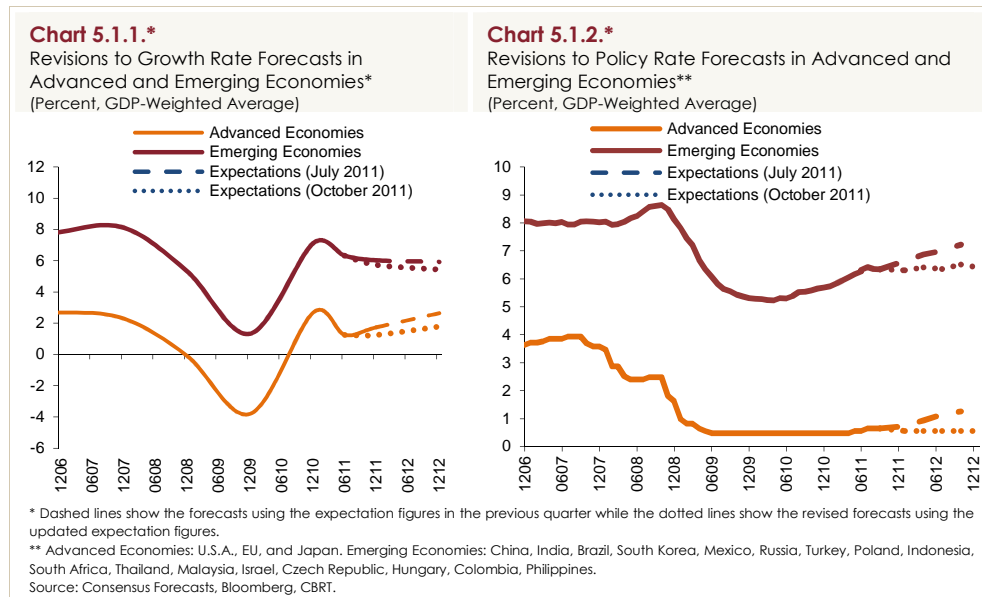


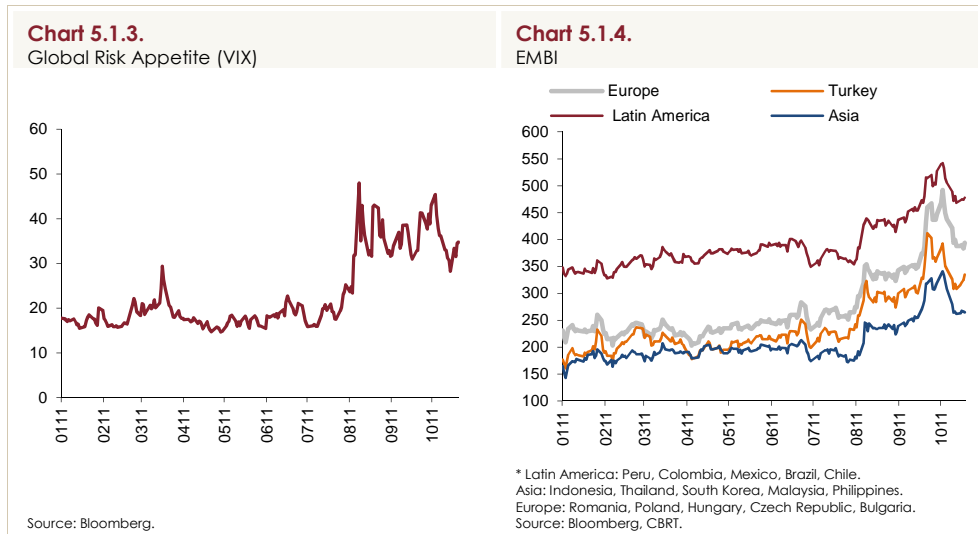
5. Financial Markets and Financial Intermediation

5.1. Financial Markets

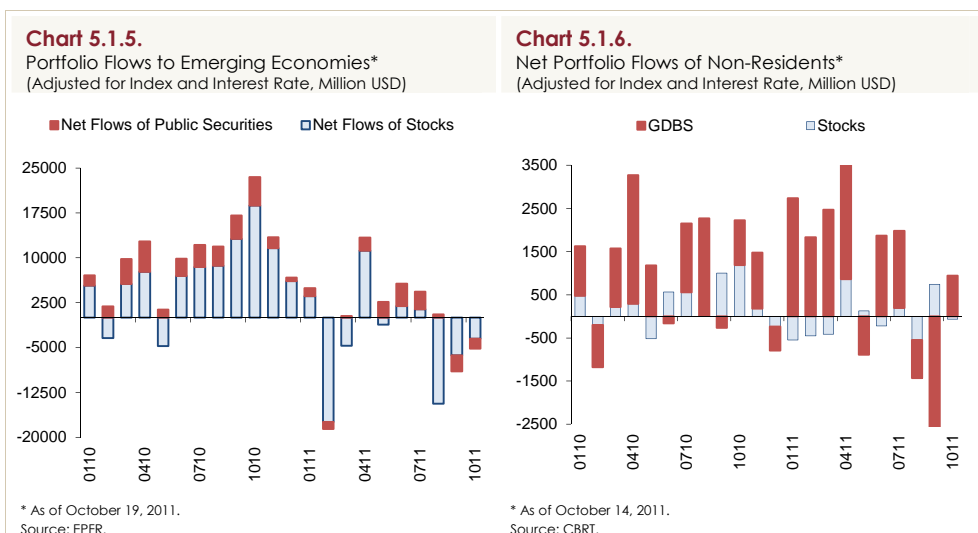
The third-quarter data indicate a slowdown in the global economic growth and an increase in downside risks. Mounting concerns over sovereign debt problems in the euro area coupled with their spillover into the banking sector caused these downside risks to become more pronounced. In addition to the problems 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).



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).

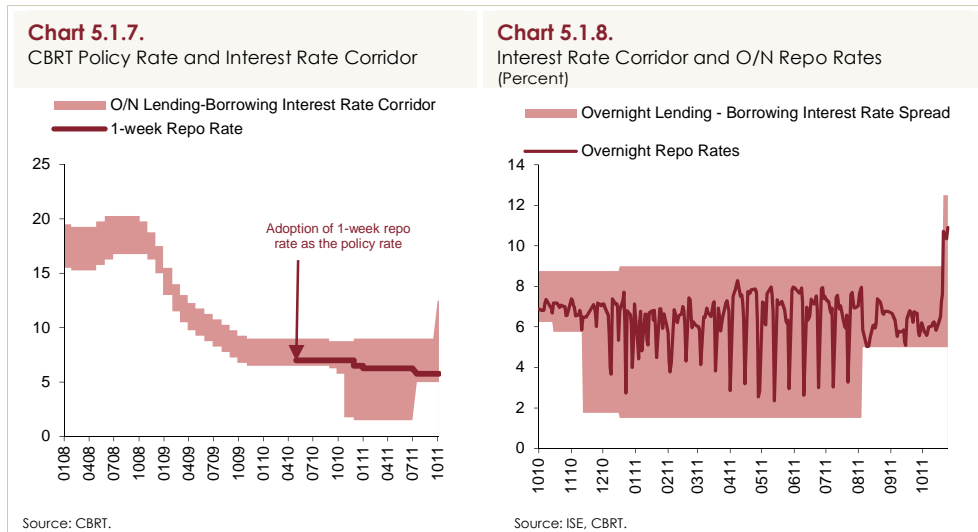


The negative course of global risk perceptions were also influential on capital inflows towards emerging economies as portfolio investments (Chart 5.1.5). More specifically, the decline in growth expectations and the deterioration in risk perceptions led to a fall in portfolio investments, particularly 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).

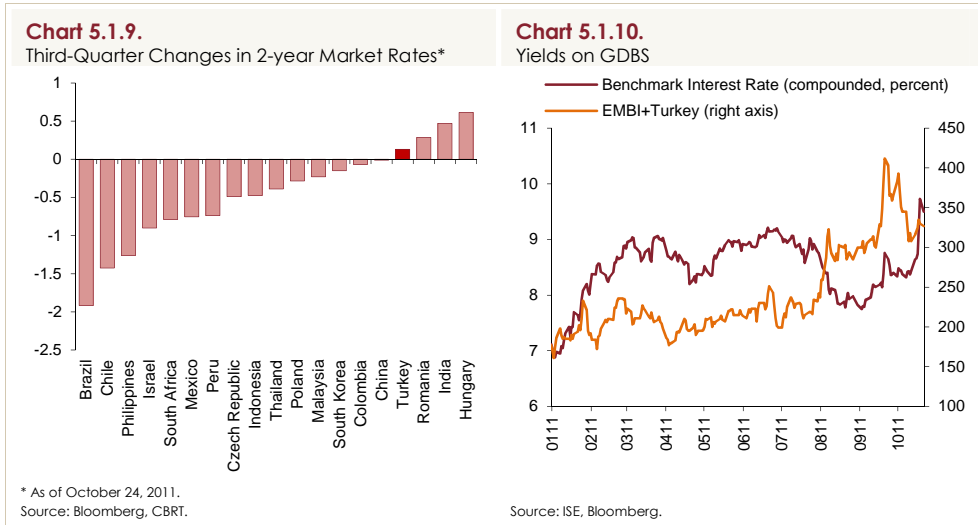


In order to alleviate the risk of recession in the domestic economic activity that can be caused by downside risks on the global economy, the CBRT

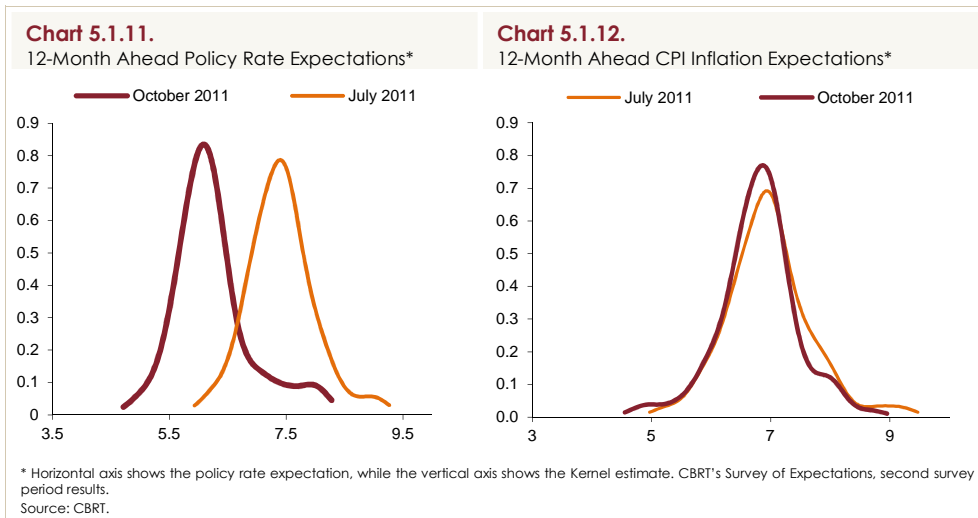
lowered the policy rate by 50 basis points in the interim MPC meeting on August 4 (Chart 5.1.7). In addition, in order to reduce the potential downside volatility in short-term interest rates, the interest rate corridor was narrowed by a 350 basis point increase in the O/N borrowing rate (Chart 5.1.8). 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.



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).

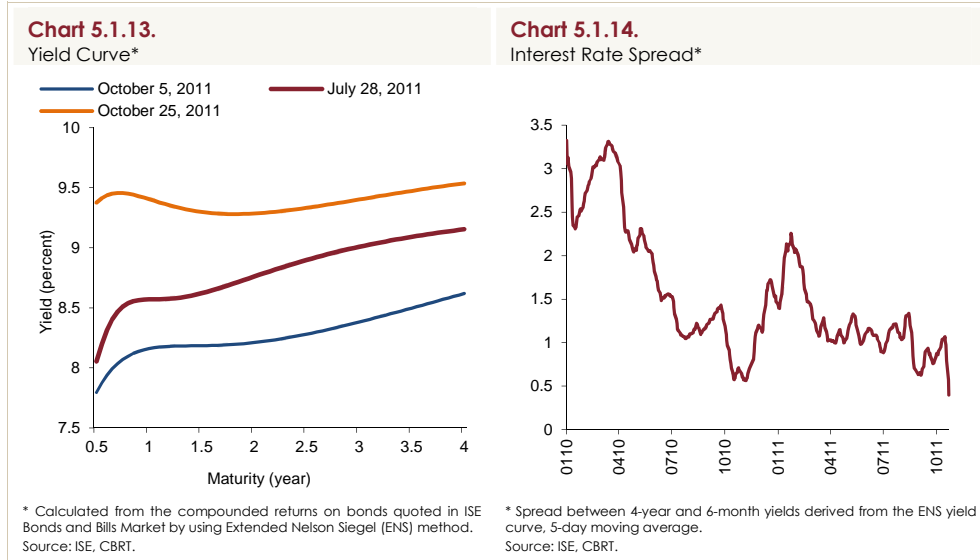


Policy rate expectations, a key determinant of market rates, declined notably in the interreporting period (Chart 5.1.11). CBRT's policy rate reduction in August as well as its remarks on the future monetary policy were influential on this decline. Meanwhile, 12-month-ahead inflation expectations from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

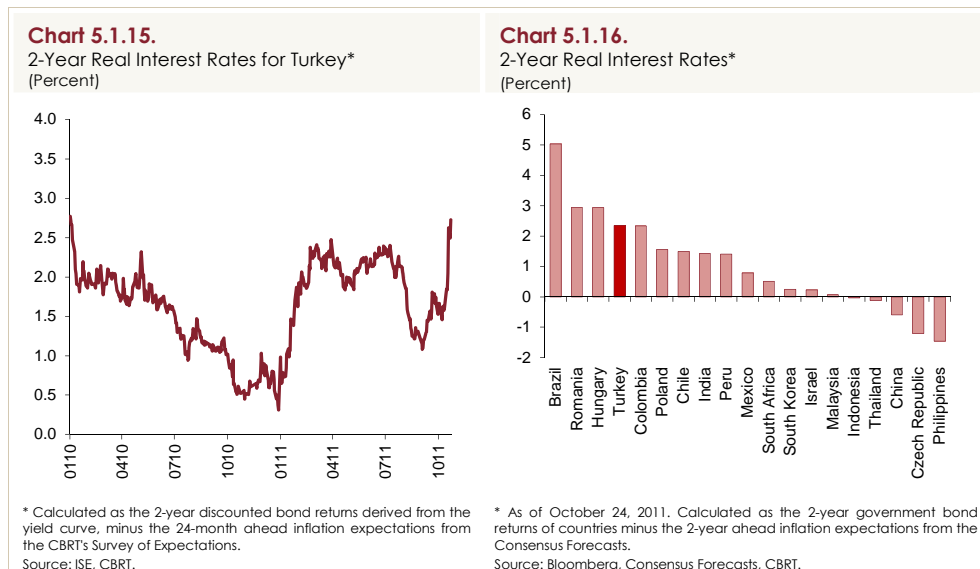


Market rates declined across all maturities as of end-September with a more limited decline in the short-term interest rates (Chart 5.1.13). The decline in long-term interest rates is attributed to the fall in global growth and interest rate expectations. However, due to the deteriorating global risk 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).

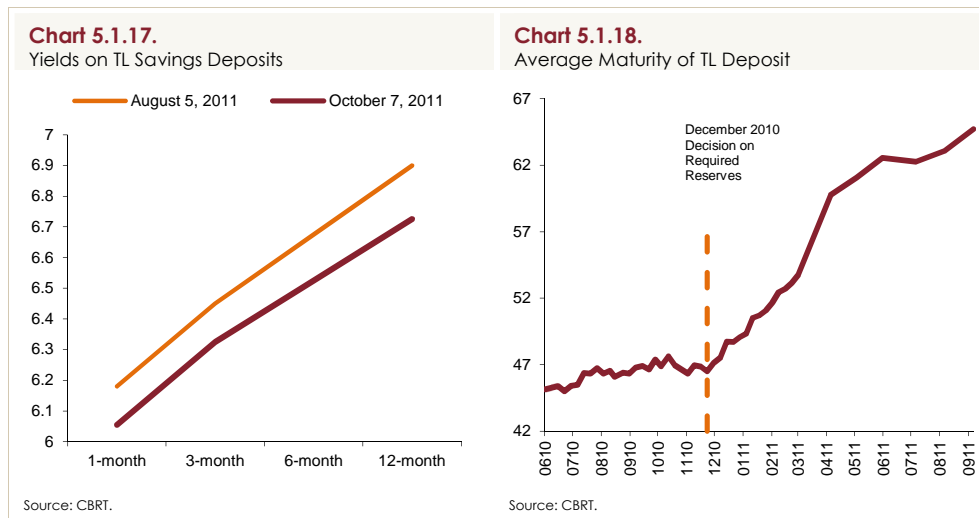


The downtrend in market rates was also reflected on real interest rates during the third quarter. Yet, real interest rates have recently picked up as the surge in interest rates became more evident (Chart 5.1.15). Turkey's real interest rates have declined only slightly compared to other emerging economies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

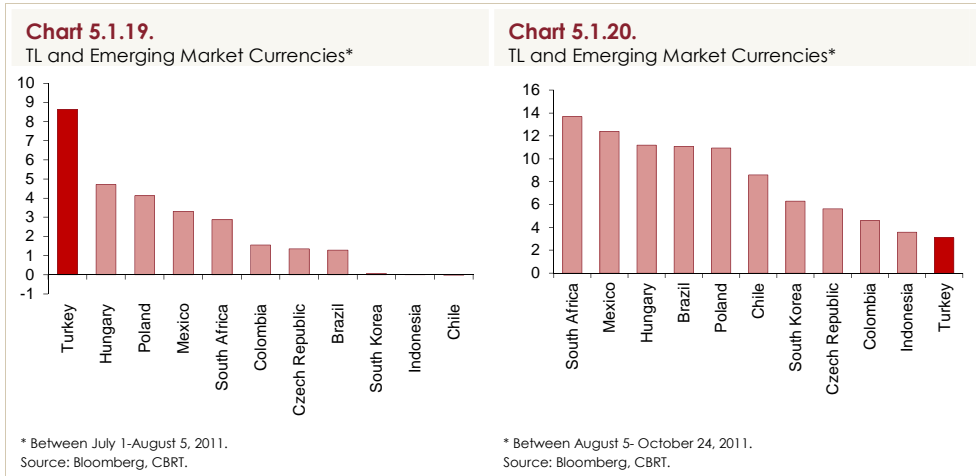


Deposit rates posted a limited decline in the third quarter amid the policy rate reduction and the adopted liquidity measures (Chart 5.1.17). The reduced competition in the deposit market owing to the slowdown of the credit growth

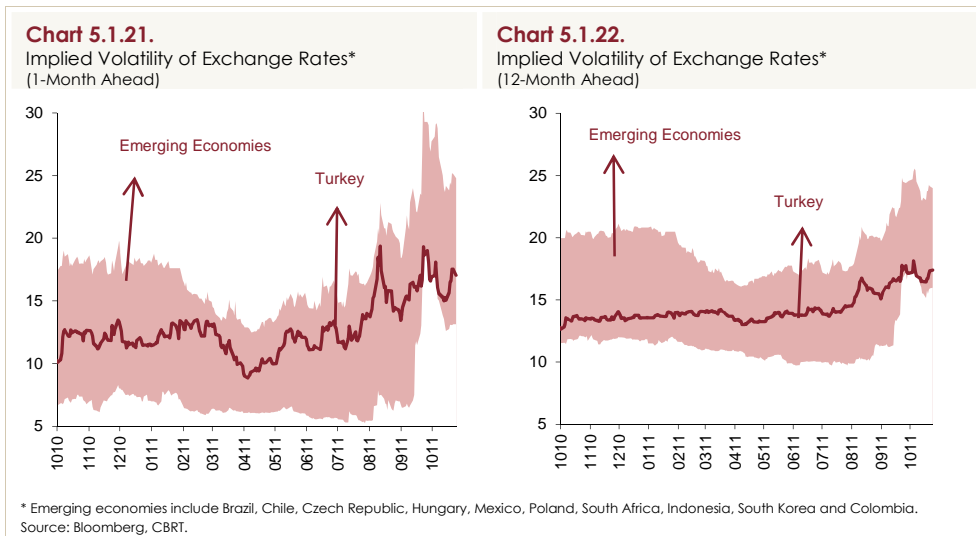
in the last quarter was a key factor in the deposit rate decline. The adopted measures continued to be influential on the maturities of the banking sector liabilities. The average maturity of deposits was extended further in the third quarter (Chart 5.1.18). Moreover, as an incentive to extend the maturity 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.



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).

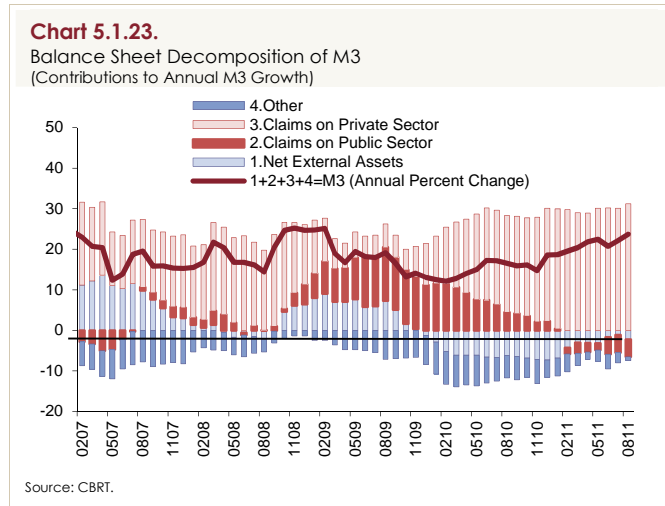


Besides the recent depreciation, the implied volatility of TL also soared rapidly compared to other emerging market currencies. However, subsequent to the adoption of measures by the CBRT in August, the increase in exchange rate volatility remained limited and dropped to relatively low levels both in 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.

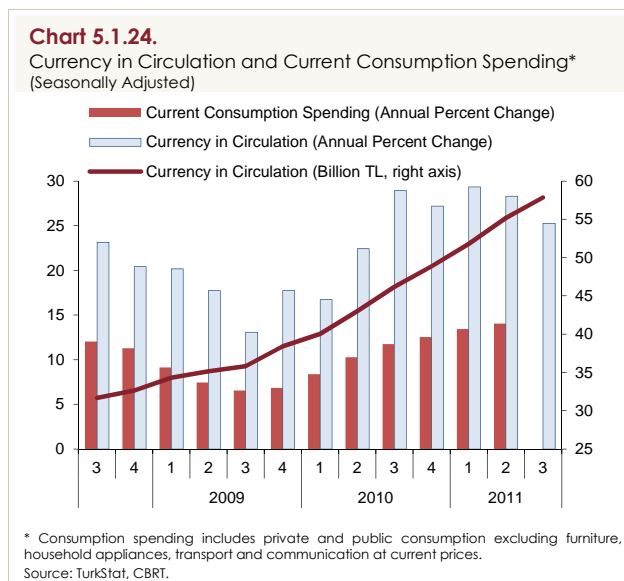


Domestic and external economic climate also continued to weigh on monetary indicators amid the ongoing volatility in the financial markets. In fact, balance sheet decomposition of M3, the broad measure of money supply, points that the surge in Claims on Private Sector, which mostly consist of bank loans 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

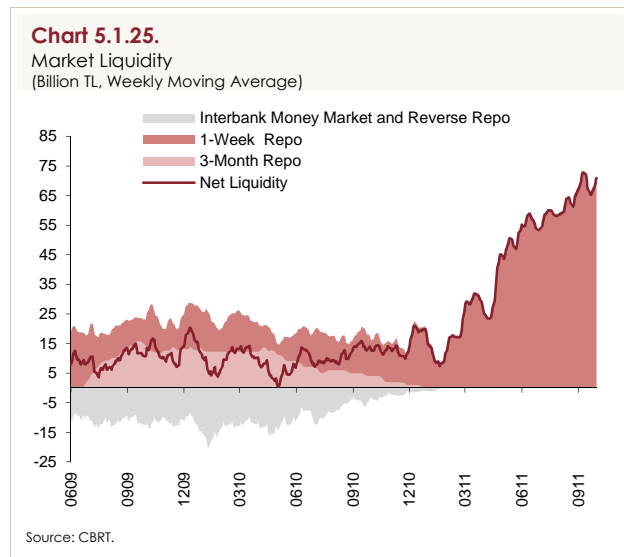
the increase in commercial banks' external borrowing. Lastly, the negative contribution of the item Other, i.e. the monetary sector's non-deposit resources, to the M3 growth decreased amid the year-on-year decline in the bank profitability (Chart 5.1.23).



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.



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.

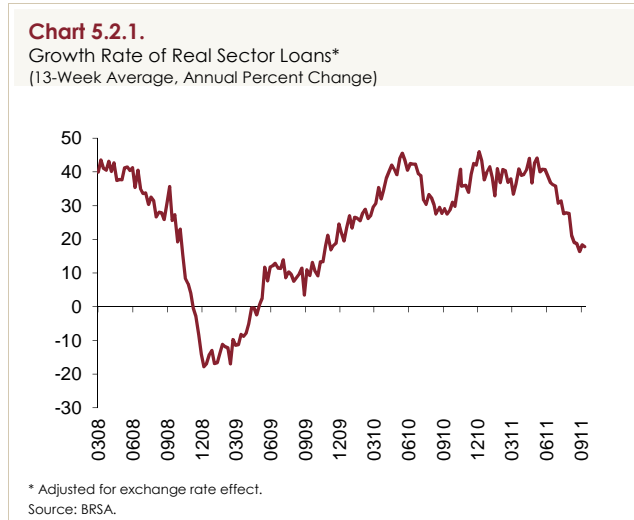


CBRT's FX selling auctions besides the reductions on FX required reserve ratios lowered FX reserves, while the facilitation of holding up to 20 percent of the TL required reserves in foreign currencies in addition to the easing of the utilization of rediscount loans increased FX reserves.

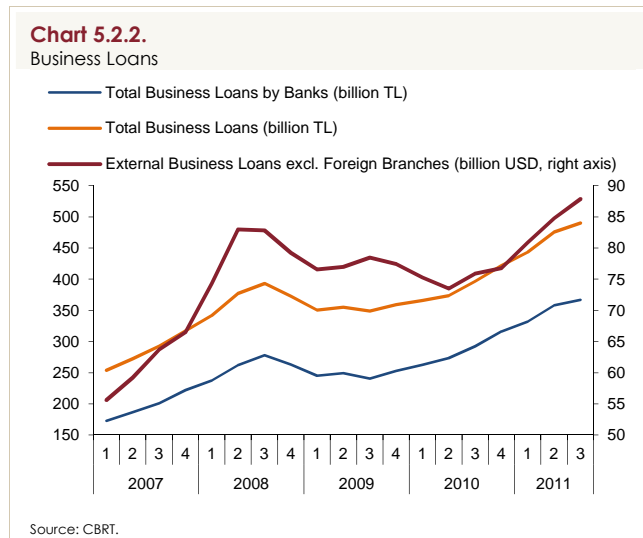
5.2. Financial Intermediation and Loans

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).

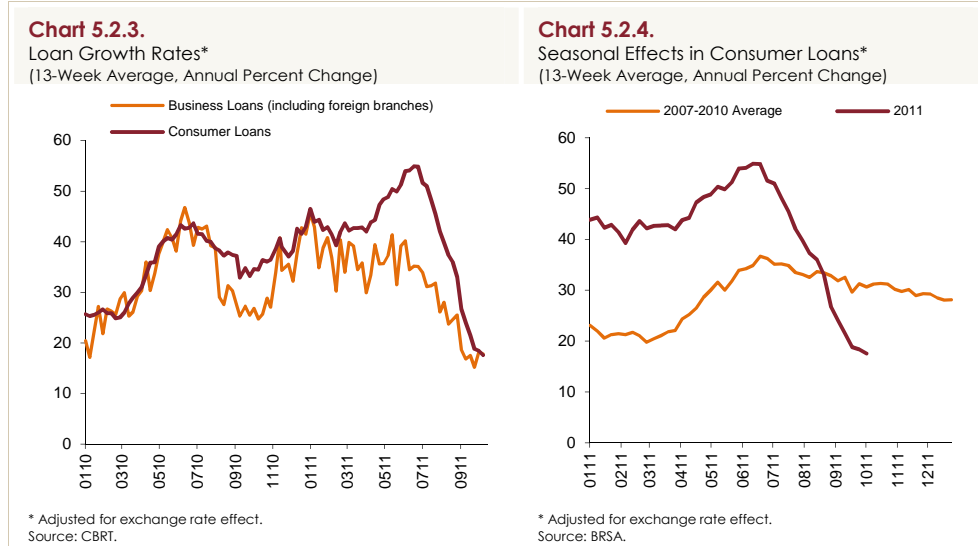


Real sector loans extended by domestic banks plummeted, while loans extended by external institutions and organizations are yet to markedly slow down as of August (Chart 5.2.2).



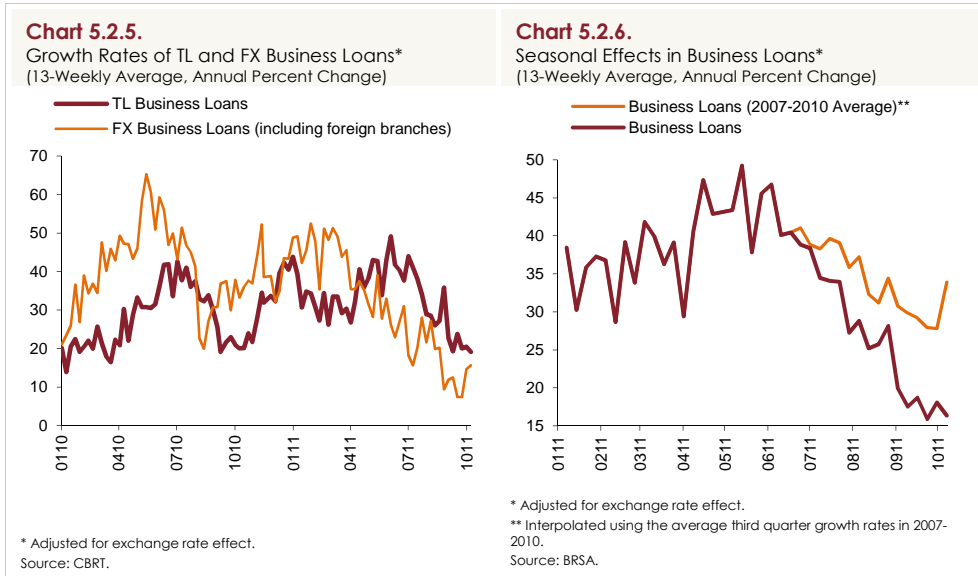
The downtrend in real sector loans in the third quarter was driven by the developments in both business and consumer loans. Annualized data for the second and third quarters suggest that the growth rate of consumer loans went down from 52 percent to 18 percent, and the growth rate of business loans dropped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

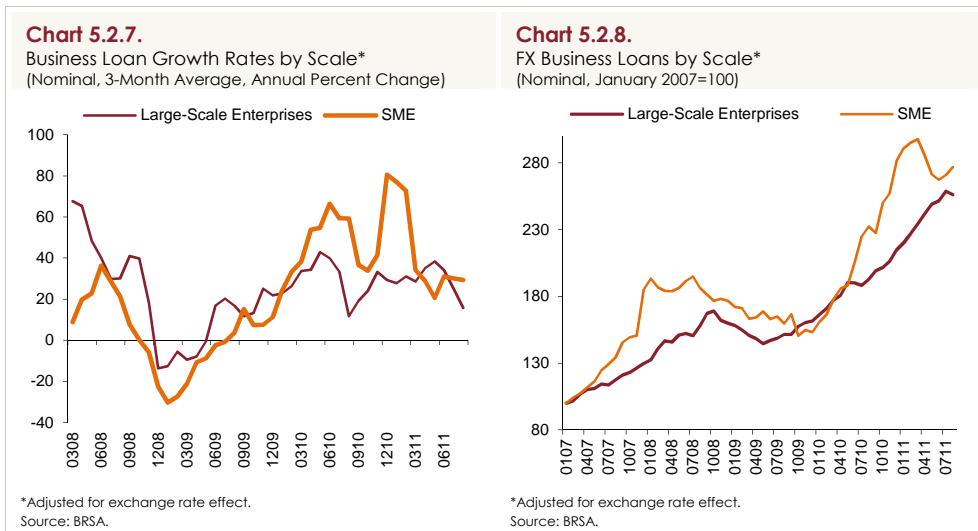


Business loan growth lost pace in both TL and FX-denominated loans, while the slowdown is more severe for the latter (Chart 5.2.5). Furthermore, it is noteworthy that the recent slowdown in business loan growth is more remarkable compared to the previous downward courses experienced during the same period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

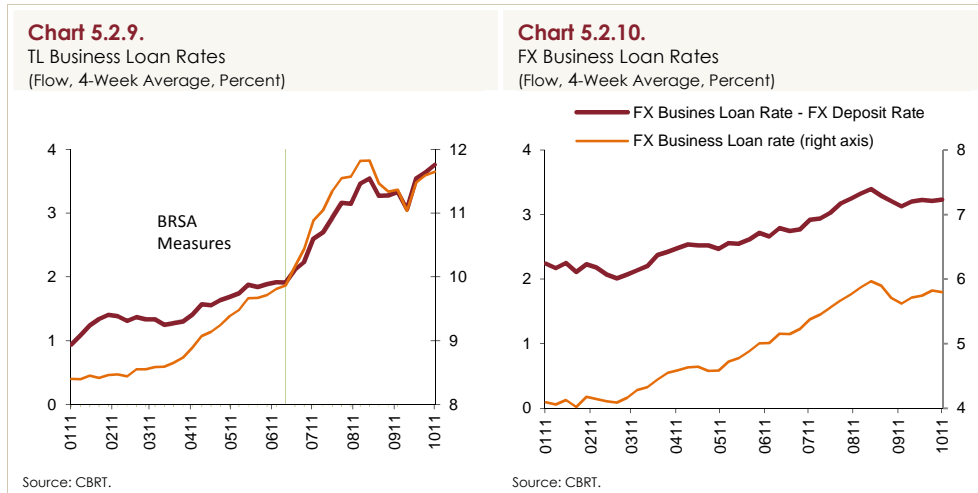


An analysis of the business loans by scale reveal that the recent slowdown stems mostly from loans extended to large-scale enterprises according to the data released in August (Charts 5.2.7 and 5.2.8). Meanwhile, the deceleration in loans extended to large-scale enterprises is particularly marked by 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.

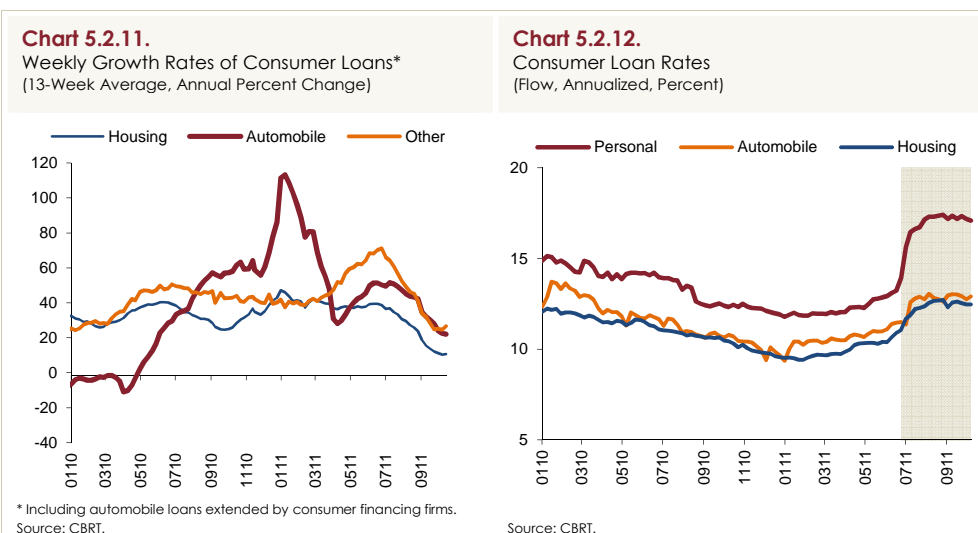


Although demand-driven factors stand out, the adopted measures by policy makers are also considered to contribute to the slowdown in business loan growth. The uptrend in loan and deposit rates observed since the early 2011 stems from the gradual hikes in required reserve ratios and the tight stance

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.



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).



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

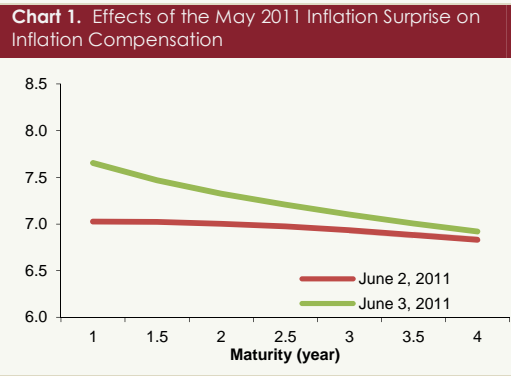
Inflation compensation is mainly affected by inflation expectations, inflation uncertainty and liquidity factors. Duran, Gülşen and Gürkaynak (2011a) showed that out of these factors, liquidity conditions do not notably affect the pricing of bonds when inflation compensation is calculated at daily frequency. 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 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.



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.

REFERENCES

- Duran, M., E. Gülşen, and R. Gürkaynak, (2011a). "Estimating Inflation Compensation for Turkey Using Yield Curves", CBRT Working Paper No. 11/22.
- Duran, M., E. Gülşen and R. Gürkaynak, (2011b). "Constructing Inflation Compensation for Turkey Using Indexed Bonds", CBRT Economic Notes No. 11/15.
- Gürkaynak, R., B. Sack and J.H. Wright, (2010). "The TIPS Yield Curve and Inflation Compensation", American Economic Journal: Macroeconomics 2(1): 70-92.