupled with the CBRT's O/N lending rate hike in October, market rates went up across all maturities, especially in short-term. Consequently, the spread

between long and short-term interest rates narrowed in the third quarter (Chart 5.1.14).

Chart 5.1.13.
Yield Curve*



* Calculated from the compounded returns on bonds quoted in ISE Bonds and Bills Market by using Extended Nelson Siegel (ENS) method.
Source: ISE, CBRT.

Chart 5.1.14.
Interest Rate Spread*

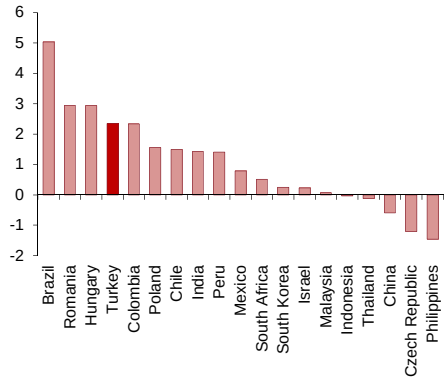
* Spread between 4-year and 6-month yields derived from the ENS yield curve, 5-day moving average.
Source: ISE, CBRT.

The downtrend in market rates was also reflected on real interest rates during the third quarter. Yet, real interest rates have recently picked up as the surge in interest rates became more evident (Chart 5.1.15). Turkey's real interest rates have declined only slightly compared to other emerging economies (Chart 5.1.16).

Chart 5.1.15.
2-Year Real Interest Rates for Turkey*
(Percent)

* Calculated as the 2-year discounted bond returns derived from the yield curve, minus the 24-month ahead inflation expectations from the CBRT's Survey of Expectations.
Source: ISE, CBRT.

Chart 5.1.16.
2-Year Real Interest Rates*
(Percent)

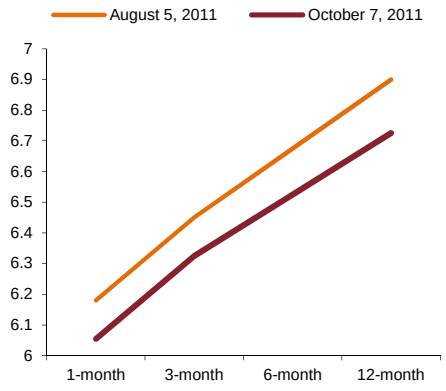


* As of October 24, 2011. Calculated as the 2-year government bond returns of countries minus the 2-year ahead inflation expectations from the Consensus Forecasts.
Source: Bloomberg, Consensus Forecasts, CBRT.

Deposit rates posted a limited decline in the third quarter amid the policy rate reduction and the adopted liquidity measures (Chart 5.1.17). The reduced competition in the deposit market owing to the slowdown of the credit growth

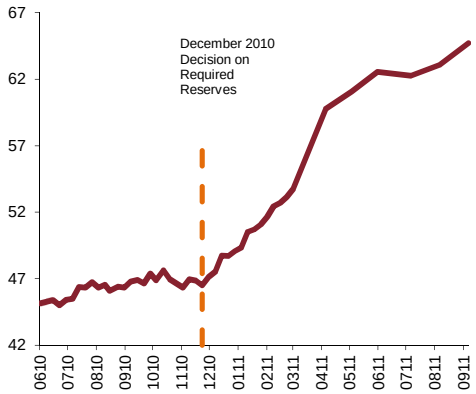
in the last quarter was a key factor in the deposit rate decline. The adopted measures continued to be influential on the maturities of the banking sector liabilities. The average maturity of deposits was extended further in the third quarter (Chart 5.1.18). Moreover, as an incentive to extend the maturity of the TL-denominated bonds issued by banks, required reserve ratios for TL deposits and for liabilities other than participation funds were changed to ensure that the longer the maturity, the lower the required reserves. Furthermore, the sovereign credit rating upgrade is also expected to contribute to the maturity extension of these bonds.

Chart 5.1.17.
Yields on TL Savings Deposits



Source: CBRT.

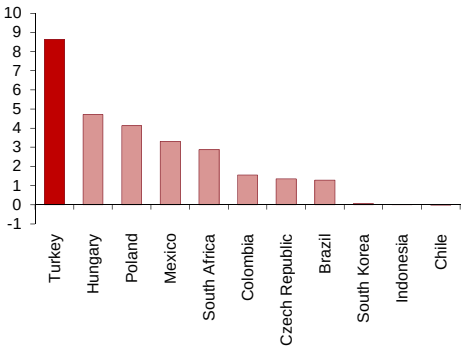
Chart 5.1.18.
Average Maturity of TL Deposit



Source: CBRT.

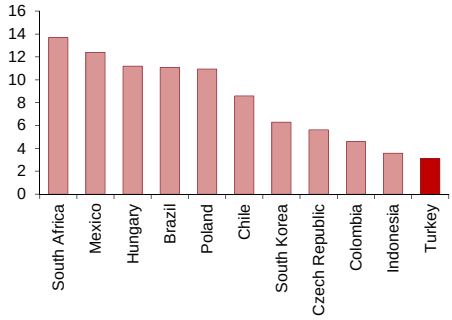
The uncertainty in the global markets fuelled the depreciation of the emerging market currencies against the USD in the third quarter. Turkish lira depreciated more severely compared to other emerging market currencies between July 1 and August 5 (Chart 5.1.19). With a view to alleviating the adverse effects of the excessive volatility and irregular movements in exchange rates on economic and financial stability, the CBRT launched FX selling auctions and opted for gradual declines in FX required reserve ratios under the strategy stated in the interim MPC meeting on August 4. Another measure regarding the FX liquidity in the market was lowering the lending rate for CBRT's transactions in the FX market for both in USD and in euro. Owing to the adopted measures, the recent depreciation of the Turkish lira remained limited compared to other emerging economies (Chart 5.1.20).

Chart 5.1.19.
TL and Emerging Market Currencies*



* Between July 1-August 5, 2011.
Source: Bloomberg, CBRT.

Chart 5.1.20.
TL and Emerging Market Currencies*



* Between August 5- October 24, 2011.
Source: Bloomberg, CBRT.

Besides the recent depreciation, the implied volatility of TL also soared rapidly compared to other emerging market currencies. However, subsequent to the adoption of measures by the CBRT in August, the increase in exchange rate volatility remained limited and dropped to relatively low levels both in short and in the long term (Charts 5.1.21 and 5.1.22). The implied volatility of TL has recently resided at quite low levels compared to other emerging economies.

Chart 5.1.21.
Implied Volatility of Exchange Rates*
(1-Month Ahead)

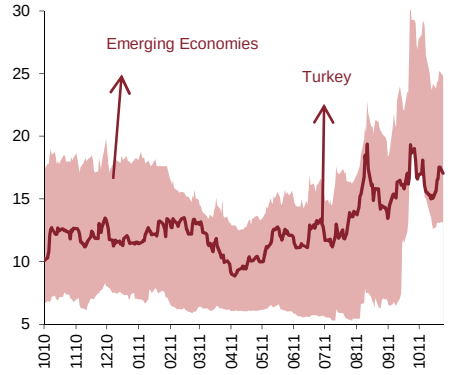
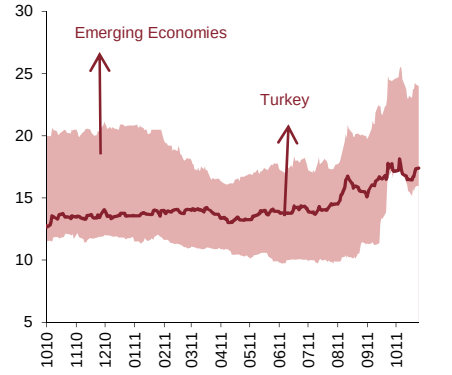


Chart 5.1.22.
Implied Volatility of Exchange Rates*
(12-Month Ahead)

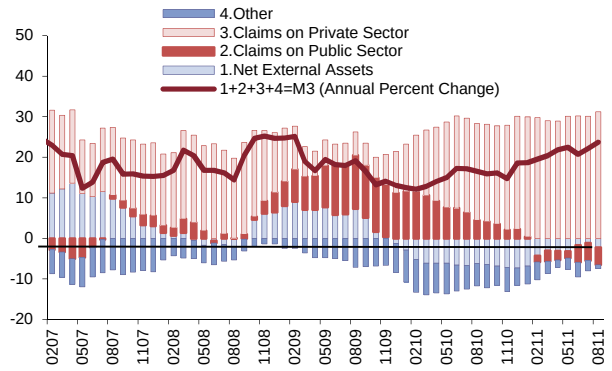


* Emerging economies include Brazil, Chile, Czech Republic, Hungary, Mexico, Poland, South Africa, Indonesia, South Korea and Colombia.
Source: Bloomberg, CBRT.

Domestic and external economic climate also continued to weigh on monetary indicators amid the ongoing volatility in the financial markets. In fact, balance sheet decomposition of M3, the broad measure of money supply, points that the surge in Claims on Private Sector, which mostly consist of bank loans extended to non-financial private individuals and institutions, has recently paused. Meanwhile, the negative contribution of Claims on Public Sector to M3 growth continues. Net External Assets continue to fall mainly owing to the halt of

the increase in commercial banks' external borrowing. Lastly, the negative contribution of the item Other, i.e. the monetary sector's non-deposit resources, to the M3 growth decreased amid the year-on-year decline in the bank profitability (Chart 5.1.23).

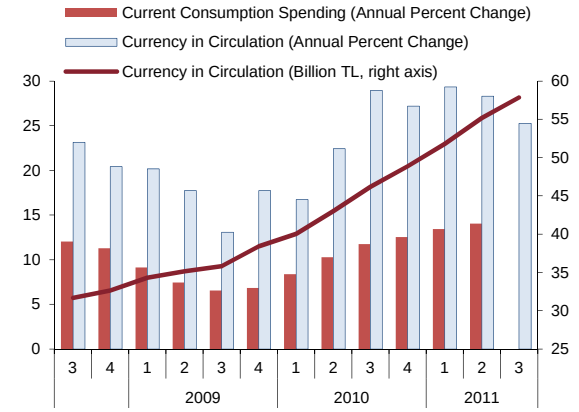
Chart 5.1.23.
Balance Sheet Decomposition of M3
(Contributions to Annual M3 Growth)



Source: CBRT.

Subsequent to the slowdown in the economic activity, growth rate of the seasonally adjusted money in circulation posted a decline in the third quarter (Chart 5.1.24). In particular, the expectation that the unresolved problems in the euro area will continue to hamper economic activity in the forthcoming period indicates that the slowdown in the growth rate of the currency in circulation may be permanent.

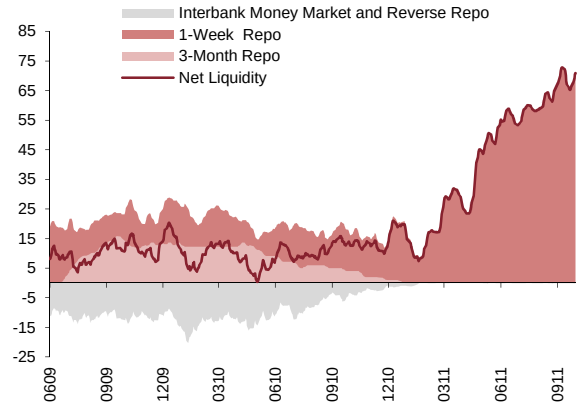
Chart 5.1.24.
Currency in Circulation and Current Consumption Spending*
(Seasonally Adjusted)



* Consumption spending includes private and public consumption excluding furniture, household appliances, transport and communication at current prices.
Source: TurkStat, CBRT.

As of October 20, 2011, an FX liquidity of USD 7.2 billion was injected to the market via FX selling auctions, which were launched in August in order to alleviate the excessive volatility of the Turkish lira. FX selling auctions widened the TL liquidity deficit in the Interbank Money Market, while the facilitation of holding up to 20 percent of the TL required reserves in foreign currencies narrowed the TL liquidity deficit. On balance, the liquidity deficit posted a quarter-on-quarter increase in the third quarter (Chart 5.1.25). In addition, the Treasury's average account balance at the CBRT also increased, feeding into the liquidity deficit in this period.

Chart 5.1.25.
Market Liquidity
(Billion TL, Weekly Moving Average)



Source: CBRT.

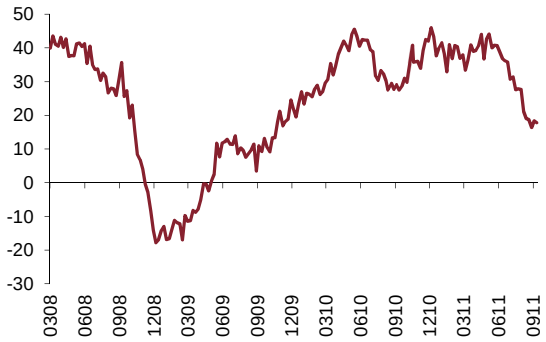
CBRT's FX selling auctions besides the reductions on FX required reserve ratios lowered FX reserves, while the facilitation of holding up to 20 percent of the TL required reserves in foreign currencies in addition to the easing of the utilization of rediscount loans increased FX reserves.

5.2. Financial Intermediation and Loans

Bank loans exhibited a significant decline in the third quarter of 2011 (Chart 5.2.1). Rapid loan growth is closely monitored by the authorities in view of the associated risks on macroeconomic and financial stability. In this respect, various measures have been put into effect by the CBRT and the BRSA since end-2010 in order to limit loan growth. The CBRT's required reserve ratio hikes as well as the adopted liquidity measures in addition to amendments to BRSA's regulations on various loans were instrumental in the slowdown of loan growth in the third quarter. Consequently, the real sector loans extended by the banking

sector, which posted a year-on-year growth above 40 percent in the first two quarters, grew by only 18 percent in the third quarter (Chart 5.2.1).

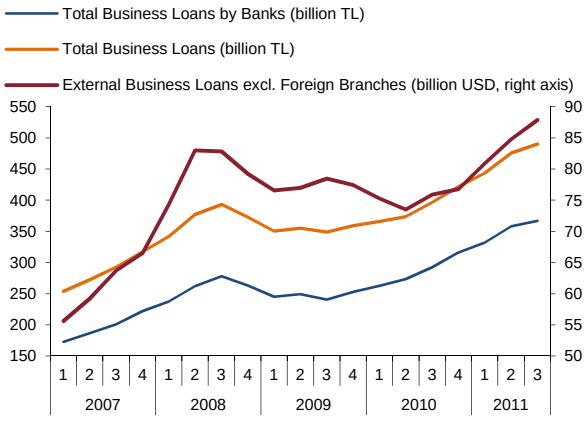
Chart 5.2.1.
Growth Rate of Real Sector Loans*
(13-Week Average, Annual Percent Change)



* Adjusted for exchange rate effect.
Source: BRSA.

Real sector loans extended by domestic banks plummeted, while loans extended by external institutions and organizations are yet to markedly slow down as of August (Chart 5.2.2).

Chart 5.2.2.
Business Loans

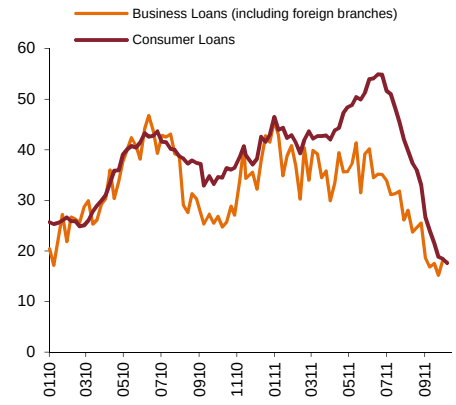


Source: CBRT.

The downtrend in real sector loans in the third quarter was driven by the developments in both business and consumer loans. Annualized data for the second and third quarters suggest that the growth rate of consumer loans went down from 52 percent to 18 percent, and the growth rate of business loans dropped to 19 percent from 34 percent (Chart 5.2.3). Comparisons with the

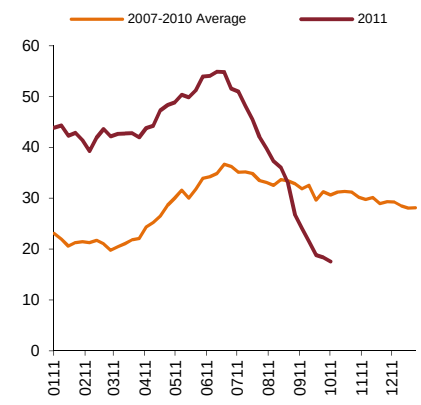
previous years indicate that even though seasonal factors were also influential on this decline, they fail to fully explain the slowdown (Chart 5.2.4)

Chart 5.2.3.
Loan Growth Rates*
(13-Week Average, Annual Percent Change)



* Adjusted for exchange rate effect.
Source: CBRT.

Chart 5.2.4.
Seasonal Effects in Consumer Loans*
(13-Week Average, Annual Percent Change)

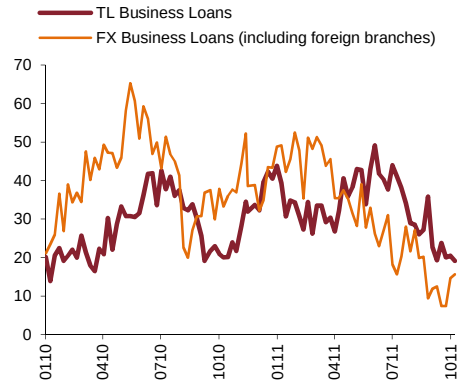


* Adjusted for exchange rate effect.
Source: BRSA.

Business loan growth lost pace in both TL and FX-denominated loans, while the slowdown is more severe for the latter (Chart 5.2.5). Furthermore, it is noteworthy that the recent slowdown in business loan growth is more remarkable compared to the previous downward courses experienced during the same period of the past years (Chart 5.2.6).

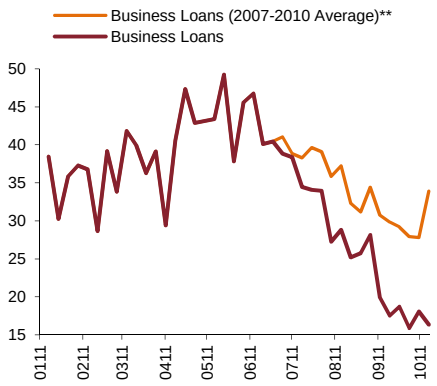
The downtrend in FX-denominated loans, a majority of which is long-term and mostly used for financing of investment spending is mainly attributed to demand-side developments. As a matter of fact, a significant slowdown is observed in investment spending since the first quarter of the year. Second-quarter results of the Business Tendency Survey also point that the effect of the loan demand due to investment financing on aggregate loan demand declined to a large extent. A key determinant of FX loans on the supply side is the developments regarding access to external resources. Strong evidence is lacking to infer that banks faced difficulties in access to external resources both in the second and the third quarter.

Chart 5.2.5.
Growth Rates of TL and FX Business Loans*
(13-Weekly Average, Annual Percent Change)



* Adjusted for exchange rate effect.
Source: CBRT.

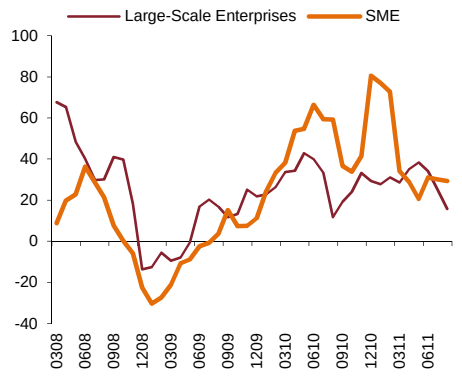
Chart 5.2.6.
Seasonal Effects in Business Loans*
(13-Weekly Average, Annual Percent Change)



* Adjusted for exchange rate effect.
** Interpolated using the average third quarter growth rates in 2007-2010.
Source: BRSA.

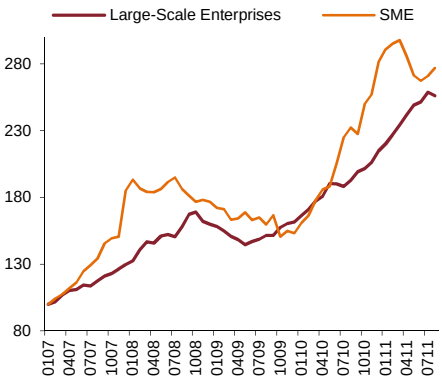
An analysis of the business loans by scale reveal that the recent slowdown stems mostly from loans extended to large-scale enterprises according to the data released in August (Charts 5.2.7 and 5.2.8). Meanwhile, the deceleration in loans extended to large-scale enterprises is particularly marked by the slowdown in FX-denominated loans. The slowdown in business loans being driven mainly by large-scale enterprises rather than the SMEs, support the view that this slowdown may be related to demand.

Chart 5.2.7.
Business Loan Growth Rates by Scale*
(Nominal, 3-Month Average, Annual Percent Change)



*Adjusted for exchange rate effect.
Source: BRSA.

Chart 5.2.8.
FX Business Loans by Scale*
(Nominal, January 2007=100)

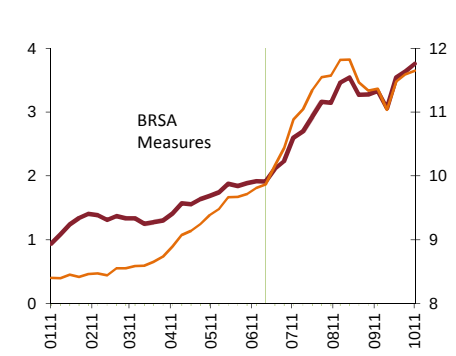


*Adjusted for exchange rate effect.
Source: BRSA.

Although demand-driven factors stand out, the adopted measures by policy makers are also considered to contribute to the slowdown in business loan growth. The uptrend in loan and deposit rates observed since the early 2011 stems from the gradual hikes in required reserve ratios and the tight stance

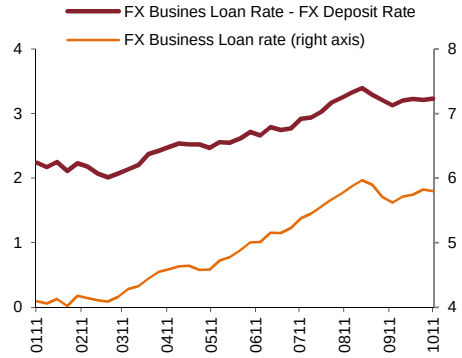
of the liquidity management (Charts 5.2.9 and 5.2.10). In addition to the CBRT's policy measures, tightening measures by the BRSA has also a direct impact on loans.

Chart 5.2.9.
TL Business Loan Rates
(Flow, 4-Week Average, Percent)



Source: CBRT.

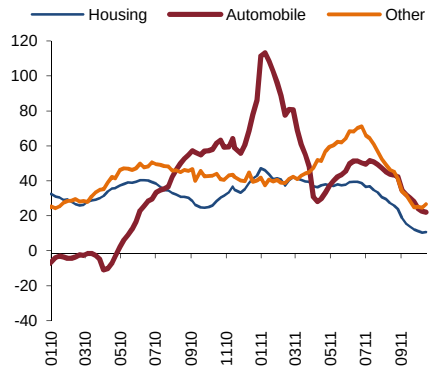
Chart 5.2.10.
FX Business Loan Rates
(Flow, 4-Week Average, Percent)



Source: CBRT.

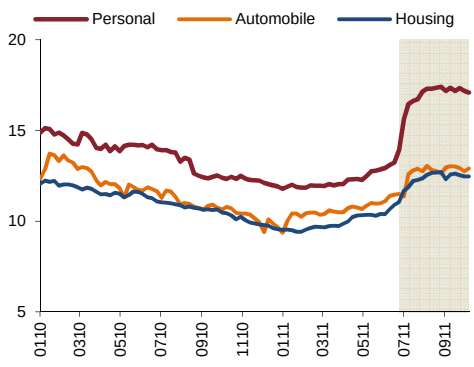
BRSA's decisions are also influential on consumer loans. Growth of consumer loans across all subcategories plummeted in the third quarter. In particular, the slowdown of the other consumer loans, which comprise almost half of the consumer loans and displayed a significant surge in the second quarter, was remarkable (Chart 5.2.11). The slowdown in other consumer loans is mostly attributed to the amendments introduced in end-June by the BRSA to general provisions and capital adequacy regulation. Indeed, growth in other consumer loans assumed a slowing trend immediately after the reflection of the rising costs due to amendments on loan rates by banks (Charts 5.2.11 and 5.2.12).

Chart 5.2.11.
Weekly Growth Rates of Consumer Loans*
(13-Week Average, Annual Percent Change)



* Including automobile loans extended by consumer financing firms.
Source: CBRT.

Chart 5.2.12.
Consumer Loan Rates
(Flow, Annualized, Percent)



Source: CBRT.

Although the amendments by the BRSA were mostly directed towards the other consumer loans, owing mainly to the signaling effect of the stance of the public authorities, housing and automobile loan rates also registered increases in this period, and the growth rate of these loans assumed a slowing trend as well (Chart 5.2.11). The mounting perception that necessary measures will be taken to warrant the decline of the elevated loan growth rate in the first quarter to nearly 25 percent, opted banks to raise loan rates in order to ensure slowdown in loans as well as to increase profitability on loans. Another factor that may have been influential on the slowdown of consumer loans is the probability of taking loan supply forward by banks with the expectation that new measures will be taken in the second half of the year. Other consumer loans' displaying the fastest growth before the adoption of the BRSA measures, and also being the most sensitive loan to supply conditions, bolster this view (Chart 5.2.10).

Indicators are present pointing that the slowdown in consumer loans is also attributable to demand-side factors despite the evident effect of supply-side factors. The data suggesting slowdown of the economic activity in the third quarter and the weak course of consumer confidence stand out in this context.

In sum, annual loan growth rate converged to desired levels in the third quarter regarding macroeconomic and financial stability. Demand-side factors remained dominant across business loans in this period, while supply-side factors were instrumental on consumer loans due to measures adopted by the authorities. Respective data point that besides their direct effects, the adopted measures were influential on the supply of loans also through the signaling effect.

A possible financial turmoil in the global economy in the forthcoming period and its potential effects on loan markets may have an adverse effect on the domestic economic activity. In such a case, required funding by loan markets is crucial for sustainability of the economic activity. The recent measures by the CBRT regarding TL and FX liquidity aim at containing the adverse effects of possible fluctuations in money markets on functioning of the loan markets. CBRT will continue to closely monitor financial markets in the forthcoming period, and take necessary measures to ensure functioning of the loan market.

Box 5.1 Use of Inflation Compensation in Monetary Policy Analyses

Obtaining accurate information on inflation expectations is crucial for enabling economic agents to take sound economic decisions. As the expectations of economic agents directly affect the pricing behavior, and in turn the inflation rates, a reliable measurement of inflation expectations is essential for the transmission of the monetary policy. For a long time, inflation expectations in Turkey have been measured through the bi-monthly Survey of Expectations conducted by the CBRT. However, in addition to surveys, inflation compensation, which directly reflects the inflation pricings of financial market participants at high frequency and with a larger number of participants than surveys, is also accepted as an additional indicator for inflation expectations in the relevant literature. This Box aims at introducing the inflation compensation, which helps us derive information on inflation expectations of financial market participants in Turkey to serve as an instrument to be used in policy analyses.

Inflation Compensation

Inflation compensation is defined as the inflation rate which, if realized, would leave an investor indifferent between holding a conventional bond and an inflation-indexed bond (Gürkaynak, Sack and Wright, 2010). Accordingly, the spread between yields on conventional and inflation-indexed bonds with the same features and maturity gives out inflation compensation.

The components of the yields on conventional and inflation-indexed bonds can be illustrated as follows:

$$r_n = \bar{r} + \pi^e + \theta_r + \theta_\pi + \theta_c + \ell_n + \varepsilon_n$$

$$r_r = \bar{r} + \theta_r + \theta_c + \ell_r + \varepsilon_r$$

Here, r_n stands for the yield on a conventional bond, r_r is the yield on an inflation-indexed bond, $\bar{r}$ is the expected real interest rate, π^e is the expected inflation rate, θ_r is the pricing of real interest rate variation risk, θ_π is the pricing of inflation risk, θ_c is the pricing of counterparty risk, ℓ_n and ℓ_r stand for the liquidity premium of conventional and inflation-indexed bonds, and ε_n and ε_r are the idiosyncratic factors regarding conventional and inflation-indexed bonds, respectively.

Since inflation-indexed bond, by definition, protects its investor against the realized inflation, inflation-indexed bond prices do not include inflation expectation and the pricing of inflation risk. Thus, given that the idiosyncratic factors exclusive to bonds are negligible and unpredictable, inflation compensation, the difference between the returns on conventional and inflation-indexed bonds, boils down to the sum of inflation expectation, inflation uncertainty and the difference between liquidity premiums of the conventional and the inflation-indexed bond as follows:

$$IC = r_n - r_r = \pi^e + \theta_\pi + (\ell_n - \ell_r) + (\varepsilon_n - \varepsilon_r)$$

Inflation compensation in this Box is calculated using the data on conventional and inflation-indexed bonds traded in the ISE and by applying Duran, Gülşen and Gürkaynak (2011a) methodology.

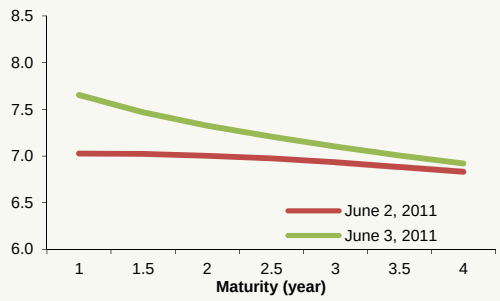
Case Studies on Inflation Compensation

Inflation compensation is mainly affected by inflation expectations, inflation uncertainty and liquidity factors. Duran, Gülşen and Gürkaynak (2011a) showed that out of these factors, liquidity conditions do not notably affect the pricing of bonds when inflation compensation is calculated at daily frequency. Therefore, day-to-day changes in inflation compensation can mainly be attributed to inflation expectation and the pricing of its uncertainty. The changes in inflation expectation as well as the changes in inflation uncertainty are both crucial for monetary policy, and therefore, case studies on inflation compensation have a high value of information. Case studies on the changes in inflation compensation also enable to analyze the effects of monetary policy decisions and inflation surprises on inflation expectations and inflation uncertainty.[1] This can be clarified with an example.[2,3]

[1] It is useful to consider liquidity conditions and some significant changes that may occur in the respective period before reaching a judgment in case studies. Moreover, in all case studies, it may be appropriate to analyze to what extent the changes in inflation compensation stem from the change in nominal yields or the change in in real yields.
[2] When interpreting case studies, it should be considered that inflation compensation in any maturity reflects the annualized inflation expectation and uncertainty for the period up to that maturity. Thus, changes in the short-term inflation compensation are partially reflected on long term.
[3] For different case studies, see Duran, Gülşen and Gürkaynak (2001a, 2001b). Evolution of inflation compensation shown in this Box shows the changes in inflation pricing of the overall market.

For example, monthly inflation rate, which was 2.42 percent in May 2011, was perceived as an upward surprise by markets. This surprise mainly stemmed from surging food prices. The red line in Chart 1 displays the inflation compensation calculated by the closing prices of the last day before the announcement of the inflation figures, while the green line shows the inflation compensation on the day of the announcement of the inflation data.[4] Amid the upward inflation surprise in May, inflation compensation increased across all maturities. This increase was more pronounced in the short term, which pointed that the increase was perceived to be temporary by market participants. However, inflation compensation is not sufficient to analyze to what extent the change in inflation compensation is due to the change in inflation expectations or the change in inflation uncertainty. However, inflation compensation entails information for inflation-targeting central banks since inflation and the pricing of inflation risk premium, depend on the distribution of inflation expectations.

Chart 1. Effects of the May 2011 Inflation Surprise on Inflation Compensation



In sum, it is believed that inflation compensation, defined as the spread between yields on conventional and inflation-indexed bonds, provide information regarding the inflation expectations of financial market participants. In this respect, inflation compensation is a market-based indicator, which is an alternative to expectation surveys. However, while obtaining inflation expectations from inflation compensation, factors like inflation uncertainty and liquidity conditions should also be taken into account. When these factors are considered, an additional tool providing more accurate information on the inflation expectations of the financial market participants in Turkey at higher frequency will be included into the toolkit of the monetary policymakers. One of the major advantages of this approach is that it enables to conduct case studies on the monetary policy effectiveness or the impact of the inflation surprises, due to the availability of the yield data at high frequency.

[4] Inflation data are released by TurkStat at 10.00 a.m. in the 3rd day of the subsequent month. Therefore, the effect of the announcement of inflation data is reflected on the closing prices of the same day.

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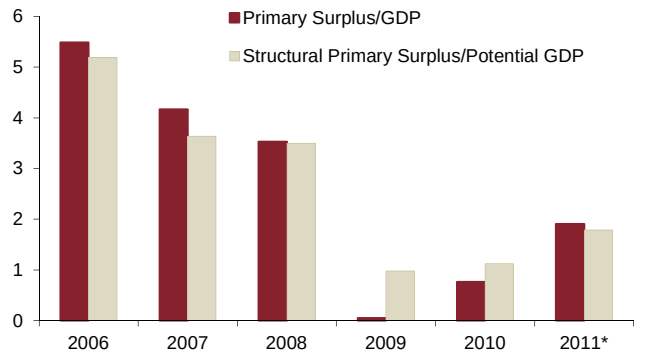
6. Public Finance

The favorable outlook in the public finance continued in the third quarter. The soaring tax revenues and falling interest expenditures were the major drivers of the improved budget balances in Turkey. In addition, within the scope of the law on restructuring of public claims (tax and insurance premium amnesty), applications of which were due on May 31, 2011, an additional budget revenue of about 1 percent of the GDP was envisioned in 2011. Furthermore, the relative slowdown in primary expenditures also contributed to the improvement in budget balance.

The MTP covering the 2012-2014 period was publicly announced in October. Accordingly, the central government primary balance for 2011 is expected to increase by 1.1 point compared to 2010. Meanwhile, the ratio of the cyclically adjusted structural primary surplus to potential GDP is expected to post a year-on-year increase by 0.7 point (Chart 6.1). In other words, in the event that the forecasts under the MTP are realized, fiscal policy will be tightened in 2011.

Chart 6.1.
Central Government Primary Surplus and Structural Primary Surplus
(Percent of GDP and Potential GDP)



* Estimate. Includes revenues collected under Law 6111 on restructuring of public claims.
Source: MTP (2012-2014), Çebi, C. and Ü. Özlale, (2011), "Türkiye'de Yapısal Bütçe Dengesi ve Mali Duruş" (in Turkish), CBRT Working Paper No. 11/11.

Increases in indirect taxes, VAT on imports in particular, which are driven by the vigorous private consumption demand, in addition to revenues collected under the law on restructuring of public claims were particularly effective in the favorable outlook of the budget performance, thereby signaling that the improvement in fiscal balances was mainly due to cyclical factors as well as legal arrangements. As a matter of fact, excluding the revenues collected under the tax and social security premium amnesty, which account

for approximately 1 percent of the GDP, the ratio of primary surplus to GDP remained unchanged and the ratio of structural primary surplus to potential GDP decreased in 2011.

The public finance outlook presented in the MTP points that the improvement in 2011, driven also by the robust economic recovery, will also continue in the forthcoming period. According to the MTP, primary expenditures are envisioned to be lowered gradually. In addition, parallel to the rises as per legal and administrative arrangements, tax revenues and total public primary surplus are also expected to be gradually increased. Amid the decline in total public financing requirement, the public debt to GDP ratio is also expected to post a remarkable downtrend in the medium term (Table 6.1).

Table 6.1.
Central Government Budget Balance and EU-Defined Debt Stock
(Percent of GDP)

	2009	2010	2011*	2012**	2013**	2014**
Budget Revenues	22,5	23,0	22,7	23,1	22,9	22,5
Budget Expenditures	28,0	26,6	24,4	24,6	24,2	23,6
Budget Balance	**-5,5**	**-3,6**	**-1,7**	**-1,5**	**-1,4**	**-1,0**
Budget Revenues (Program-Defined)	21,0	21,8	22,0	22,1	22,0	21,8
Primary Expenditures (Program-Defined)	22,5	22,2	21,1	21,1	20,9	20,4
Primary Balance (Program-Defined)	**-1,5**	**-0,5**	**0,9**	**1,0**	**1,2**	**1,4**
Total Public Primary Balance (Program-Defined)	**-1,0**	**-0,2*****	**1,2**	**1,1**	**1,3**	**1,5**
EU-Defined Nominal Debt Stock	**46,1**	**42,2**	**39,8**	**37,0**	**35,0**	**32,0**

* Estimate.
** Target.
*** Realization estimate.
Source: MTP (2012-2014).

MTP targets point to a limited tightening in fiscal policy in the forthcoming period. Accordingly, medium-term projections in the final part of the Report are based on a framework that entails the increases in additional revenues to be acquired either by cyclical effects or legal arrangements like tax amnesty to be used in lowering the public debt without being transformed into expenditures. In this regard, inflation is not expected to be exposed to a public sector driven pressure. However, it should be emphasized that strengthening the fiscal structure by implementing institutional and structural reforms envisaged in the MTP remains critical in order to ensure a permanent fiscal discipline and to maintain Turkey's positive divergence from other emerging market economies.

6.1. Budget Developments

The central government budget and the primary balance posted a surplus of TL 0.2 billion and TL 35 billion, respectively (Table 6.1.1). The year-on-

year improvement in the budget outturn in the first three quarters of 2011 was driven by rising tax revenues amid the economic recovery besides the fall in interest expenditures and the TL 11.4 billion collected under the law on restructuring of public claims by September. Additionally, the relative slowdown in primary expenditures also contributed to the decline in the budget deficit.

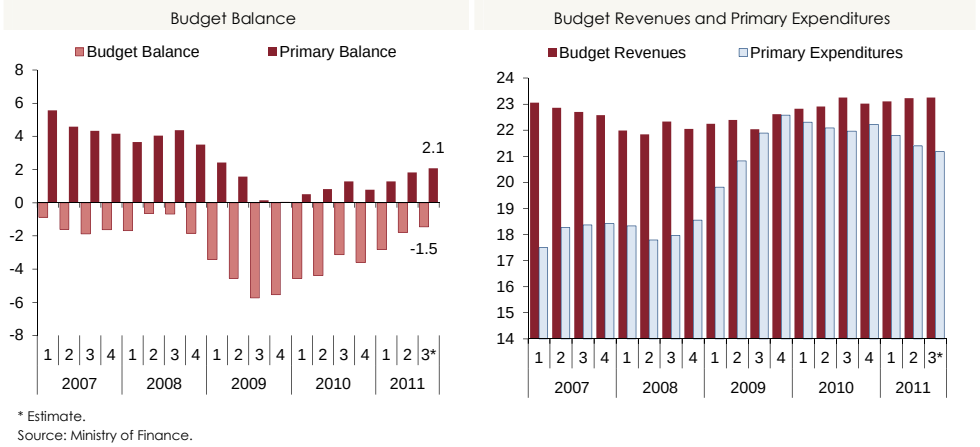
Table 6.1.1.
Central Government Budget Aggregates
(Billion TL)

	Jan.-Sept. 2010	Jan.-Sept. 2011	Rate of Increase (Percent)	Actual/Target (Percent)
Central Government Budget Expenditures	208.8	220.9	5.8	70.7
Interest Expenditures	39.3	34.8	-11.5	73.2
Primary Expenditures	169.5	186.1	9.8	70.2
Central Government Budget Revenues	187.5	221.1	17.9	79.2
I. Tax Revenues	153.8	188.4	22.5	81.1
II. Non-Tax Revenues	27.9	25.8	-7.5	65.4
Budget Balance	**-21.3**	**0.2**	**-**	**-**
Primary Balance	**18.0**	**35.0**	**94.5**	**250.8**

Source: Ministry of Finance.

Having slightly deteriorated due to sharp increases in primary expenditures in the last quarter of 2010, central government budget balance and primary budget balance to GDP ratios have started to improve amid the favorable budget outturn in the first three quarters of 2011 (Chart 6.1.1). The budget revenues to GDP ratio has edged up from end-2010 amid strong tax revenues and the law on restructuring public claims during the first three quarters of 2011, while the primary expenditures to GDP ratio displayed a decline in the first three quarters of 2011 compared to end-2010 figures (Chart 6.1.1).

Chart 6.1.1.
Central Government Budget
(Annualized, Percent of GDP)



* Estimate.
Source: Ministry of Finance.

Central government primary expenditures posted a year-on-year increase by 9.8 percent in the third quarter of 2011. The limited increase in primary expenditures was mainly attributed to the relatively low increase by 4.1 percent in current transfers, the major component of primary expenditures. Personnel expenditures, another major component of primary expenditures, were up 17 percent. Meanwhile, capital expenditures increased by about 18.9 percent, implying that public investments made a positive contribution to GDP growth in the first half of 2011 (Table 6.1.2).

Table 6.1.2.
Central Government Primary Expenditures
(Billion TL)

	Jan.-Sept. 2010	Jan.-Sept. 2011	Rate of Increase (Percent)	Actual/Target (Percent)
Primary Expenditures	**169.5**	**186.1**	**9.8**	**70.2**
1. Personnel Expenditures	47.4	55.5	17.0	76.7
2. Government Premiums to SSI	8.0	9.4	17.8	74.1
3. Purchase of Goods and Services	17.0	20.5	21.2	68.4
a) Defense and Security	5.6	6.0	7.4	59.7
b) Health Expenditures	3.8	4.0	4.1	80.3
4. Current Transfers	77.7	80.0	3.0	69.1
a) Duty Losses	2.7	1.2	-53.8	24.6
b) Health, Pension and Social Benefits	43.1	39.9	-7.4	64.0
c) Agricultural Support	5.0	5.7	15.8	95.6
d) Shares Reserved From Revenues	19.8	22.8	15.0	79.6
5. Capital Expenditures	12.2	14.5	18.9	67.0
6. Capital Transfers	2.8	2.7	-6.2	62.0

Source: Ministry of Finance.

Central government general budget revenues increased by a year-on-year 1.9 percent in the first three quarters of 2011. Tax revenues soared by 22.5 percent in the said period, while non-tax revenues, despite the increase in capital revenues, declined by 7.5 percent owing to the decrease in enterprises and property revenues as well as interest, shares and fines (Table 6.1.3). Amid the vigorous consumption demand in the first half, consumption-based taxes, mainly the value added tax on imports surged. Additionally, high levels of temporary corporate tax payments in February, May and August also contributed to the soaring tax revenues. The SCT revenues on the other hand, posted a relatively limited increase owing to the slowdown in the rate of increase in SCT on oil, natural gas and tobacco products.

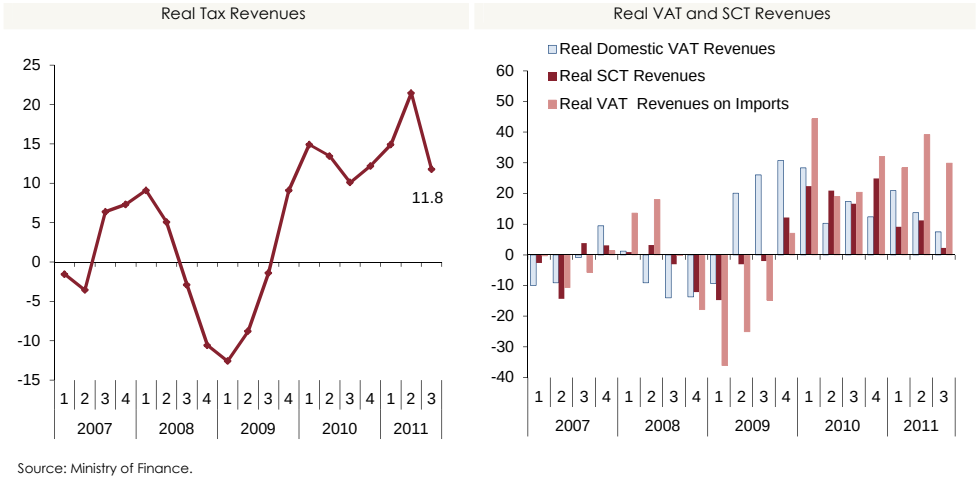
Table 6.1.3.
Central Government General Budget Revenues
(Billion TL)

	Jan.-Sept. 2010	Jan.-Sept. 2011	Rate of Increase (Percent)	Actual/Target (Percent)
General Budget Revenues	**181.7**	**214.2**	**17.9**	**78.8**
I-Tax Revenues	**153.8**	**188.4**	**22.5**	**81.1**
Income Tax	29.9	35.8	19.7	75.6
Corporate Tax	15.0	19.7	31.8	85.1
Domestic VAT	19.5	23.4	20.0	87.2
SCT	41.3	46.7	13.3	76.4
VAT on Imports	25.5	35.8	40.2	87.2
II-Non-Tax Revenues	**27.9**	**25.8**	**-7.5**	**65.4**
Enterprises and Property Revenues	8.3	7.5	-9.5	102.4
Interests, Shares and Fines	15.8	14.7	-6.6	71.2
Capital Revenues	2.3	2.4	3.2	23.7

Source: Ministry of Finance.

The annual rate of increase in real tax revenues, which has been on the rise since the fourth quarter of 2009 with the recovery of private consumption demand, slightly lost pace due to the waning base effects in the second and third quarters of 2010. Picking up sharply as of the last quarter of 2010, real tax revenues declined significantly in the third quarter of 2011, posting a year-on-year increase by only 11.8 percent due to the slowdown in the growth of the real VAT on imports and SCT revenues (Chart 6.1.2). The SCT revenues and VAT revenues on imports, major components of tax revenues, increased by 2.3 and 29.9 percent year-on-year, respectively, in real terms. Meanwhile, domestic VAT revenues rose by 7.5 percent year-on-year in real terms (Chart 6.1.2).

Chart 6.1.2.
Real Tax Revenues
(Percent of GDP)



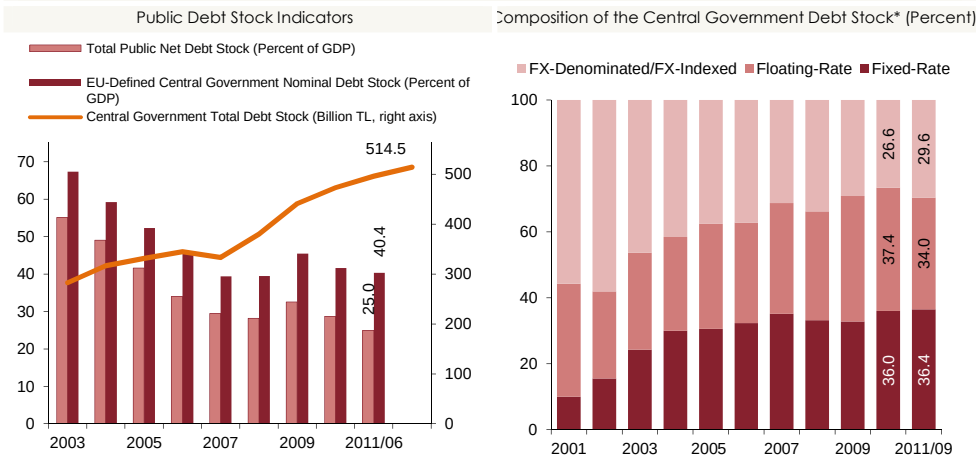
Source: Ministry of Finance.

6.2. Developments in the Debt Stock

The fiscal and debt management policies consistent with the prudent monetary policy stance in 2010 as well as the faster-than-expected economic recovery since the last quarter of 2009 helped improve fiscal balances, and consequently the public debt stock indicators. 2010 was marked by a decline in public debt ratios, a significant fall in the real cost of borrowing, an extended average maturity of debt, a decreased share of interest rate and exchange rate sensitive debt in the debt stock and a lower domestic debt rollover ratio. This favorable outlook also continued throughout the first nine months of 2011.

The central government debt stock increased by 8.6 percent from end-2010 to TL 514.5 billion in September 2011 (Chart 6.2.1). Changes in net domestic debt and net external debt accounted for an increase by TL 14 billion and a decrease by TL 1.6 billion, respectively, in central government debt. Meanwhile, due to the depreciation of the USD against the euro and the appreciation of the USD against the Turkish lira, parity and exchange rate effects brought central government debt up by TL 5.0 and 24.8 billion, respectively.

Chart 6.2.1.
Public Debt Stock Indicators

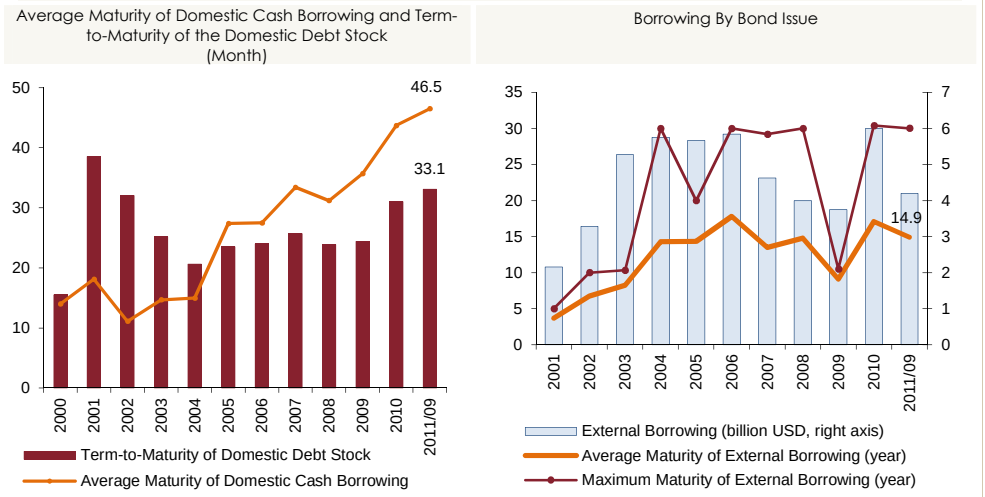


* Floating-Rate debt stock includes discounted securities with a maturity less than 1 year and GDBS with floating rates. FX-Denominated/FX-Indexed debt stock includes external debt stock and FX-denominated and FX-indexed domestic debt stock.
Source: Treasury, CBRT.

Public debt ratios posted a favorable outlook in the first half of 2011 amid ongoing economic recovery and the improving budget performance. The ratio of total net public debt stock and EU-defined general government nominal debt stock to GDP declined by 3.8 and 1.2 percentage points to 25.0 and 40.4 percent, respectively compared to the end-2010 figures (Chart 6.2.1).

The Treasury's financing program for 2011, as in the previous years, has been formulated based on an approach to limit the liquidity as well as interest and exchange rate sensitivity of the debt stock. In this regard, the share of fixed rate instruments in total debt stock remained unchanged in September 2011, compared to the same period of the previous year (Chart 6.2.1).

Chart 6.2.2.
Maturity of Borrowing from Domestic and External Markets

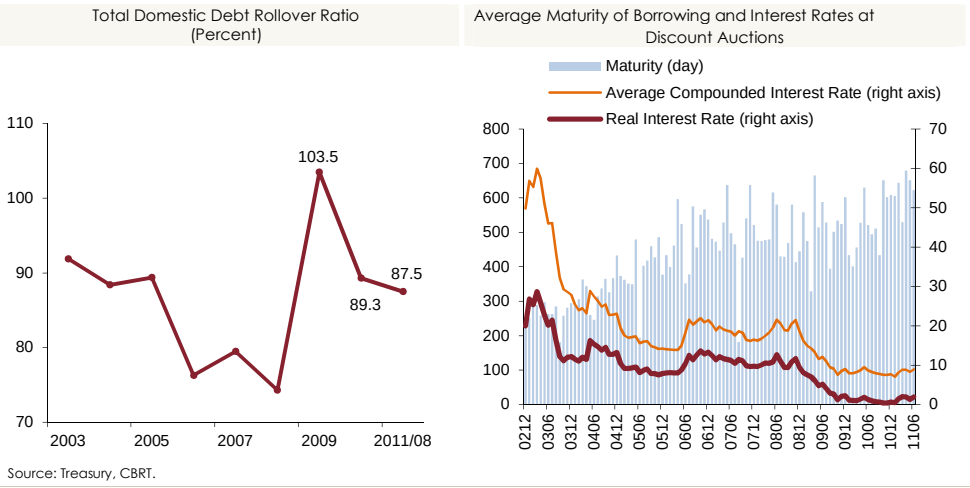


Source: Treasury, CBRT.

The financing strategy implemented to reduce liquidity risk continued in 2011. The ratio of public deposits to average monthly debt service is 258.3 percent as of September 2011. With an average maturity of domestic cash borrowing above 2010 averages, term-to-maturity of domestic debt stock increased to 33.1 months in September 2011 (Chart 6.2.2). Moreover, bond issues have yielded a long-term external debt of USD 4.2 billion in the first nine months of 2011, with an average maturity slightly down to 14.9 years from 2010 (Chart 6.2.2).

Having plunged from early 2009 until early 2011, the monthly average real interest rates at discount Treasury bill auctions remain low despite having posted slight increases in recent months (Chart 6.2.3). The extended average maturity of domestic borrowing besides low cost supports the favorable outlook for public debt sustainability.

Chart 6.2.3.
Domestic Borrowing



Source: Treasury, CBRT.

Domestic debt rollover ratio has been 87.5 percent as of the first eight months of 2011 (Chart 6.2.3). However, this ratio is expected to decline to 86.1 percent by the end of 2011 as envisaged by the Treasury's domestic borrowing strategy for October-December 2011.

7. Medium-Term Projections

This Chapter summarizes the underlying forecast assumptions and presents the medium-term inflation and output gap forecasts, as well as the monetary policy outlook over the upcoming three-year horizon.

7.1. Current State of the Economy, Short-Term Outlook and Assumptions

Second-quarter GDP data were more favorable than the outlook presented in the July Inflation Report. Having recorded a slightly limited slowdown than expected, domestic demand was the main driver of economic growth in this period. Meanwhile, external demand remained weak. Seasonally adjusted data suggest that exports followed a flat course, while imports went down quarter-on-quarter. Thus, the contribution of net exports was positive in the second quarter of the year.

The depreciation of the Turkish lira had a major impact on inflation in the third quarter of 2011. Furthermore, the surge in gold prices also raised the consumer inflation. Exchange rate developments particularly affected the prices of core goods, while services prices maintained a mild course. Food prices declined significantly on the base effect. In brief, inflation followed nearly a flat course.

The imported input prices continued to surge in the third quarter of 2011. Despite the quarter-on-quarter decline in international oil prices, domestic fuel, solid fuel and bottled gas prices went up amid the depreciation of the Turkish lira, also weighing further on the prices of core goods in the third quarter. Correspondingly, core price indicators SCA-H and SCA-I remained on the rise in this period (Chart 3.1.15). Alternative core inflation indicators monitored by the CBRT also suggest a higher underlying trend compared to the previous quarter (Chart 3.1.18).

Table 7.1.1.
Revisions to 2011 Assumptions

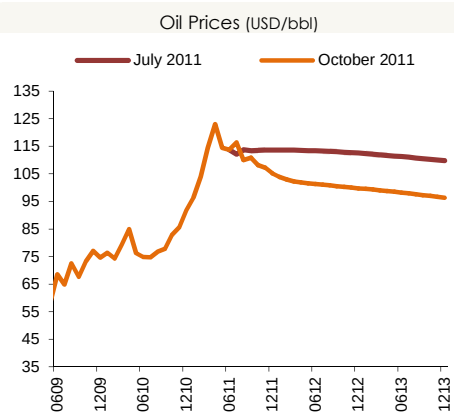
		July 2011	October 2011
Output Gap	2011Q2	-1.1	-0.4
	2011Q3	-0.8	-0.7
	2012 Average	-0.01	-1.08
Food Price Inflation (Year-end Percent Change)	2011-2013	7.5	7.5
Import Prices (Average Annual Percent Change, USD)	2011	15.4	15.2
	2012	0.6	-1.9
Oil Prices (Average Annual, USD)	2011	115	110
	2012	115	100
Export-Weighted Global Production Index (Average Annual Percent Change)	2011	2.51	2.45
	2012	2.88	2.26

In the July Inflation Report, with reference to future prices for commodities, oil prices were assumed to be 115 USD/bbl for 2011 and onwards. Given the lower levels of crude oil prices in the third quarter, crude oil price assumptions are revised as USD 110/bbl for 2011. Import prices were assumed to record an average year-on-year increase by 15.4 percent in 2011 in the July Inflation Report. According to revised projections based on futures prices, import prices are assumed to increase by an average 15.2 percent in 2011. (Chart 7.1.1). In addition, our assumption on food inflation remained unchanged at 7.5 percent for 2011 and onwards (Table 7.1.1).

In the July Inflation Report, prices of tobacco products were assumed to increase in line with the inflation target by 5.5 percent, adding nearly 0.3 percentage points to inflation. However, as hikes to tobacco products prices were far above than assumed, they are estimated to contribute to inflation approximately by 0.9 percentage points, thereby adding 0.6 percentage points to the short-term inflation forecast (Table 1.3.1).

In the previous reports, it was stated that natural gas and electricity prices were likely to increase in the second quarter of 2011. Indeed, natural gas and electricity tariffs were subject to hikes starting from October 1, 2011. Accordingly, energy inflation is expected to soar in October, thus contributing to annual inflation by 0.5 percentage points. However, the increase in energy inflation was already included in the inflation forecasts under automatic pricing mechanism, thus leaving the year-end inflation forecast unchanged.

Chart 7.1.1.
Revisions to Oil and Import Price Assumptions



Source: Bloomberg, CBRT.

Source: TurkStat, CBRT.

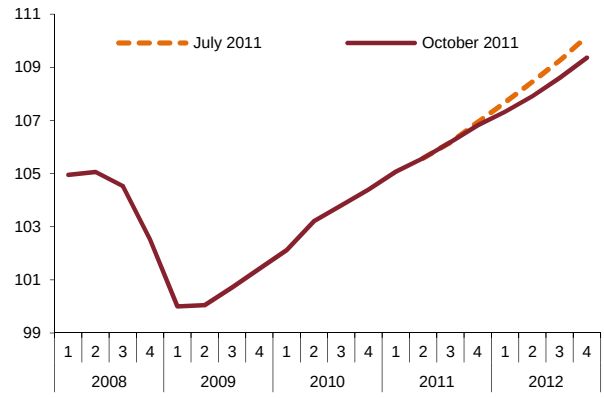
Third-quarter data point to a quarter-on-quarter slowdown in the final domestic demand. Production of consumption goods followed a flat course, while imports of consumption goods declined. Moreover, developments in consumer confidence index also point to a slowdown in the third quarter.

Leading indicators suggest that the observed slowdown in the third quarter will remain temporary, and that the economic activity will assume a mild course of growth. BTS order indicators as well as PMI order and production indicators signal that economic activity will maintain its mild growth without any contraction in the forthcoming period. Aggregated indices of selected leading indicators of economic activity also suggest that the contraction in the third quarter will be temporary (Chart 4.1.10).

Second-quarter data on external demand was worse than the outlook presented in the July Inflation Report. Leading indicators for the U.S. suggest that the mild course of growth in the second quarter of 2011 continued into the third quarter. On the other hand, concerns over the sovereign debt sustainability problems in the euro area countries were further intensified in the third quarter, and the spillover of these problems into the banking sector caused a loss of confidence. Leading indicators for the euro area point to a more pronounced slowdown in growth in the third quarter. This led to a decline in the global risk appetite, and even though remaining relatively limited, adverse effects were already materialized on emerging economies. Thus, in the last quarter, global economic growth decelerated significantly, especially in advanced economies, thus causing a downward revision in global growth forecasts for 2011-2012. Accordingly, projections for export-weighted global growth index for

Turkey were revised downwards. Hence, external demand outlook was also revised downwards given the baseline scenario forecasts assuming a slower recovery in external demand than the previous reporting period, (Chart 7.1.2).

Chart 7.1.2.
Export-Weighted Global Economic Activity Index*
(2009Q1=100)



* For methodology, see Inflation Report 2010-II, Box 2.1 "Foreign Demand Index for Turkey".
Source: Bloomberg, Consensus Forecasts, CBRT.

In sum, amid the better-than-envisaged economic activity in the second quarter, the output gap was revised upwards for the short term, and downwards thereafter. While leaving the 2011 year-end inflation forecast virtually unchanged, this revision pulled down the 2012 year-end forecast by 0.2 percentage points.

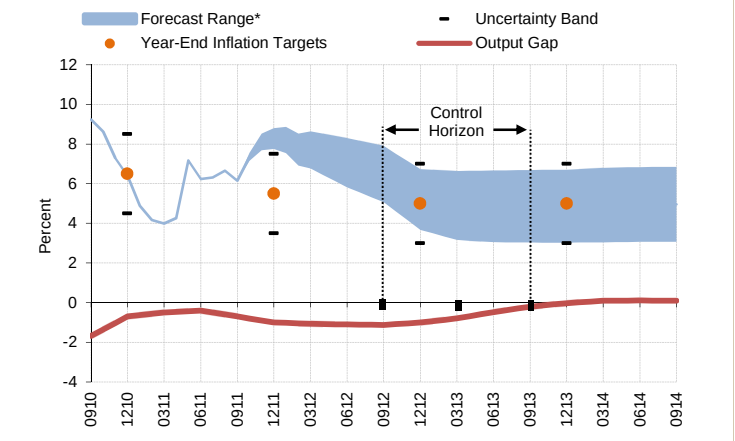
In building medium-term inflation forecasts within the inflation targeting framework, the CBRT uses not only policy rates, but a policy mix also encompassing required reserve ratios and other liquidity management tools. Under this setting, the impact of the policy mix on monetary and financial conditions is observed essentially through the credit channel. Thus, inflation forecasts are based on certain assumptions about credit growth. Accordingly, both the decisions of the CBRT and the arrangements by the BRSA on various loans were influential on the slowdown of credit growth in the third quarter. In this context, annual credit growth rate in the third quarter converged to desirable levels in terms of macroeconomic and financial stability. Correspondingly, the medium-term projections are based on the assumption that the year-end credit growth adjusted for exchange rate would reach nearly 25 percent as envisaged, owing to the tightening effects of the ongoing monetary and fiscal policies in addition to the effects of the BRSA's measures on consumer loans.

Lastly, the fiscal policy outlook is based on the MTP projections revised in October 2011. Accordingly, the baseline scenario envisages that the contribution of the public spending to domestic demand would gradually decline. In other words, the public sector is expected not to exert an inflationary pressure on aggregate demand. In addition, our forecasts are also based on our previous assumption that the risk premium remains virtually unchanged. Moreover, tax adjustments and administered prices are assumed to be consistent with inflation targets and automatic pricing mechanisms.

7.2. Medium-Term Outlook

According to the assumptions and projections in the preceding Chapter, assuming that annual rate of credit growth decelerates gradually, and monetary conditions are tightened significantly in the final quarter in line with the policy measures taken in October, inflation is expected to be, with 70 percent probability, between 7.8 and 8.8 percent with a mid-point of 8.3 percent at the end of 2011, and between 3.7 and 6.7 percent with a mid-point of 5.2 percent at the end of 2012. Inflation is expected to stabilize around 5 percent in the medium term (Chart 7.2.1).

Chart 7.2.1.
Inflation and Output Gap Forecasts



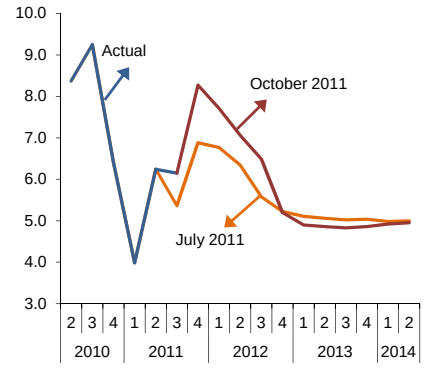
* Shaded region indicates the 70 percent confidence interval for the forecast.

In sum, the year-end forecast for 2011 was significantly revised upwards in the interreporting period (Chart 7.2.2), where this revision was mainly owed to the exchange rate developments and the adjustments in administered prices (Table 1.3.1). It should be highlighted that these factors reflect a temporary change in relative prices rather than a permanent increase in inflation, as the secondary effects will be hindered on the back of the envisioned monetary

tightening in the last quarter owing to the CBRT's recent aggressive policy reaction. Moreover, given the weak outlook for the global economy, the course of commodity prices is also expected to support slowdown inflation. Accordingly, inflation is expected to decelerate gradually starting from early 2012, nearing target by the end of 2012 (Chart 7.2.1).

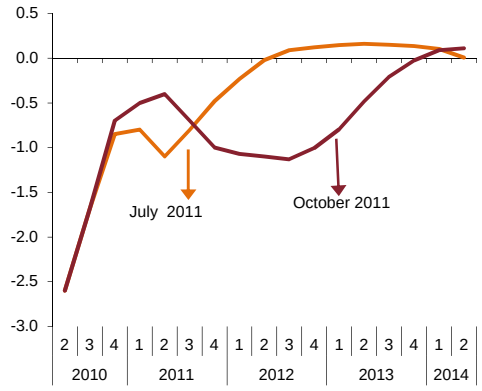
Comparison of July 2011 and October 2011 Inflation Report Forecasts

Chart 7.2.2.
Inflation Forecast



Source: TurkStat, CBRT.

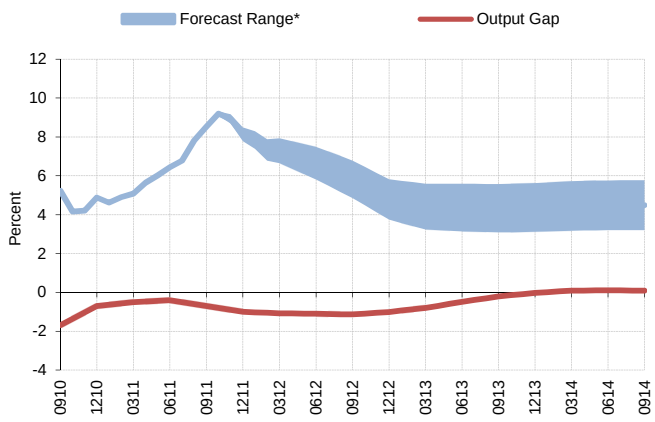
Chart 7.2.3.
Output Gap Forecast



Source: CBRT.

Unpredictable fluctuations in items that are beyond the control of the monetary policy, such as unprocessed food, tobacco and alcoholic beverages, are among major factors causing deviations in inflation forecasts. Hence, inflation forecasts excluding unprocessed food, tobacco and alcoholic beverages are also publicly shared. Forecasts are based on the assumption that for end-2011, annual unprocessed food inflation will be 6 percent, while the annual rate of increase in the prices of tobacco and alcoholic beverages will be 15.3 percent amid the recent tax adjustments. Accordingly, the inflation forecast excluding unprocessed food, tobacco and alcoholic beverages is depicted in Chart 7.2.4. The inflation indicator, measured as above, is expected to fall gradually as of the last quarter of 2011, and stabilize around 5 percent in the medium term (Chart 7.3.4).

Chart 7.2.4.
Inflation Forecast Excluding Unprocessed Food, Tobacco and Alcoholic Beverages



* Shaded region indicates the 70 percent confidence interval for the forecast.

It should be emphasized that any new data or information regarding the inflation outlook may lead to a change in the monetary policy stance. Therefore, assumptions regarding the monetary policy outlook underlying the inflation forecast should not be perceived as a commitment on behalf of the CBRT.

Comparison of the CBRT Forecasts with Inflation Expectations

It is critical that economic agents, being aware of the temporary factors, should focus on the course of medium-term inflation, and therefore, take the inflation target as a benchmark in their pricing plans and contracts. In this respect, to serve as a reference guide, CBRT's current inflation forecasts should be compared to inflation expectations of other economic agents. Year-end inflation expectations as well as 12-month and 24-month ahead inflation expectations of the Survey of Expectations' respondents are above our baseline scenario forecasts (Table 7.3.1).

Table 7.3.1.
CBRT Inflation Forecasts and Expectations

	CBRT Forecast	CBRT Survey of Expectations*	Inflation Target**
2011 Year-end	8.3	8.01	5.5
12-Month Ahead	6.1	6.84	5.1
24-Month Ahead	4.9	6.28	5.0

*October 2011, second survey period results.
** Calculated by linear interpolation of year-end inflation targets for 2011- 2013.
Source: CBRT.

7.3. Risks and Monetary Policy

The fact that inflation will hover above target in the short term poses risks regarding inflation expectations and pricing behavior. As of October, the CBRT has adopted a policy stance aiming to eliminate these risks. These risks will be closely monitored in the upcoming period as well, and necessary measures will be taken to avoid deterioration in the inflation outlook.

The medium-term outlook of the Report assumes that global economic activity will stay weak for a long period with no further worsening in the current circumstances. Nevertheless, uncertainties regarding the global economy remain crucial. In particular, escalating problems of the euro area economies regarding sovereign debt continue to pose downside risks on the global economy. Concerns regarding the debt sustainability problems in the EU were further intensified in the interreporting period, and perceptions about a possible spillover of these problems to the banking sector in the region were heightened. The probability for a failure to solve the banking sector problems in the euro area as well as the further deepening of the global problems via a possible spread constitute a major risk factor. In order to maintain stability in the domestic markets, the CBRT will continue to take the required measures promptly by closely monitoring the global developments in line with the strategy formulated at the interim meeting of August 4, 2011.

The CBRT will continue to monitor fiscal policy developments closely while formulating monetary policy. The baseline scenario forecasts of the Report are based on the MTP framework, therefore fiscal discipline is assumed to be maintained. A revision in the monetary policy stance may be considered, should the fiscal stance deviate significantly from this framework, and consequently, have an adverse effect on the medium-term inflation outlook.

In the period ahead, monetary policy will continue to focus on achieving price stability on a permanent basis, while observing financial stability. To this end, the impact of the macroprudential measures taken by the CBRT and other relevant institutions on the inflation outlook will be assessed carefully. Maintaining fiscal discipline in the medium term and strengthening the structural reform agenda will contribute to the relative improvement of Turkey's sovereign risk, thereby supporting macroeconomic stability and price stability. Maintaining fiscal discipline will also provide room for monetary policy maneuver, and

support the social welfare by keeping interest rates permanently at low levels. In this respect, steps to be taken in order to implement the structural reforms envisaged by the recently announced MTP remains to be of utmost importance.

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3.2. An Evaluation of Core Inflation Indicators
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7.1. Financial Stability Under Inflation Targeting: The CBRT's Actions
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3.1. Changes in Wheat Prices and Their Effects on Consumer Prices
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7.1. Import Price Projections

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5.2. Banks' Loans Tendency Survey and Changes in Loans
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4.1. Update of National Accounts Data
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2008-I

2.1. A Brief Overview of the Appreciation of Yuan and Its Likely Results

2007-IV

5.1. Yield Curves and Monetary Policy Decisions

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3.1. Recent Price Developments in Agricultural Raw Materials
4.1. Structural Change in the Export Performance of Turkey After 2001

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3.1. Wages and Services Inflation
5.1. Information Contained in the Inflation-indexed Bonds about Inflation Expectations

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3.1. The Course of Durable Goods Prices fter May
3.2. Chinese Effect on Domestic Prices
6.1. Treasury's 2007 Financing Program

2006-IV

2.1. Results from a Structural VAR Analysis of the Determinants of Capital Flows into Turkey
2.2. Commodity Markets
7.1. Inflation Targeting Regime, Accountability and IMF Conditionality

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3.1. Behavior of Price Level and Inflation in Case of Likely Shocks
4.1. Results of the Survey on Pricing Behaviour of Firms
4.2. Rise in International Energy Prices and Its Effects on Current Account Deficit
5.1. Debt Structures of Companies in Turkey

2006-II

2.1. International Gold Price Developments and Their Effects on the CPI
3.1. Relative Price Differentiation, Productivity and the Real Exchange Rate
6.1. Inflation Targeting Regime, Accountability and IMF Conditionality

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2.1. The use of Special CPI Aggregates in the Measurement of Core Inflation
2.2. The Exchange Rate Pass-through in Turkey: Has the Pass-through Changed with the New CPI Index?
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5.1. Commitments about Fiscal Policy
6.1. Inflation Targeting Strategy and Accountability

Abbreviations

AMA	Automotive Manufacturers Association
bbl	barrel
BRSA	Banking Regulation and Supervision Agency
BTS	Business Tendency Survey
CBRT	Central Bank of the Republic of Turkey
CDS	Credit Default Swap
CEEMEA	Central Eastern Europe, Middle East and Africa
CPI	Consumer Price Index
ECB	European Central Bank
EFSF	European Financial Stability Fund
EMBI	Emerging Markets Bond Index
EPFR	Emerging Portfolio Fund Research
EU	European Union
Fed	Federal Reserve Bank
FHFA	Federal Housing Finance Agency
FOMC	Federal Open Market Committee
FX	Foreign Exchange
GDBS	Government Domestic Borrowing Securities
GDP	Gross Domestic Product
HLFS	Household Labor Force Survey
ILII	Industrial Labor Input Indices
ISE	Istanbul Stock Exchange
MPC	Monetary Policy Committee
MSCI	Morgan Stanley Capital International
MTP	Medium-Term Program
OECD	Organization for Economic Co-Operation and Development
O/N	Overnight
OPEC	Organization of the Petroleum Exporting Countries
PMI	Purchasing Managers Index
PPI	Producer Price Index
SCA	Special CPI Aggregate
SCT	Special Consumption Tax
SEE	State Economic Enterprises
SME	Small and Medium-Sized Enterprises
S&P	Standard and Poor's
SSI	Social Security Institution
TEA	Turkish Exporters Assembly
TL	Turkish Lira
TurkStat	Turkish Statistical Institute
U.K.	United Kingdom
U.S.	United States
U.S.A.	United States of America
USD	United States Dollar
WGIA	White Goods Industrialists Association of Turkey
VAT	Value Added Tax
VIX	Volatility Index

2011 Calendar of MPC Meetings, Inflation Reports and Financial Stability Reports		
Monetary Policy Meeting	Inflation Report (in Turkish)	Financial Stability Report (in Turkish)
January 20, 2011 (Thursday)	January 25, 2011 (Tuesday)	
February 15, 2011 (Tuesday)		
March 23, 2011 (Wednesday)		
April 21, 2011 (Thursday)	April 28, 2011 (Thursday)	
May 25, 2011 (Wednesday)		May 30, 2011 (Monday)
June 23, 2011 (Thursday)		
July 21, 2011 (Thursday)	July 28, 2011 (Thursday)	
August 23, 2011 (Tuesday)		
September 20, 2011 (Tuesday)		
October 20, 2011 (Thursday)	October 26, 2011 (Wednesday)	
November 23, 2011 (Wednesday)		November 29, 2011 (Tuesday)
December 22, 2011 (Thursday)		