

## 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

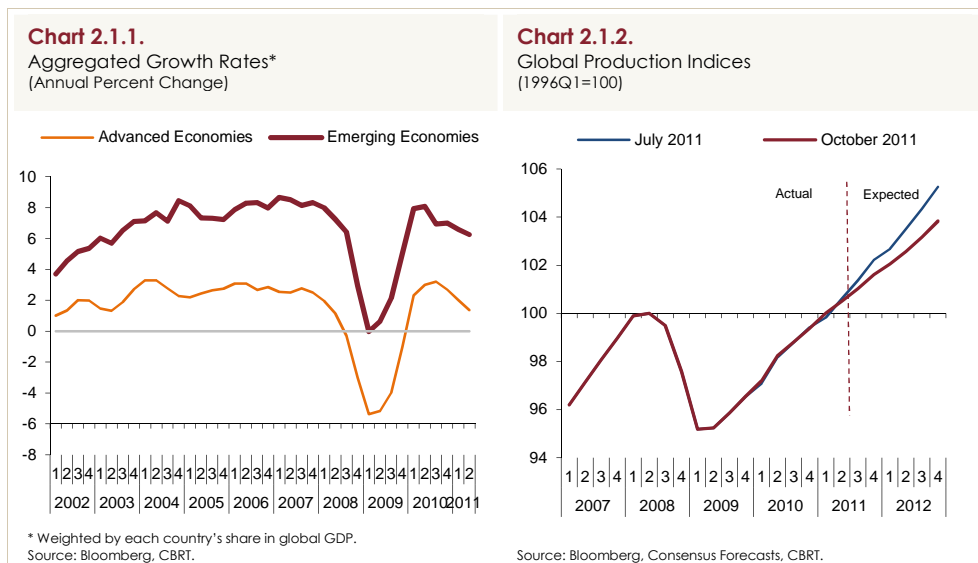
our major trading partner are estimated to have an adverse effect on Turkey's external demand.

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.

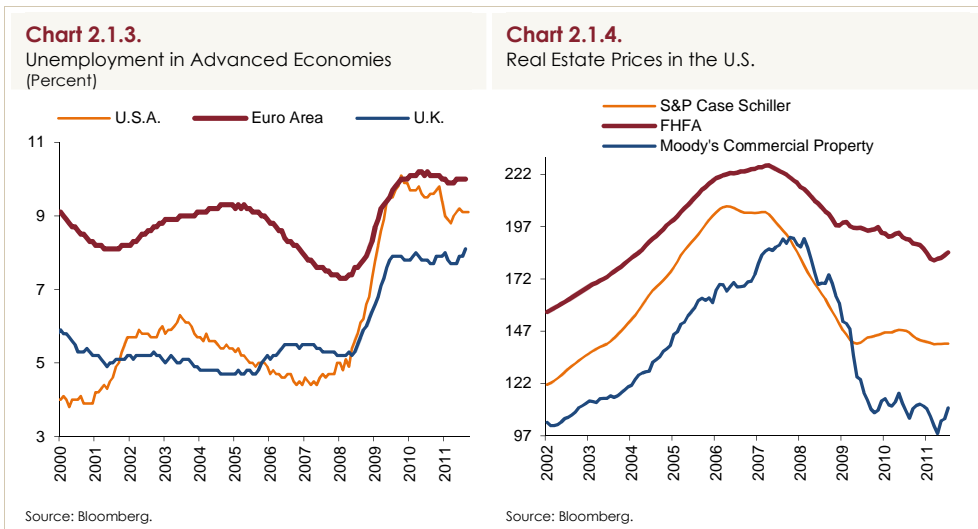
The downtrend in commodity prices that was manifested at the end of April continued through the last quarter. Demand growth expectations were revised downwards amid the slowdown in global economic activity. However, the occasional supply-side setbacks, particularly in crude oil and agricultural products,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

## 2.1. Global Growth

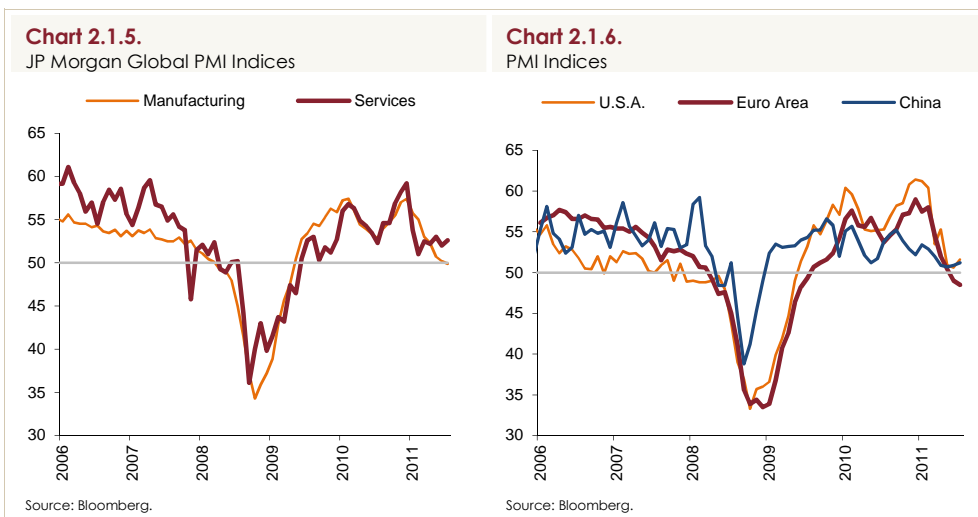
Global economic growth slowed down remarkably in the second quarter. It is notable that the slowdown is more pronounced in advanced economies than emerging economies. Export-weighted global production index, which exceeded its pre-crisis level in the second quarter of 2011, also points to a weaker external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



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).



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).



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.

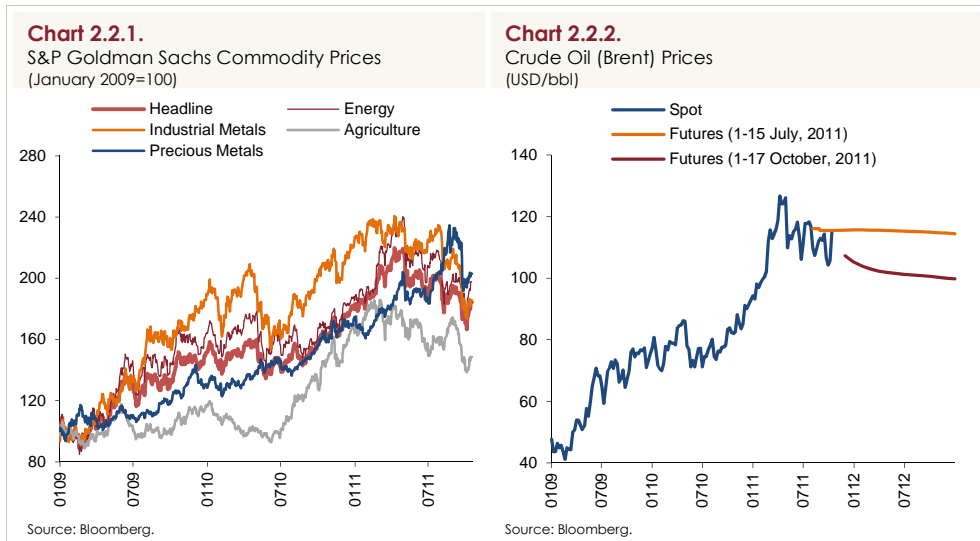
**Table 2.1.1.**Growth Forecasts  
(Annual Percent Change)

	2011		2012	
	July	October	July	October
World	3.2	3.0	3.6	3.0
<i>Advanced Economies</i>				
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
<i>Emerging Economies</i>				
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).



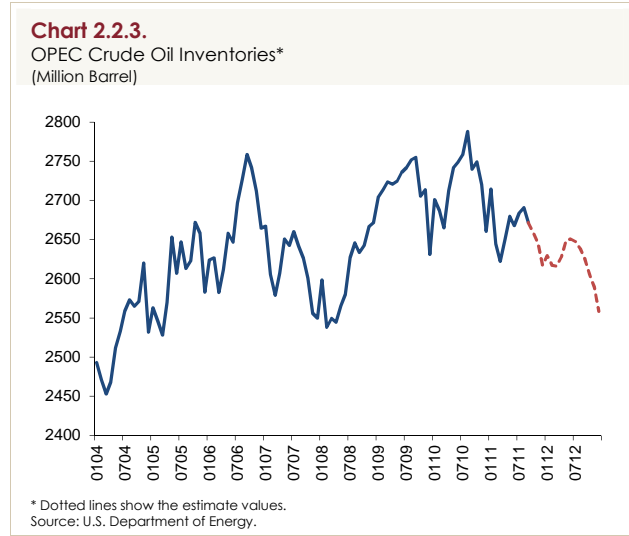
Downward revisions to global growth forecasts in the third-quarter brought about a revision in the demand for crude oil. The IEA forecast for 2011 daily crude oil demand was revised downward by 0.4 million barrel since the January Inflation Report (Table 2.2.1). Even though crude oil prices saw a decline 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
<b>DEMAND</b>		
2010	87.7	88.3
2011	89.1	89.3
2011 Demand Increase	1.4	1.0
<b>SUPPLY (NON-OPEC)</b>		
2010	52.8	52.6
2011	53.4	52.8
2011 Supply Increase	0.6	0.2
<b>SUPPLY (OPEC)</b>		
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).



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

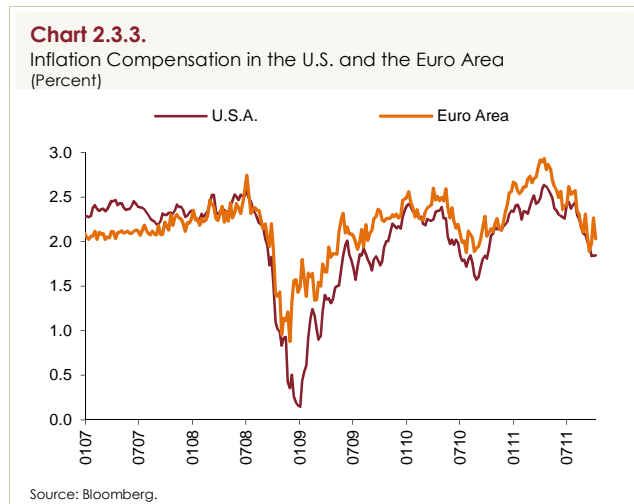
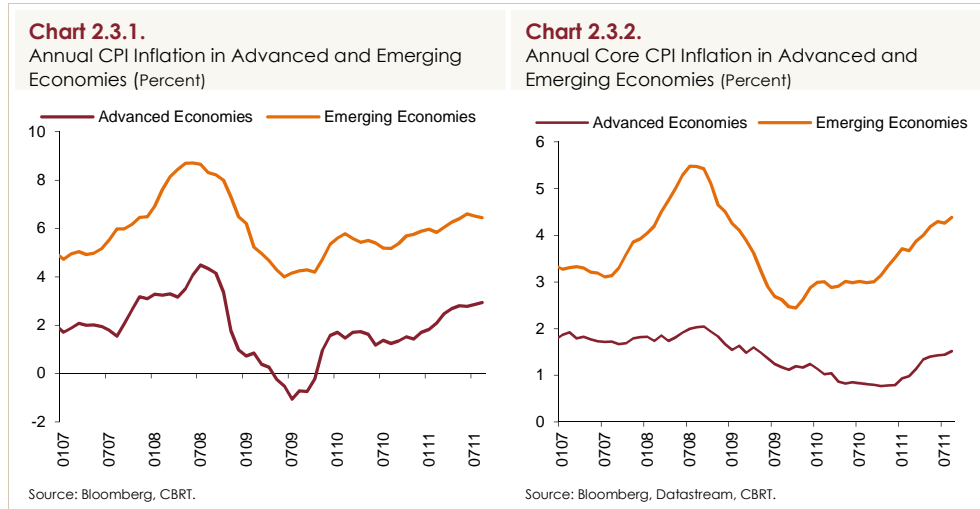
	2009/2010	2010/2011	2011/2012
<b>WHEAT (million tons)</b>			
Initial Inventory	167.1	200.8	195.6
Production	684.4	648.2	681.2
Consumption	650.8	653.3	674.4
Period-end Inventory	200.8	195.6	202.4
<b>CORN (million tons)</b>			
Initial Inventory	147.2	143.9	129.8
Production	819.4	828.3	860.0
Consumption	822.7	842.4	866.7
Period-end Inventory	143.9	129.8	123.2
<b>COTTON (million bales)</b>			
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.



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
<i>Advanced Economies</i>				
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
<i>Emerging Economies</i>				
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.

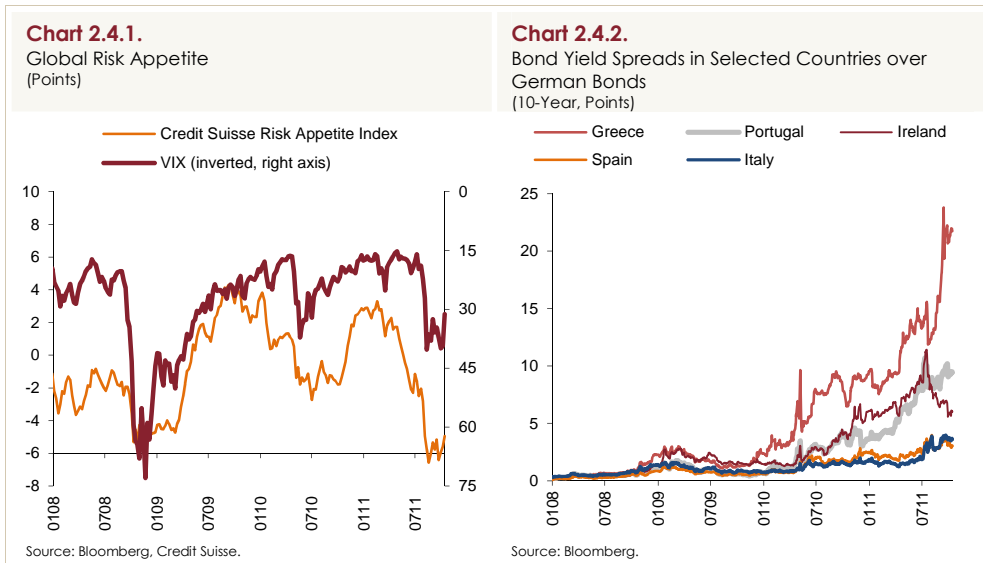
Source: Consensus Forecasts.

## 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 entailing 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).

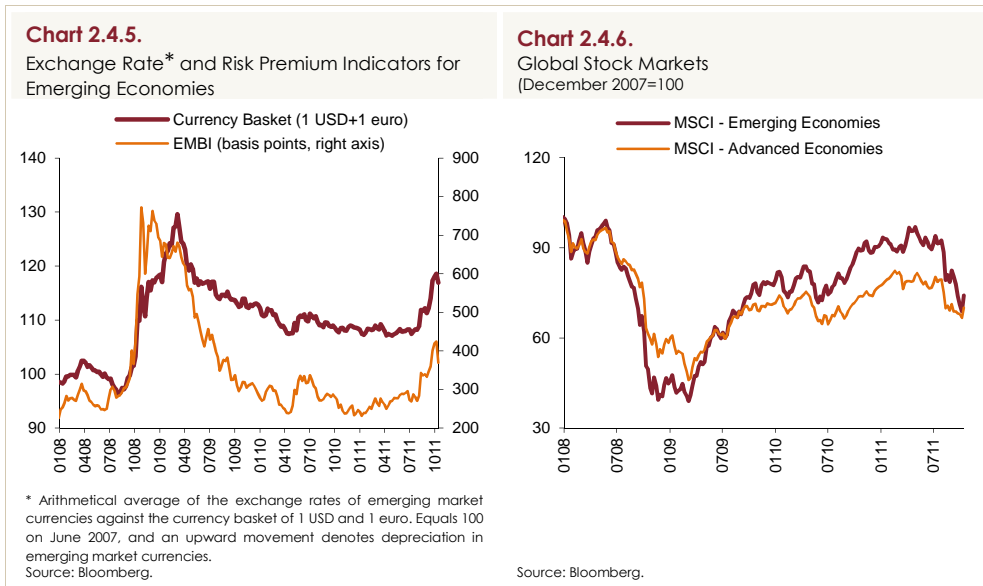




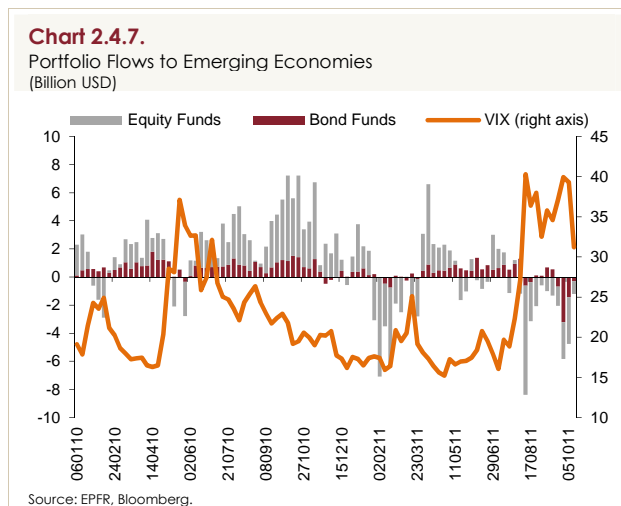
The risks brought about by the debt crisis also had an adverse effect on the European banking sector, and banking sector CDS rates increased sharply, while credit ratings of various banks were lowered (Chart 2.4.3). Against these developments, counterparty risk in the banking sector as well as the TED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



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).

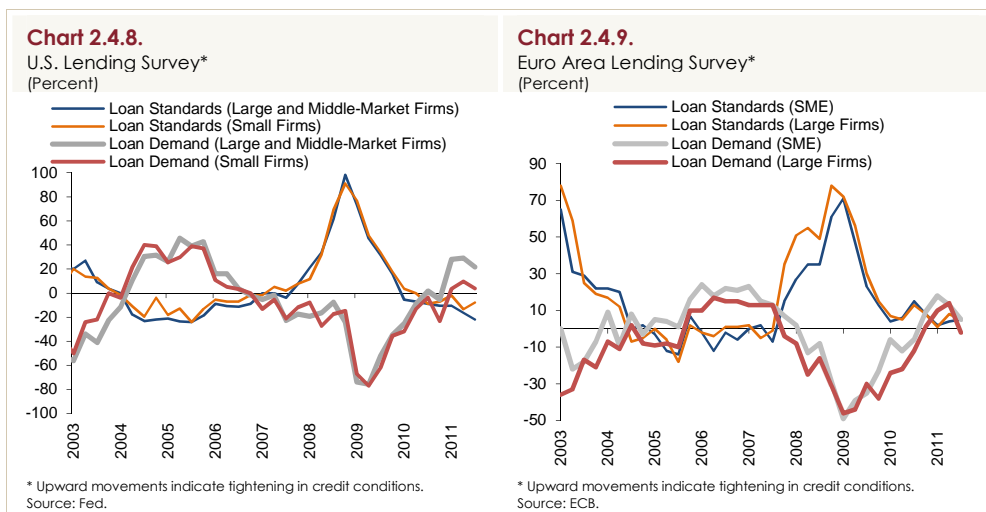


As for the portfolio flows, inflows for borrowing securities posted a significant quarter-on-quarter decline and stock funds saw tremendous outflows (Chart 2.4.7). Even though, the interest rate differentials between advanced and emerging economies, as well as growth expectations, bolster capital inflows 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.<sup>1</sup>



<sup>1</sup> IMF World Economic Outlook September 2011 and IIF Research Note "Capital Flows to Emerging Market Economies", dated September 25, 2011.

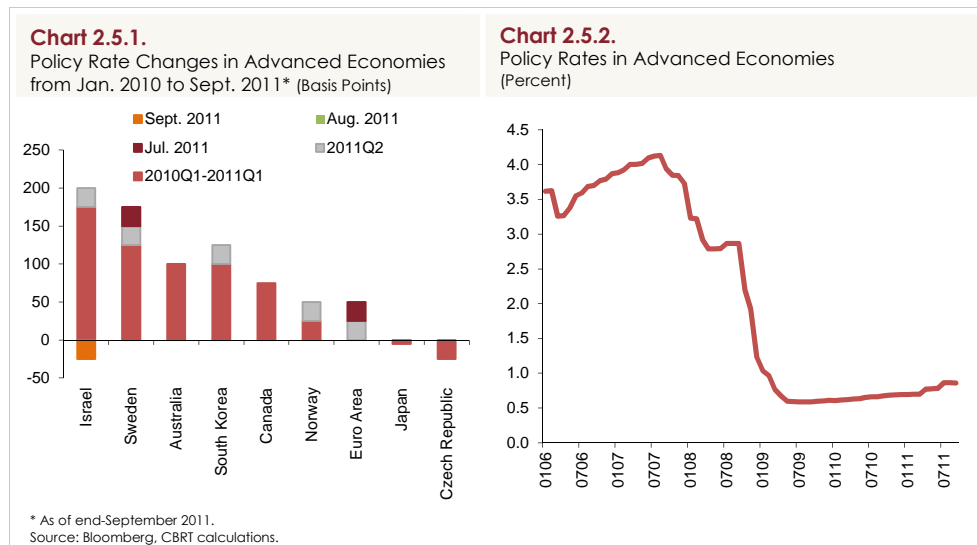
An analysis of credit markets suggests that according to the results of the Fed's Lending Survey, easing in credit conditions displayed no significant change, while the uptrend in credit demand lost pace (Chart 2.4.8). Meanwhile, problems in the euro area had a negative impact on credit markets as well. 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).



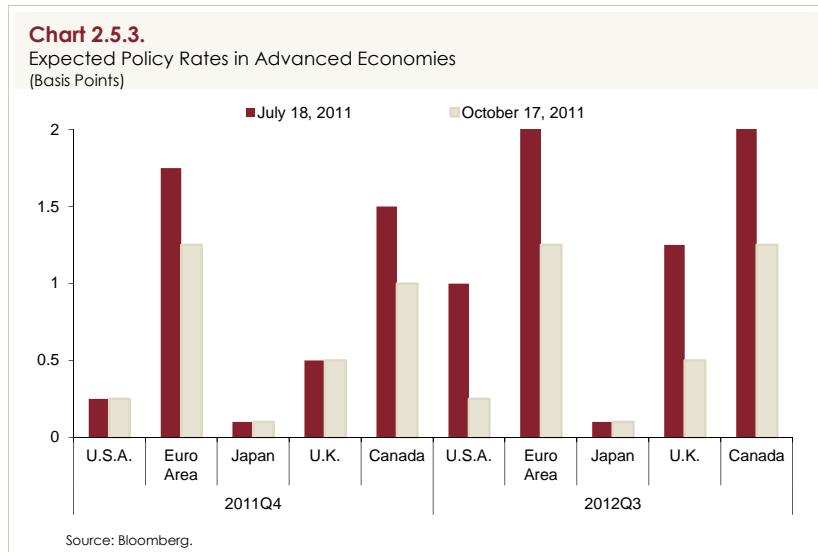
## 2.5. Global Monetary Policy Developments

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.

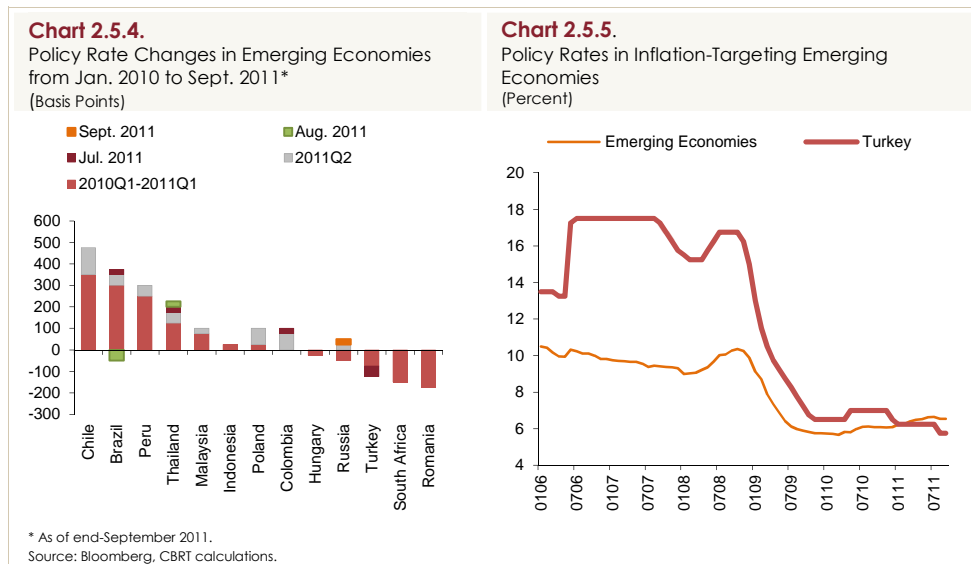
In the last Report, it was stated that the policy rates had started to normalize in advanced economies amid the post-crisis recovery in some advanced economies. Indeed, the policy rate hike cycle launched by some major central banks in the second quarter also continued throughout the early third quarter, 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 2.5.1 and 2.5.2).



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.



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.



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.



Box  
2.1

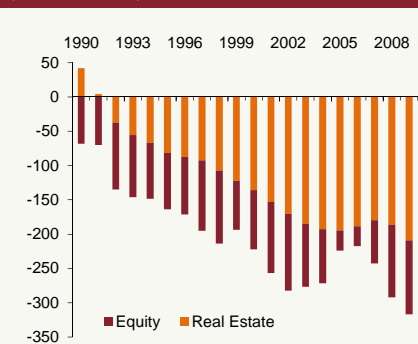
Balance Sheet Recessions: A Comparison between Japan and the U.S.

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.

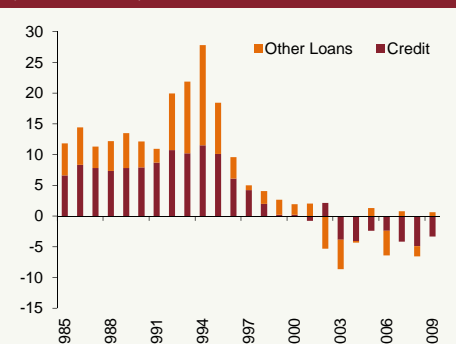
While Japanese economy was growing rapidly with significant contribution from investment expenditures at end 1980s, the growth in the real sector was accompanied by accumulated fragilities in the financial sector. Starting from 1989, stock prices, which had been soaring in tandem with foreign investment 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

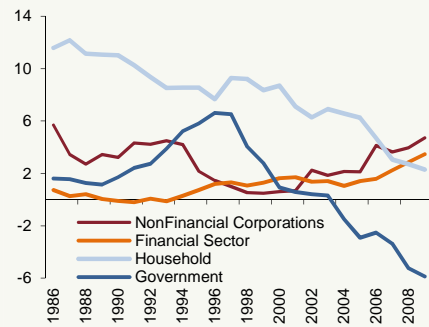
**Chart 2. Real Sector Borrowing in Japan**  
(Percent of GDP)



Source: www.esri.cao.go.jp

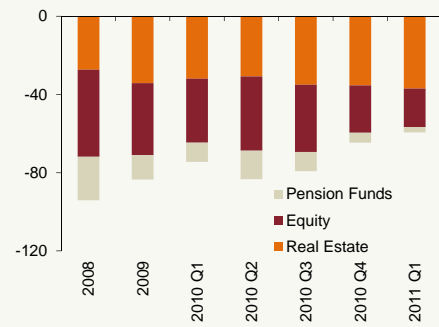
Having caught by the crisis with a high leverage ratio, the corporate sector has been net debt re-payer due to damage in the balance sheets even at periods of practically zero interest rates (Chart 2). This attitude was reflected as a deflationary demand gap on aggregate. In such a case of diminished 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

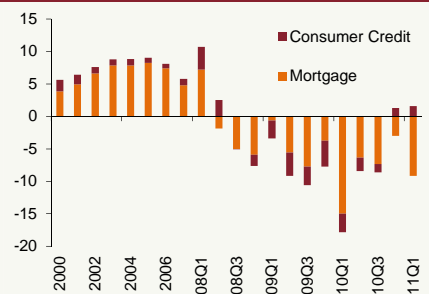
**Chart 4. Accumulated Wealth Loss in the U.S.**  
(Percent of GDP)



Source: www.federalreserve.gov

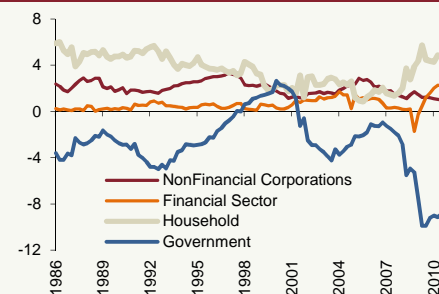
As for the U.S., the crisis, which was manifested amid the problems in the subprime market due to declining housing prices, spreaded across the globe with the bankruptcy of Lehman Brothers in October 2008. By the second half of 2011, housing prices had fallen by 32 percent from the peak of 2006, whereas 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<sup>2</sup> 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.

<sup>2</sup> 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.<sup>3</sup> The results of this solution using alternative interest and growth rates are displayed in Tables 2 and 3, respectively.

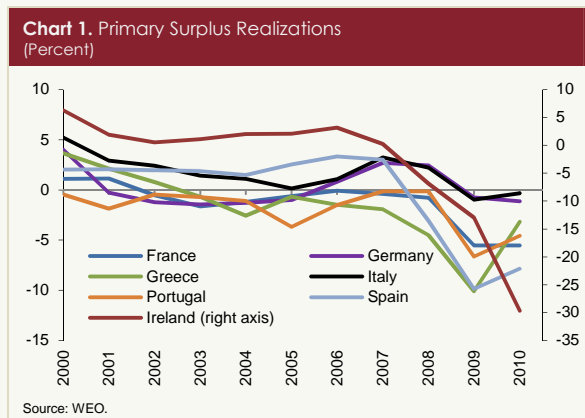
<sup>3</sup> Debt stock dynamics equation is taken from Değerli and Keleş(2011).

**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).



A comparison between the current analysis and the one constructed by August rates and the April 2011 growth forecasts of the IMF<sup>4</sup> 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.

<sup>4</sup> 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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Box  
2.3

## Real Effective Exchange Rate Indicators for Turkey

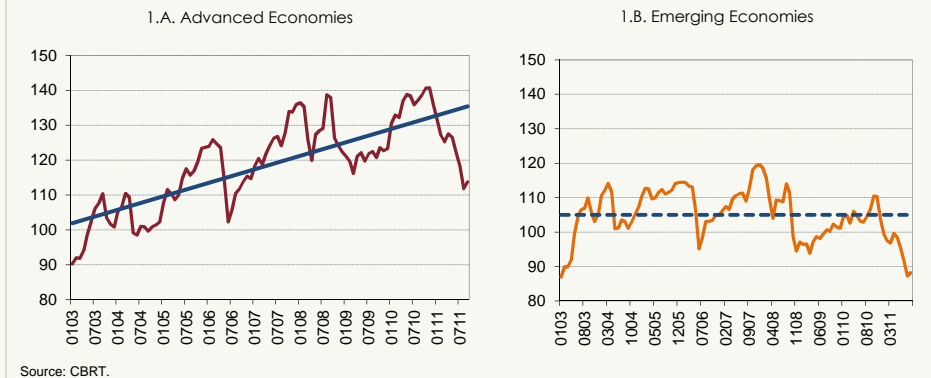
The real effective exchange rate is used to understand the level and the change in the prices of a product basket in a country relative to other countries in the comparison group. The movements in the real effective exchange rate can also provide information about the changes in the competitiveness of 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.

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

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)**

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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