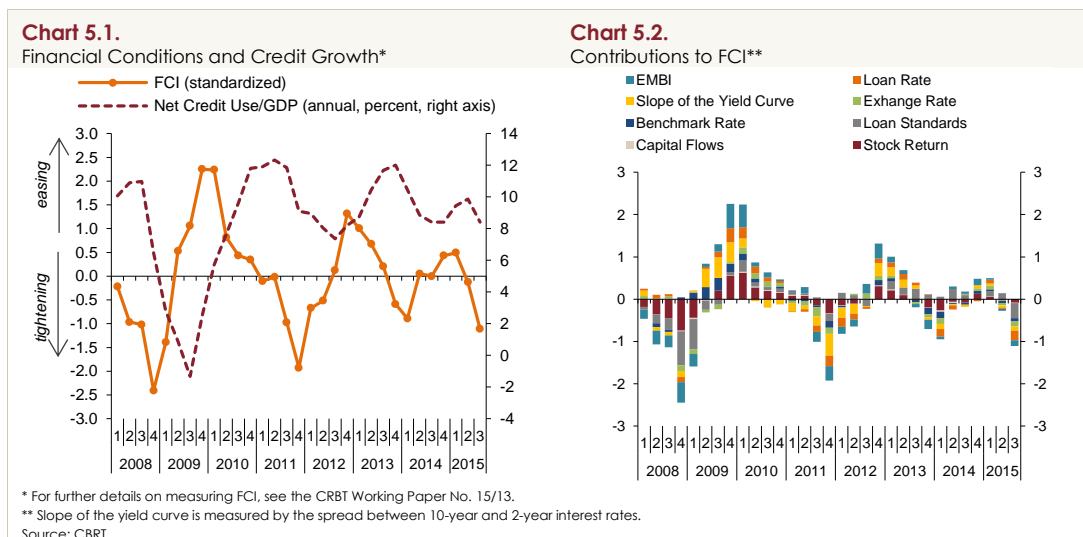


5. Financial Markets and Financial Intermediation

The third quarter of 2015 was marked by heightened volatility in financial markets largely due to signals of a global economic slowdown driven by the Chinese economy and mounting uncertainties over the Fed's monetary policy actions. Lowered global growth expectations and the deteriorated risk sentiment affected mostly commodity-exporting and external-finance-dependent emerging economies in the form of accelerated capital outflows. In this period, in addition to external developments, Turkish markets also faced volatility due to domestic uncertainties and geopolitical tensions. These developments affected short to medium-term perceptions over Turkey considerably, yet the deterioration in long-term financial indicators remained relatively limited.

The Fed's September decision to hold off rate hikes and the weaker-than-expected US economic activity indicators pushed markets' rate rise bets into the spring of 2016, helping the financial market indicators to start recovering since the end of the third quarter. In this period, falling commodity prices also continued to have positive implications for economic activity and the current account deficit, improving the risk sentiment towards Turkey.

The FCI for Turkey tightened notably in the third quarter (Chart 5.1). All financial variables in the index, especially loan standards and loan rates, caused tightening in financial conditions (Chart 5.2). Against this backdrop, domestic loan growth is expected to slow further over the remainder of the year. Thanks to the recent improvement in the global risk appetite and the decline in negative perceptions of domestic risks, the tightening of financial conditions is less likely to deepen, but uncertainties hang over global markets.

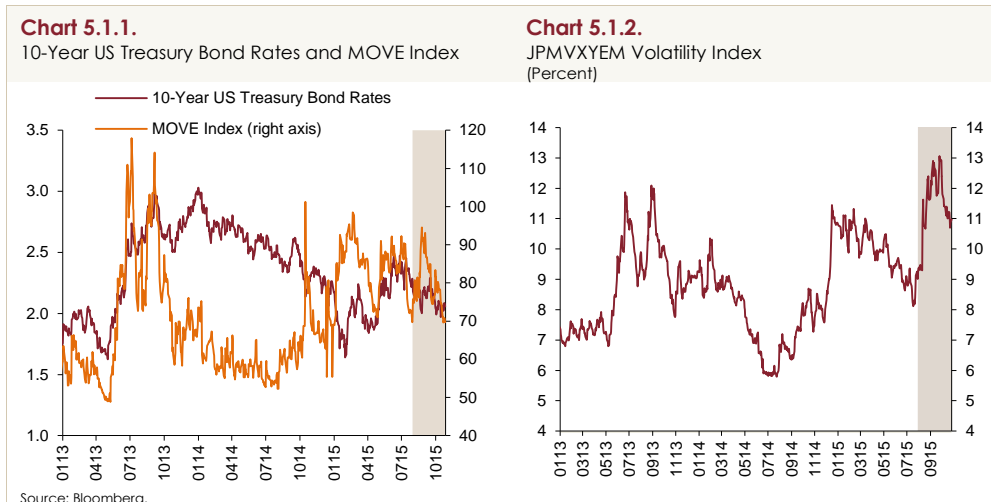


5.1. Financial Markets

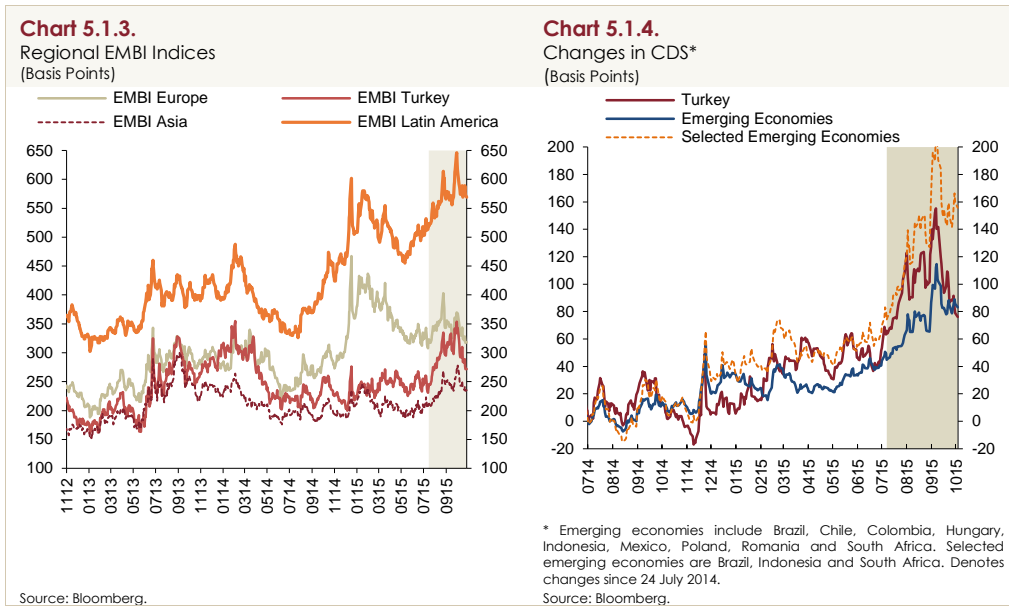
Global Risk Perceptions

The uncertainty over global monetary policies continued into the third quarter of 2015. In particular, the timing of the Fed's first policy rate hike was one of the major concerns dominating global markets. The US economic data emitted mixed signals in this reporting period as the US economy grew by a surprisingly high 3.7 percent in the second quarter, while unemployment and inflation data were lower than expected. The Fed's statement to postpone the first rate hike until inflation moves back to its 2-percent objective and its emphasis on the global economic slowdown shifted expectations of a policy rate hike to 2016. Therefore, rates on 10-year US Treasury bonds have dropped as of September (Chart 5.1.1). The Fed's focus on the path and the pace of the process rather than the timing of the first rate hike fed into the expectations that the policy rate increase will be slow and gradual, which in turn alleviated the interest rate volatility.

In the Euro area, the economy grew by a mere 0.4 percent in the second quarter and the fall in inflation was driven by energy prices; however, the ECB announced that the asset purchase program might be extended beyond September 2016 to ensure a sustained return of inflation to a level close to 2 percent. In this period, China's sluggish economic activity, the Chinese stock market crash and the devaluation of the Chinese renminbi against the US dollar were the major factors feeding into the global market uncertainty. Thus, the emerging market exchange rate volatility posted a remarkable increase in the inter-reporting period (Chart 5.1.2).

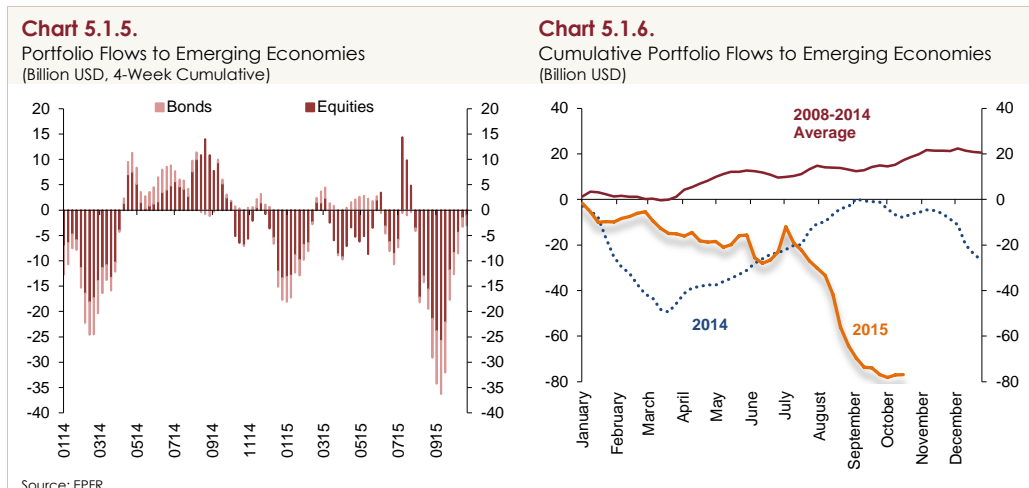


Spillovers from the Chinese economy, lower-than-expected growth rates across emerging economies and geopolitical tensions caused the global risk appetite to stand at low levels while the EMBI and the CDS premiums of emerging economies rose dramatically. Yet, with hopes of a Fed rate hike pushed into 2016, risk premium indicators posted some decrease recently (Charts 5.1.3 and 5.1.4). Likewise, after soaring markedly in the inter-reporting period, risk premium indicators for Turkey experienced a recent fall.

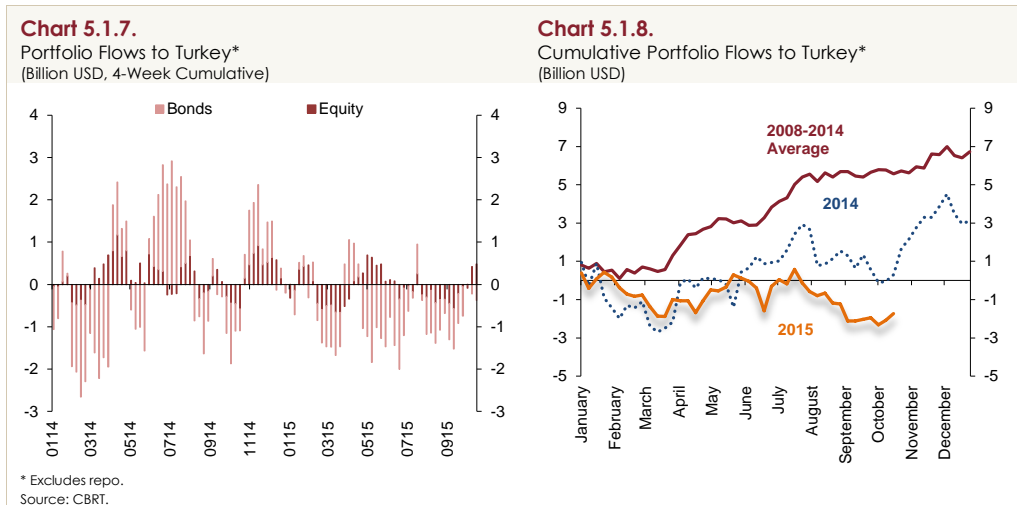


Portfolio Flows

In line with the above global developments, emerging economies saw portfolio outflows in the third quarter of 2015. As for capital flows to emerging economies, Asian-oriented funds led to a sharp fall in stock inflows. Overall, most of the portfolio outflows in this period were driven by the US rebound, mounting concerns over a continued Chinese slowdown and the lower-than-expected growth rates across emerging economies (Charts 5.1.5 and 5.1.6).

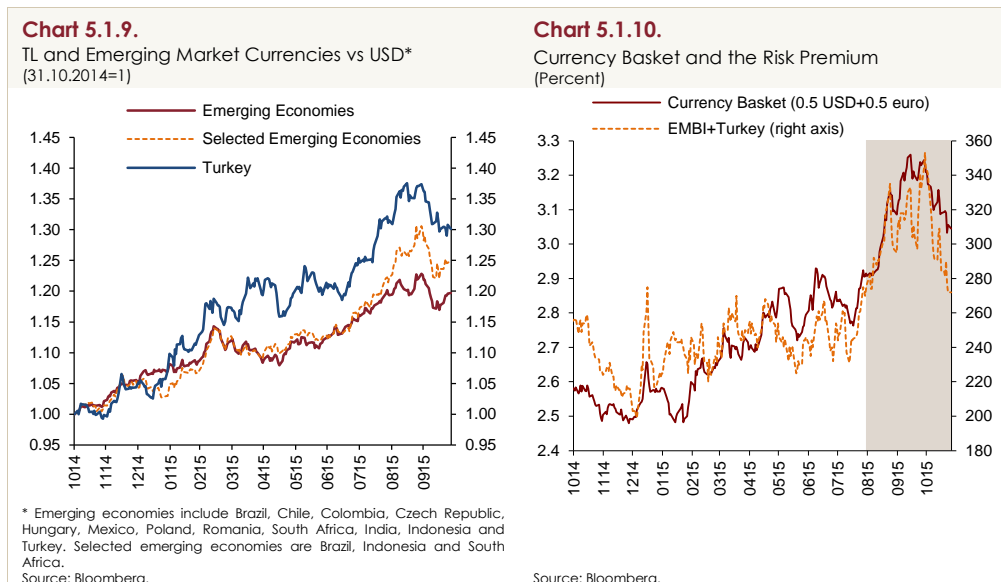


Due to weakening capital flows into emerging economies and domestic uncertainty, Turkey has seen portfolio outflows since July while portfolio inflows have differed significantly from the average of previous years (Charts 5.1.7 and 5.1.8).



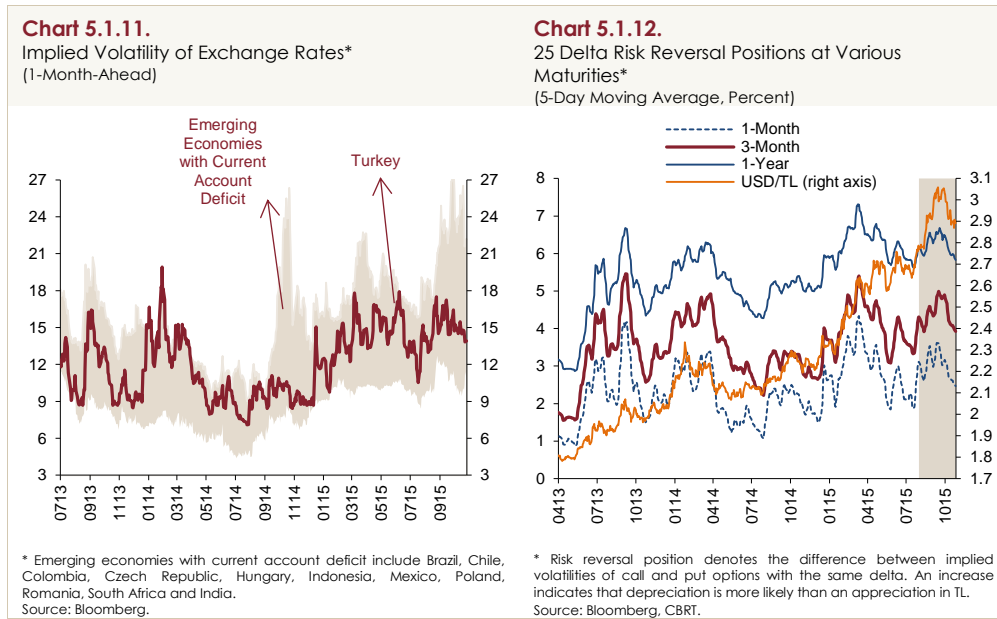
Exchange Rates

Amid lower global risk appetite and higher sovereign risk premiums driven by expectations of a policy rate hike by the Fed and volatile Chinese stock markets, emerging market currencies depreciated against the USD in the inter-reporting period (Chart 5.1.9). Some of the losses were recouped by the improving global risk appetite thanks to sentiments for a delayed rate hike due to the recent worse-than-expected US non-farm payroll numbers. The Turkish lira followed a pattern similar to other emerging market currencies in the third quarter. The currency basket rose on par with increasing risk premiums. After equaling 2.92 on 30 July 2015 when the July Inflation Report was published, the currency basket hovers around 3.05 as of 26 October 2015 (Chart 5.1.10).



In line with third-quarter developments, implied exchange rate volatilities of emerging market currencies posted an upsurge. The implied volatility of the Turkish lira followed a path similar to other emerging market currencies, rising both in short and long terms from the previous period (Chart 5.1.11). Yet, the implied volatility of the Turkish lira recorded some decrease on the back of the recently

improving global risk appetite. The early third-quarter exchange rate depreciation was also evident in risk reversal positions that denote the spread among the volatilities implied by buy (call) and sell (put) options. A widening spread means that expectations of depreciation outweigh those for an appreciation. However, thanks to the recent recovery in exchange rates, risk reversal positions also displayed some decreases (Chart 5.1.12.)



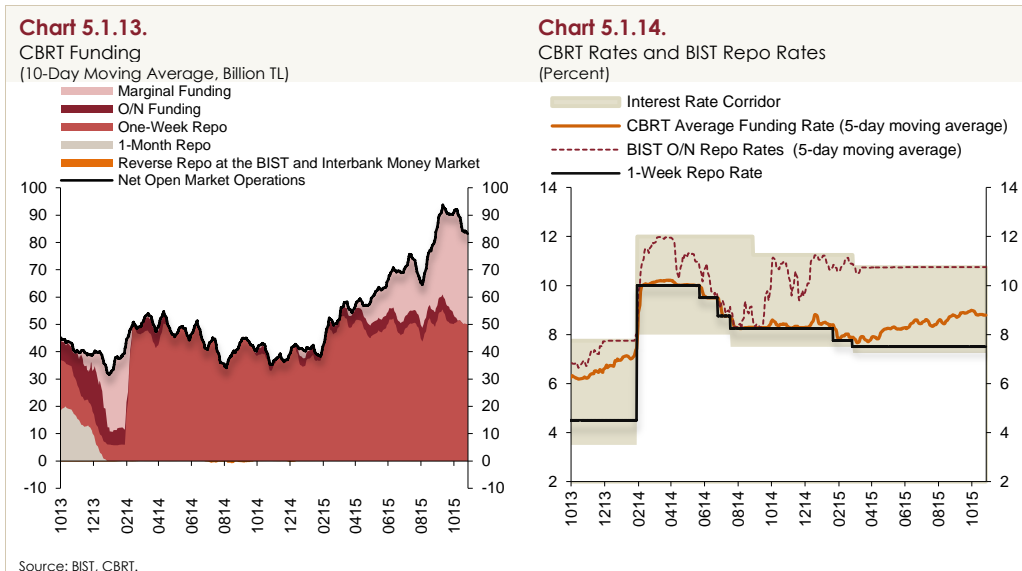
Monetary Policy

The CBRT released a road map on 18 August 2015 for the policies to be implemented before and during the normalization of global monetary policies. Thus, adjustments were made to interest rate, Turkish lira liquidity, foreign exchange liquidity and financial stability policies, which will be implemented before and during the normalization. Accordingly, the interest rate and TL liquidity policies were simplified; quotation on the interest rate on borrowing facilities provided for primary dealers was terminated; and collateral conditions were made simpler. Moreover, it was announced that the interest rate corridor will be more symmetric around the one-week repo interest rate and the width of the corridor will be narrowed following the global monetary normalization. The CBRT also stated that it would take some measures to enhance the flexibility of the foreign exchange liquidity policy and additional measures to bolster core liabilities and long-term borrowing as measures to support financial stability before and during the global monetary policy normalization.

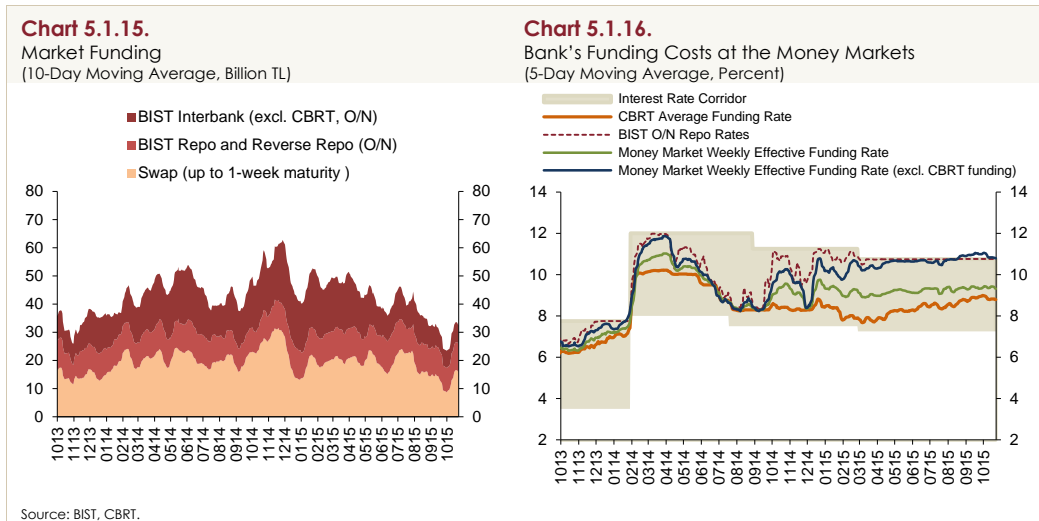
In its presentation on 16 September 2015, the "Briefing on Simplification of the Collateral Framework and Changes in the Primary Dealer Liquidity Facility", the CBRT announced the changes in the Turkish lira liquidity policy. Accordingly, starting from 23 September 2015, instead of offering a favorable interest rate on borrowing facilities, the primary dealership system would be supported by allocating higher bid limits at one-week quantity repo auctions to primary dealers without changing the CBRT funding cost. In addition, as of 28 September 2015, collateral conditions for Turkish lira transactions were simplified. Accordingly, haircut rates were equalized for all tranches; the number of haircut ratios for Turkish Lira collaterals was reduced from 13 to 2 while the number of haircut ratios for

FX collaterals was reduced from 18 to 3. Moreover, in terms of FX deposits as collateral for TL operations, this facility was accepted at only 1-month tenor; the interest rate on these FX deposits would be announced; and for each bank, a specific upper limit would be applied to the FX deposit that is pledged as collateral within the CBRT. Effective 28 September 2015, all these changes aim to enhance banks' liquidity management.

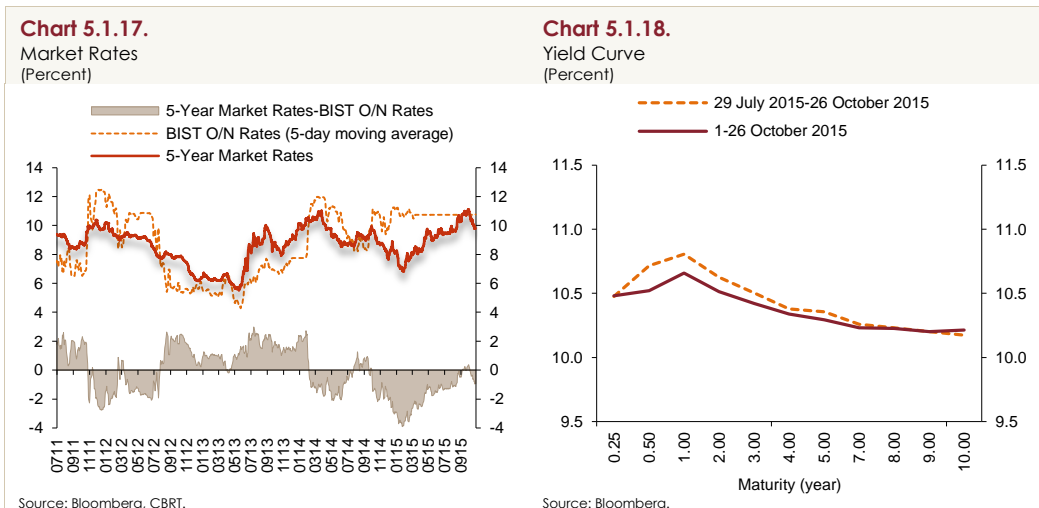
The CBRT maintained its tight monetary policy stance in the third quarter of 2015 to help core inflation remain less affected by the cumulative exchange rate changes since early 2015. In this period, the CBRT kept the one-week repo auction rate at 7.5 percent, the overnight lending rate at 10.75 percent, and the overnight borrowing rate at 7.25 percent. One-week repo auctions remained the leading tool for the CBRT funding, while the share of the marginal funding was raised gradually (Chart 5.1.13). Accordingly, the average funding rate settled at a higher level compared to the previous reporting period. The average funding rate, which was 8.5 percent in the July reporting period, rose to about 8.75 percent in the third quarter. Moreover, the interbank overnight repo rates were kept at the upper band of the interest rate corridor in this quarter as well (Chart 5.1.14). Future monetary policy decisions will be conditional on the inflation outlook. Inflation expectations, the pricing behavior and other factors that affect inflation will be monitored closely and the tight monetary policy stance will be maintained as long as deemed necessary.



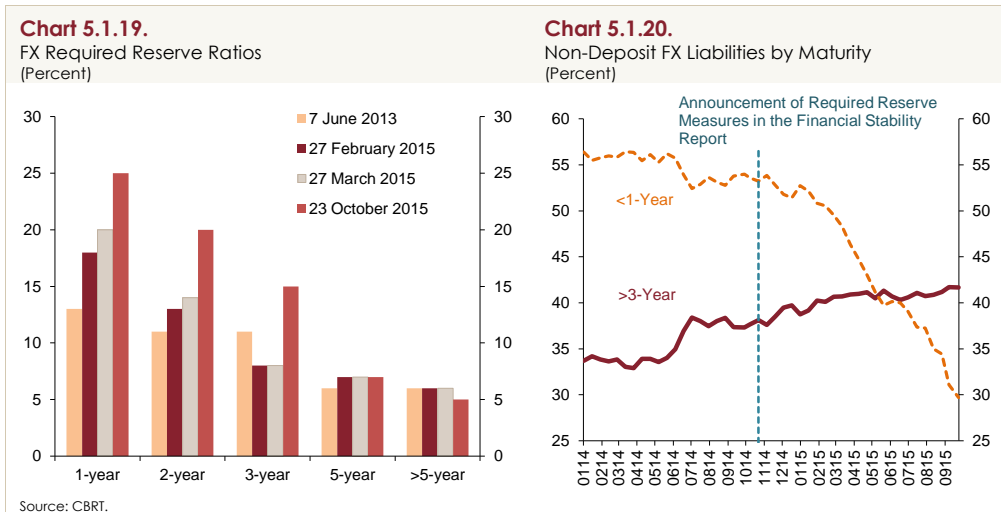
In addition to funds provided by the CBRT, short-term funds provided from various markets also play a significant role in meeting the Turkish lira liquidity requirement of the banking system. Market funding is mostly provided via swap markets with up to one-week maturity. These are followed by funds transacted under the BIST Interbank Repo and Reverse Repo Market and those which are exchanged by intermediaries under the BIST Repo and Reverse Repo Market (Chart 5.1.15). The average cost of non-CBRT funds was higher than the marginal funding rate, causing non-CBRT market funding to decline since the previous reporting period (Chart 5.1.16). The effective funding rate calculated by the weights of CBRT and non-CBRT funds in total funds was around 9.4 percent in October.



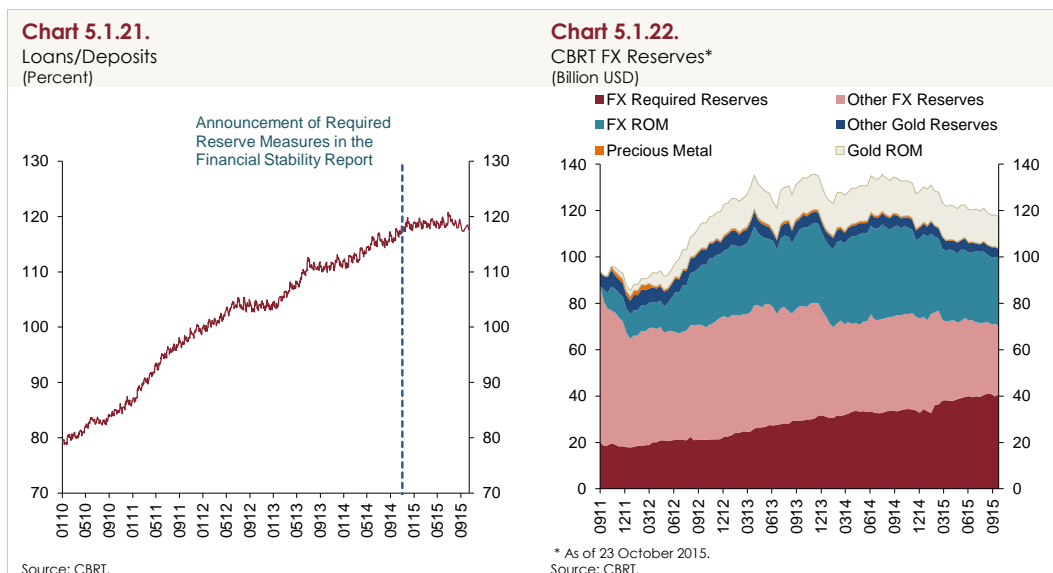
The spread between 5-year market rates and the BIST overnight repo rates hovered around zero as of October 2015 (Chart 5.1.17). The yield curve hardly changed and remained nearly horizontal in this period (Chart 5.1.18).



Besides interest rate and liquidity policies, the CBRT continues to employ other policy instruments to support financial stability. These measures aim at limiting macrofinancial risks and contributing to a balanced growth by promoting prudential borrowing. In the first quarter of 2015, to encourage the extension of maturities, the CBRT had raised the required reserve ratios applied to non-core short-term FX liabilities of banks and financing companies. On 29 August 2015, the CBRT announced that required reserve ratios for new non-core FX liabilities after 28 August 2015 would be revised to encourage maturities of longer than three years (Chart 5.1.19). This change seems to have supported the extension of maturities for non-core FX liabilities since November 2014 (Chart 5.1.20). In a second announcement on 29 August 2015, the CBRT raised the remuneration rate for the TL required reserves by 50 basis points each in September, October and December. This adjustment aimed at reducing intermediation costs of the banking sector and supporting core liabilities. In fact, the loans-to-deposits ratio has settled on a relatively more stable track since the introduction of these measures in November 2014 (Chart 5.1.21).



In the road map regarding the steps to be taken during the normalization of global monetary policies, the CBRT also included some measures to enhance the flexibility of the foreign exchange liquidity management. To this end, transaction limits for banks at the CBRT Foreign Exchange and Banknotes Markets were raised by around 130 percent to 50 billion USD on 1 September 2015. Consequently, the sum of deposit limits allocated to banks and gold and foreign exchange assets held at the CBRT under the ROM reached a level that is considerably above the external debt payments of banks, which are due within the year. Moreover, the CBRT announced that because of the increased volatility in global financial markets, as of 19 August 2015, the amount of the foreign exchange sales auction may be increased by up to 70 million USD above the pre-announced minimum amount. Accordingly, the CBRT maintains the stabilizing stance regarding the foreign exchange liquidity.



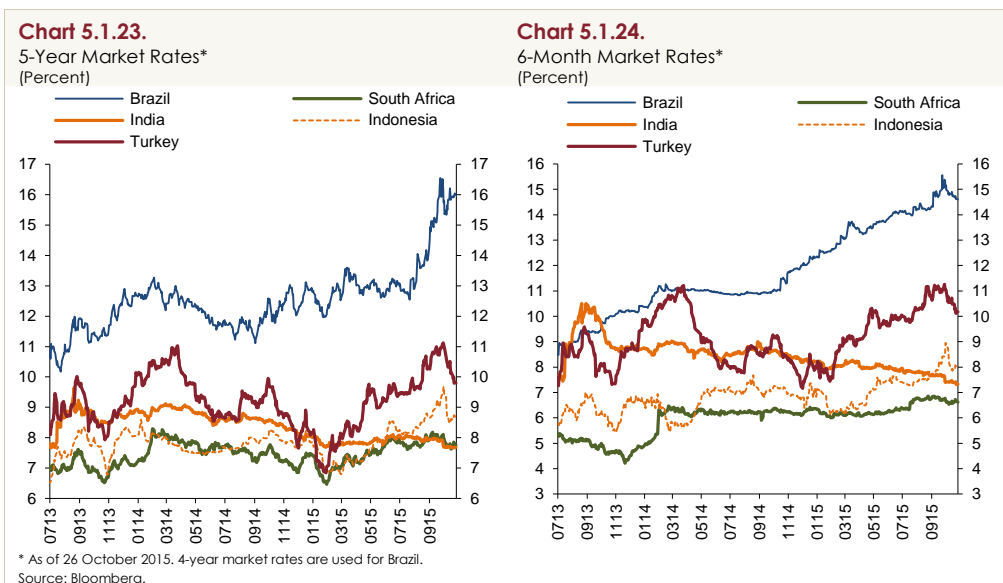
The CBRT reserves were slightly down in the inter-reporting period (Chart 5.1.22). In this period, the CBRT's other FX reserves declined due to the above FX selling auctions supporting the FX liquidity, which, however, was offset by rising reserves maintained by banks under the FX required reserves. The amount maintained by banks within the ROM was kept unchanged. The use of ROM by financial institutions remained high in the second quarter and stood at 96.1 percent (57.7/60) for FX and 94 percent (28/30) for gold by the maintenance period of 9 October 2015.

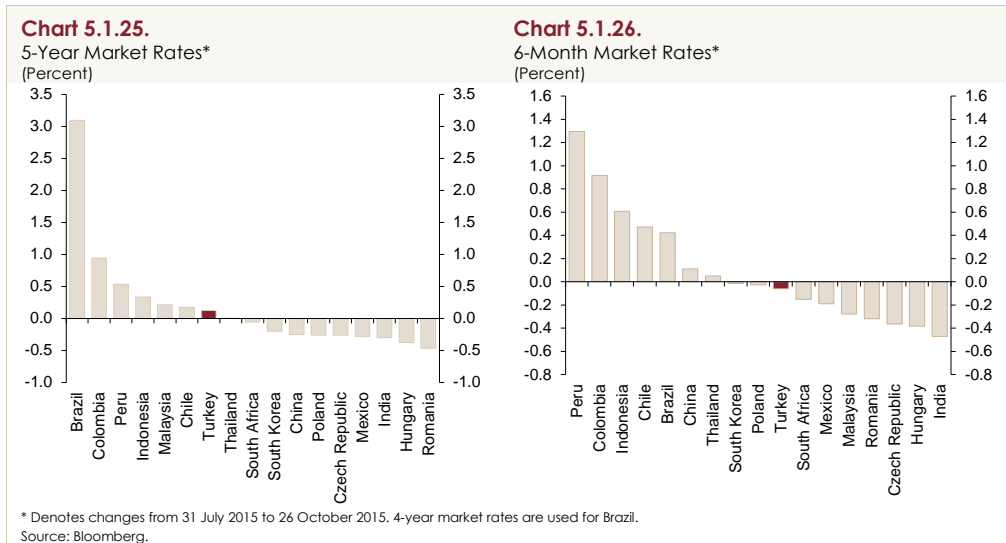
The CBRT sold 18.9 billion USD from early 2015 to 22 October 2015 via FX selling auctions and direct FX sales to energy-importing SEEs. In the same period, the FX obtained through rediscount credits amounted to 12.7 billion USD. Continuing with FX selling auctions and direct FX sales to energy-importing SEEs in the upcoming period will bring the CBRT's FX reserves down; yet, export rediscount credits will drive these reserves higher.

In sum, in view of the current global and domestic conditions, the CBRT's monetary policy stance is tight against the Turkish lira, stabilizing for the FX liquidity, and supportive of financial stability.

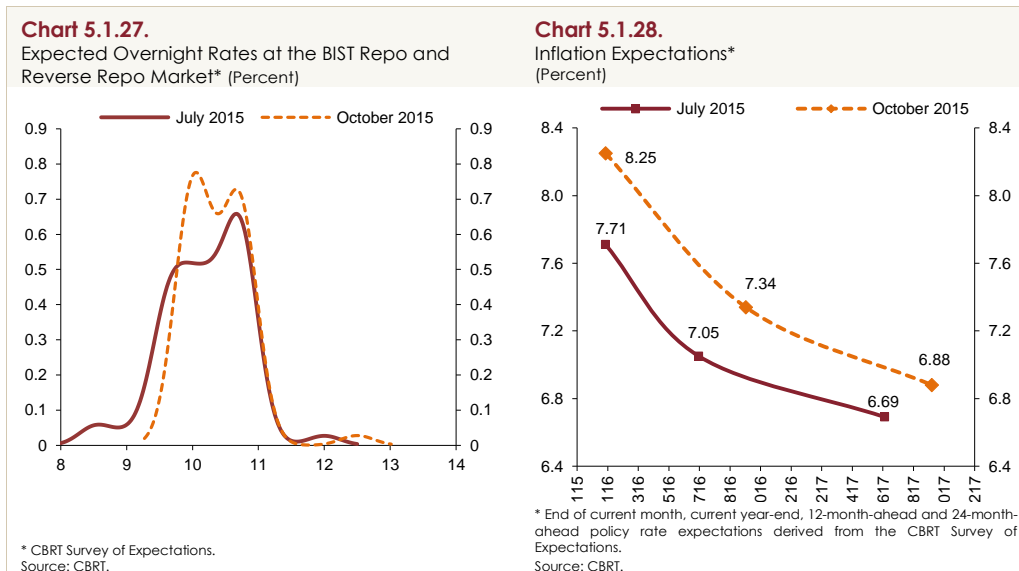
Market Rates

In the beginning of the third quarter, the rising sovereign risk premiums and the weak and volatile capital inflows caused market rates to increase moderately in emerging economies. October's improved global risk appetite partially offset the increase in market rates (Charts 5.1.23 and 5.1.24). In this period, Turkey's market rates were also on the rise due to global developments as well as domestic uncertainties and heightened geopolitical tensions. Amid recent expectations of a delayed Fed rate hike, the improved global outlook for emerging economies helped reduce rates slightly in Turkey. On a country level, thanks to the recent recovery, Turkey recorded a modest change in 5-year and 6-month market rates compared to the previous reporting period (Charts 5.1.25 and 5.1.26).

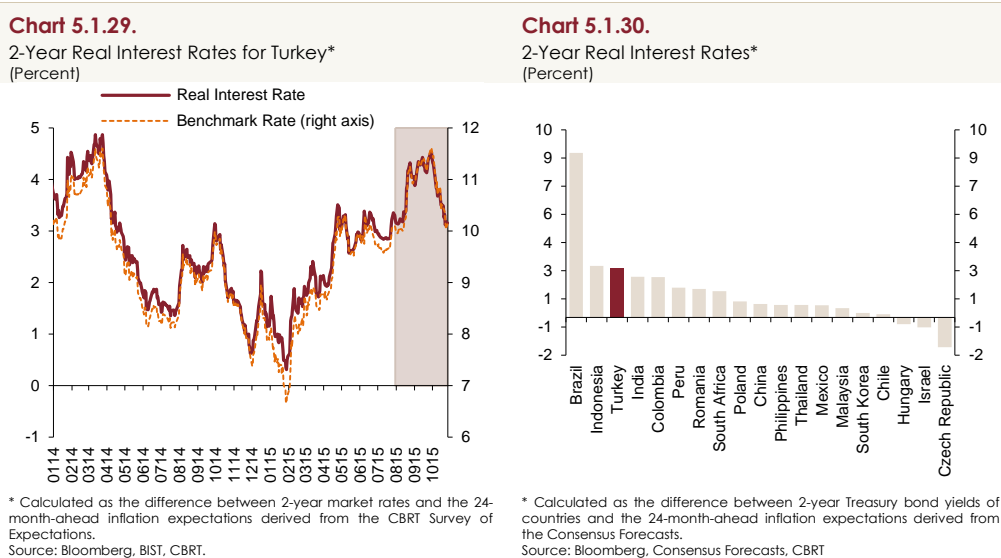




Thanks to the CBRT's cautious monetary policy stance backed by a tight liquidity policy throughout 2015, the BIST overnight repo rates remained close to the upper band of the interest rate corridor in the third quarter (Chart 5.1.14). Thus, due to the cautious monetary policy stance and the decision to remain watchful of the Fed's policy actions during the monetary normalization, the median of the expected overnight rate distribution at the BIST Repo and Reverse Repo Market shifted slightly right (Chart 5.1.27). Meanwhile, inflation expectations, which are influential in long-term market rates, were higher than in July (Chart 5.1.28).

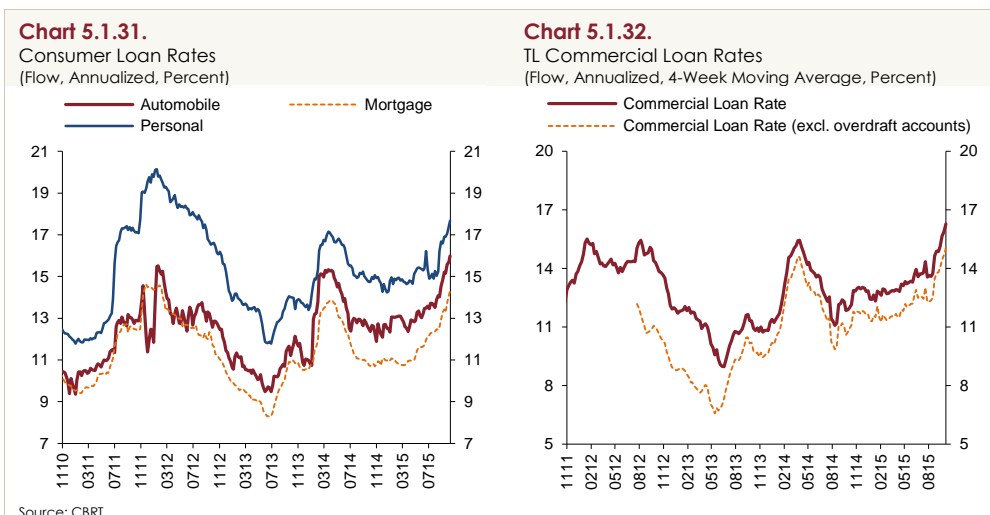


In the third quarter of 2015, real rates in Turkey displayed a rise, which was followed by a fall. Despite the uptick in 2-year inflation expectations, the movement in nominal interest rates was more pronounced, dominating the third-quarter pattern of 2-year real rates (Chart 5.1.29). Meanwhile, having fallen after a rise, the benchmark rate was on par with Turkey's sovereign risk premium through the third quarter. Despite the recent minor declines, Turkey's 2-year real rates ranked higher among emerging economies (Chart 5.1.30).



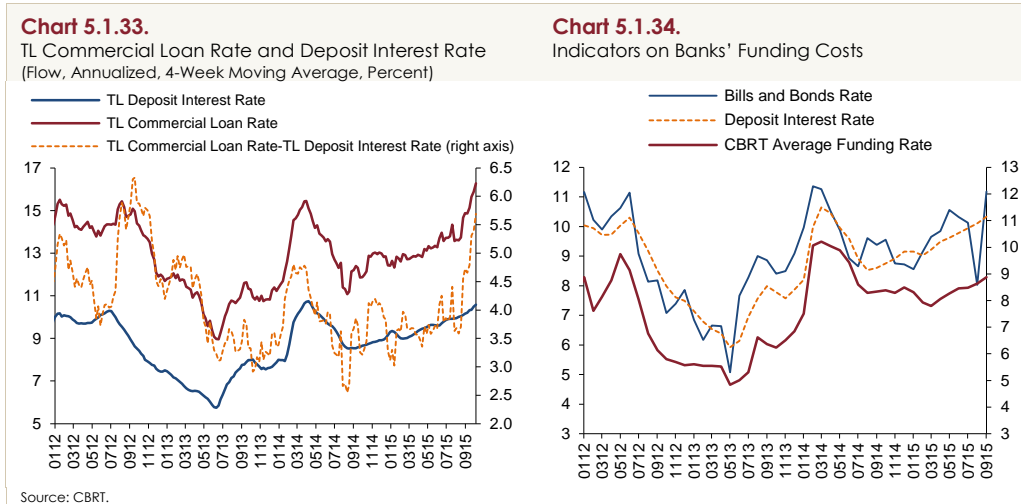
Loan Rates and Banking Sector Funding Costs

Having remained flat in the first quarter of 2015 and recording an uptick in the second quarter, rates on loans extended to the non-financial sector continued to rise in the third quarter. Among consumer loans, mortgage loan rates soared by about 160 basis points quarter-on-quarter, while rates on personal loans and automobile loans jumped by 130 and 175 basis points, respectively (Chart 5.1.31). Up by around 210 basis points, commercial loan rates rose at a faster pace than consumer loan rates in this period. Likewise, commercial loan rates excluding overdraft accounts surged by about 200 basis points (Chart 5.1.32). This third-quarter upturn in loan rates is consistent with the Loan Tendency Survey's prediction of tighter domestic and external financing conditions.



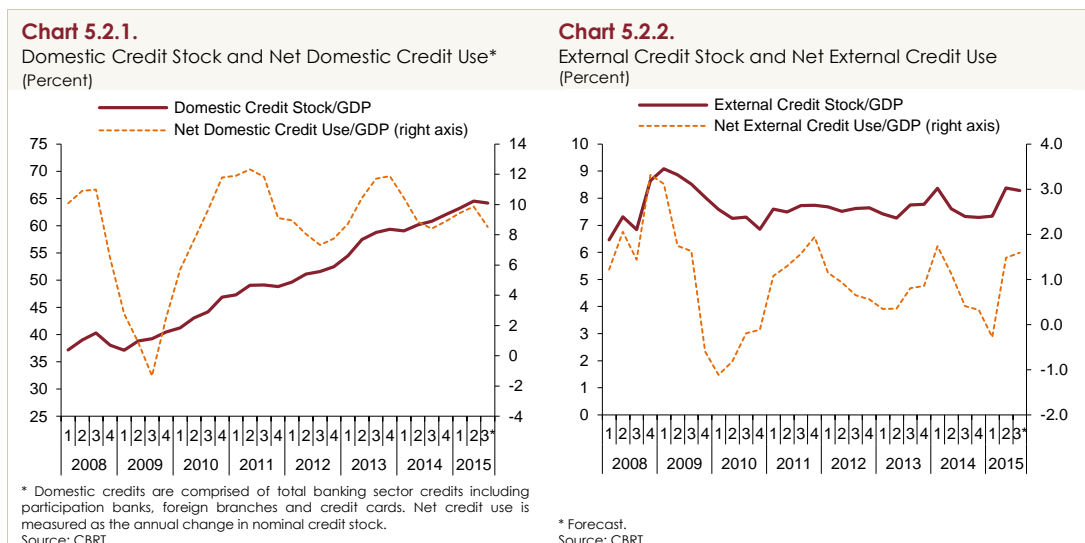
Rates on deposits with maturities shorter than three months, which are the primary financing resources of the banking sector, rose by 50 basis points quarter-on-quarter owing to the CBRT's tight liquidity stance and rising weighted funding costs in this quarter. As commercial loan rates soared more than deposit rates in the third quarter, the spread between commercial loan rates and deposit rates widened over 500 basis points after a long time (Chart 5.1.33). The weak and fluctuating fund flows

towards emerging economies also affected rates on bills and bonds issued by banks. After increasing by around 100 basis points at the end of the second quarter due to a weak performance, rates on bills and bonds edged down in mid-third quarter but accelerated again in September and ended the third quarter at 11.2 percent (Chart 5.1.34).

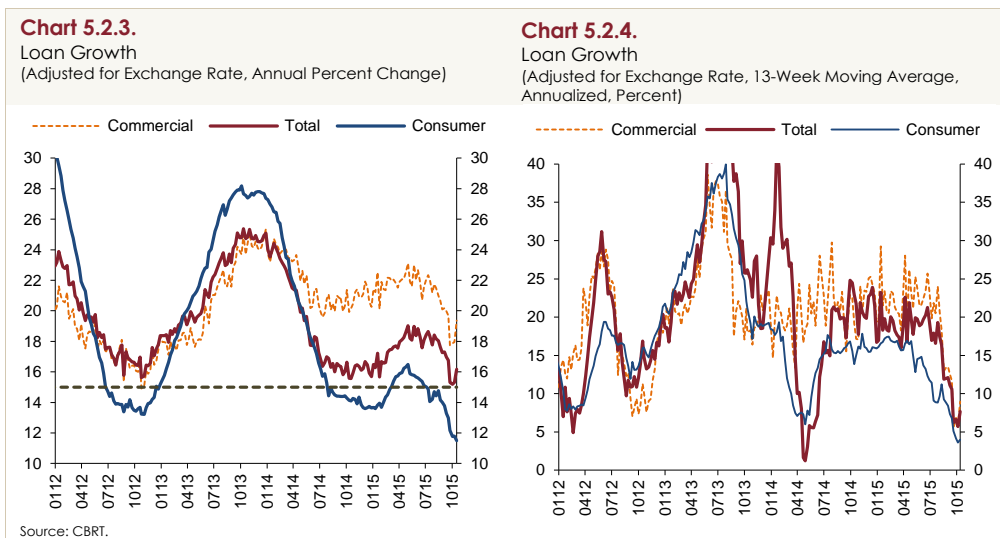


5.2. Credit Volume and Monetary Indicators

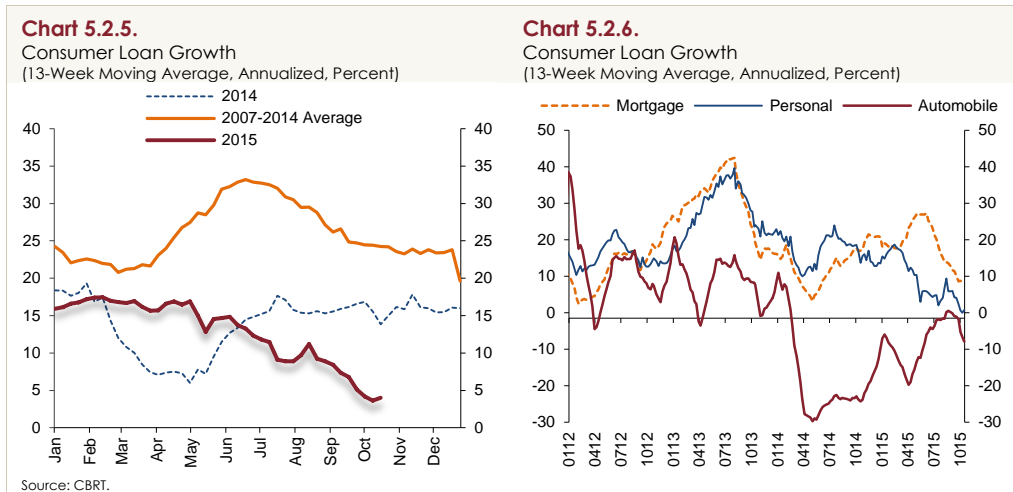
The net credits to the GDP ratio, which is critical to financial stability and an indicator of the relationship of credit growth with economic activity and aggregate demand, posted a mild quarterly decrease and reached 8.5 percent in the third quarter of 2015 (Chart 5.2.1). The third-quarter financial tightening suggests that the net credits to GDP ratio will remain on a downtrend in the upcoming period. Meanwhile, firms' external credit use remained close to historical averages in the third quarter of 2015, implying that firms had easy access to external borrowing (Chart 5.2.2). All in all, firms' external credit use appears to have crept up year-on-year.



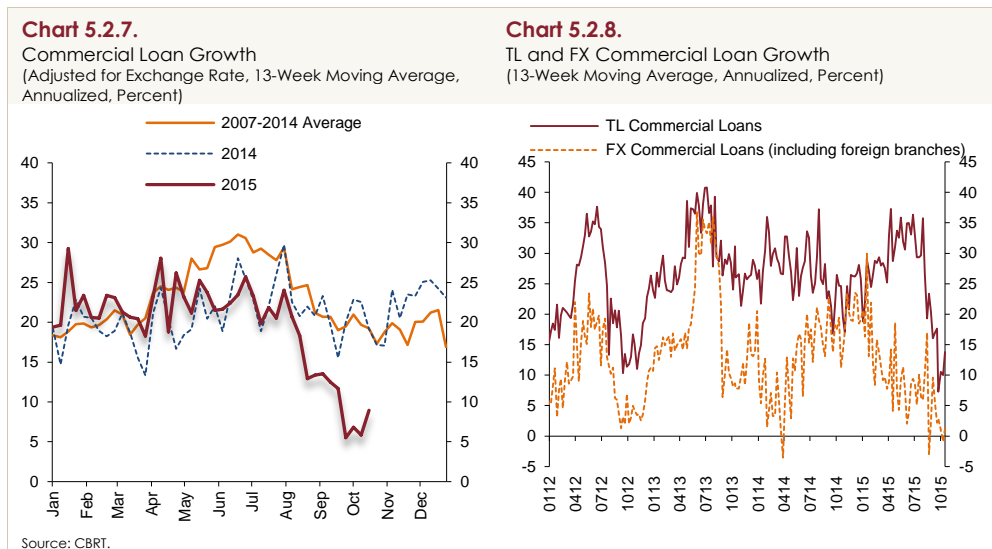
The annual growth rate of loans extended to the non-financial sector, which decelerated due to the CBRT's cautious monetary policy stance and the macroprudential measures introduced by the BRSA regarding consumer loans excluding mortgage, continued to fall for the second consecutive quarter. A breakdown of total loans shows that commercial loans continued to grow faster than consumer loans on the back of the measures adopted by the BRSA and the weak consumer confidence. Accordingly, loans extended to the non-financial sector posted a 15.3 percent year-on-year growth in exchange rate adjusted terms at the end of the third quarter of 2015, approaching the reference mark of 15 percent for the growth rate of total loans (Chart 5.2.3). In 13-week moving average terms, which display the third-quarter developments, total loans grew by an annual 6.6 percent (Chart 5.2.4).



Having hovered just below the averages of past years in the first quarter of 2015 and declining slightly more in the second quarter, the annualized growth rate of consumer loans ended the third quarter at a record low of 5 percent (Chart 5.2.5). This rapid quarter-on-quarter fall was driven by the slowdown across all subcategories except automobile loans. The Loan Tendency Survey and the Consumer Confidence Index hint at both supply and demand-driven slowdown for loans. The annualized growth rate of mortgage loans with a historically consistent 5-year average maturity and higher interest rate sensitivity was still greater than others, but went below past years' averages, ending the quarter at 8.6 percent. According to the results of the Loan Tendency Survey for the third quarter, the demand for mortgage loans edged down while loan standards saw some tightening. As a result of the macroprudential measures implemented by the BRSA, the growth of automobile loans, which was negative but started to recover in line with seasonal effects, registered an additional improvement in the third quarter (Chart 5.2.6).

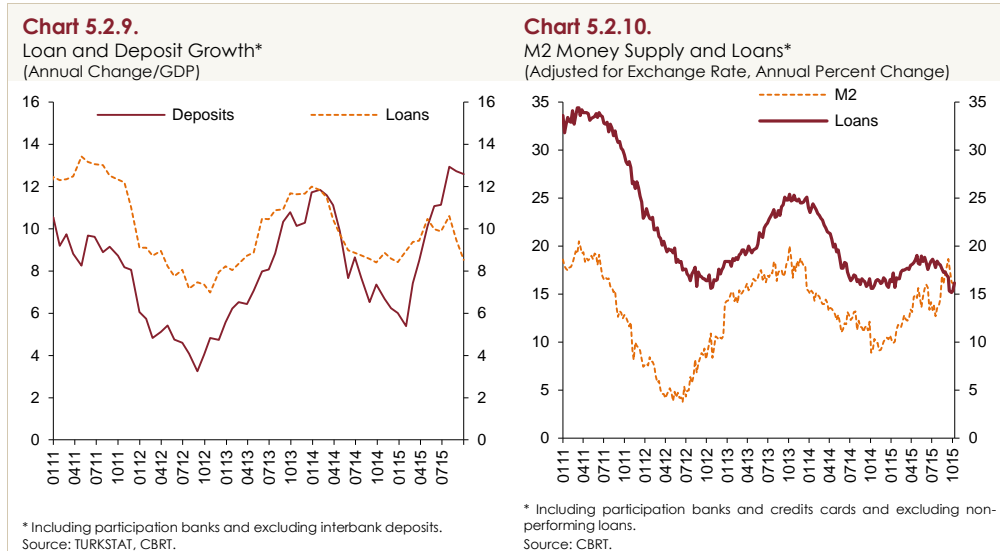


In the third quarter of the year, the annualized growth rate of commercial loans remained slightly below the averages of past years and hit 5.5 percent at the end of the quarter (Chart 5.2.7). This dramatic decline in commercial loans was largely driven by FX-denominated commercial loans, yet TL-denominated loans also appear to be slowing in the fourth quarter (Chart 5.2.8).



According to the third-quarter Loan Tendency Survey results, standards for commercial loans tightened substantially and the analysis by firm size shows that this has been prevalent across SMEs and large-sized firms. However, responses suggest that the decline in banks' appetite for long-term and FX-denominated lending is even more notable. As for factors affecting commercial loan standards, expectations for overall economic activity, which have led to tightening for the last three quarters, have continued to have a marked impact in this quarter. Meanwhile, both domestic and external financing conditions also caused tightening in loan standards. However, the effect of financing conditions was more evident on the side of domestic conditions. Expectations for the fourth quarter of 2015 reveal that loan standards are likely to tighten further. Similarly, financing conditions are expected to be much tighter. On the demand front, loan demand recorded a drop in the third quarter, which was significantly higher in large-sized firms. This drop was mostly attributed to the weakening demand

for investments, while the rising loan demand caused by debt restructuring failed to prevent the total loan demand from decreasing.



After having caught up with the pace of loan growth in the second quarter thanks to policies adopted by the CBRT and the BRSA, deposit growth exceeded loan growth in the third quarter (Chart 5.2.9). The relationship between M2 and loans suggests that the growth rate of loans has recently diverged from that of money supply, yet remained consistent and hovered at reasonable levels (Chart 5.2.10).

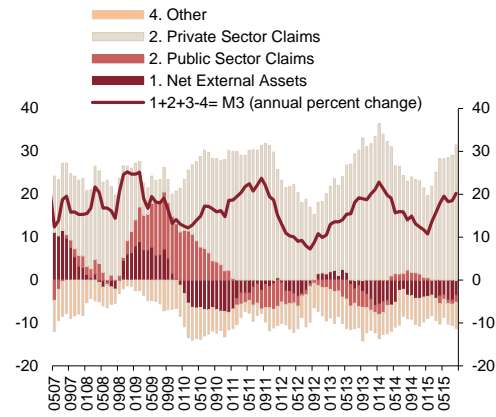
Monetary Indicators

Credits extended to the private sector continue to determine the annual growth of M3, the broad measure of money supply. The recently slowing growth rate of Private Sector Claims, which mostly include credits extended by banks to non-financial private individuals and institutions, caused the M3 growth to moderate in the third quarter. Meanwhile, the item Other, which displayed a relatively steady course in line with bank profitability, is still a non-deposit funding source for the banking sector, yet continues to contribute negatively to money supply. Being more unstable than the item Other, Public Sector Claims continue to put downward pressure on the M3 growth for the second quarter in a row (Chart 5.2.11).

The annual growth of seasonally adjusted currency in circulation has been on an uptrend since the last quarter of 2014 (Chart 5.2.12). This is mainly attributed to the higher demand for currency in circulation due to the recent price hikes, which have been observed owing to the mild domestic demand growth.

Chart 5.2.11.

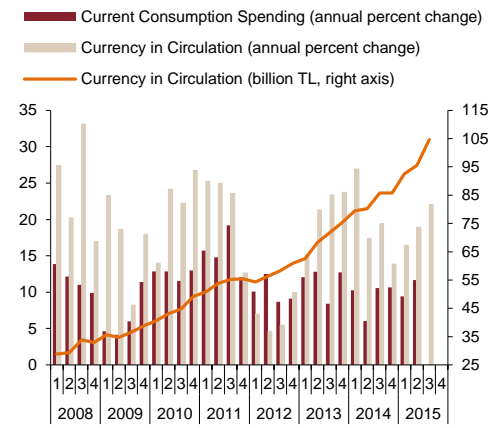
Balance Sheet Decomposition of M3
(Contributions to Annual M3 Growth)



Source: CBRT.

Chart 5.2.12.

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



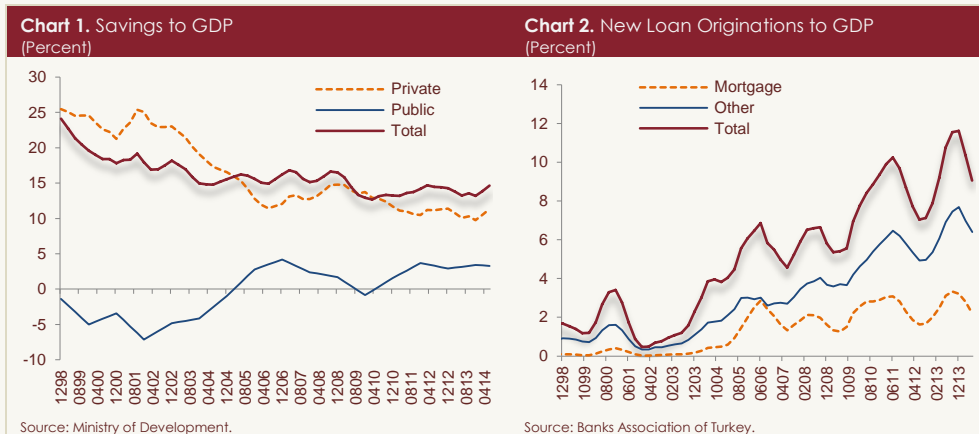
* Consumption spending includes private and public consumption excluding furniture, household appliances, transport and communication services at current prices.

Source: TURKSTAT, CBRT.

Box
5.1

The Relationship between Loans and Private Savings

The Turkish economy grew more stable after the 2001 economic crisis thanks to a substantially smaller public debt stock as well as lower inflation and real interest rates on the back of the reform program. In the post-crisis period with higher stability, the private savings rate (private savings to GDP ratio) dropped notably, while households had easier access to loans, which thereby pushed consumer loans significantly higher (Charts 1 and 2).



This study analyzes the determinants of the private savings rate in Turkey by using quarterly data for the 1998-2014 period with a special focus on the impact of mortgages and other loan types on private savings. Even though the mortgage to GDP ratio is currently low, it is expected to increase with further credit expansion. Therefore, mortgages are likely to become more critical to the private savings rate in the following periods.

The low savings rate in Turkey is a major obstacle to investments and growth. Concurrently, low savings rate is the main reason for the widening current account deficit. Due to the low domestic savings rate, investments and growth rely heavily on foreign capital, which is extremely volatile and sensitive to the income differences across countries. On the other hand, high capital inflows today may bear the risk to translate into higher capital outflows in the future. Thus, insufficiency of domestic capital and sensitivity to external borrowing may have a negative impact on economic growth over time. This signifies the importance of domestic savings for the robustness and the sustainability of growth.

Mortgages have important implications for household savings. Before applying for a mortgage, households save the down payment; and after receiving the loan, they make regular payments, which help them to accumulate home equity. On the other hand, having access to a mortgage reduces the uncertainty about the most important buying decision (buying a house) that most households make in their lifetime. In the absence of a mortgage, households need to save to buy a house at an uncertain price and an uncertain date that will take place in the future. However, with mortgage, the price and monthly payments are determined upfront and therefore the uncertainty over how much the household needs to save to buy a house lessens, which can lead to a significant reduction in household savings.

The following model is estimated using the least squares estimation technique to analyze the effects of mortgage and non-mortgage loans as well as other relevant variables on private savings:

$$\begin{aligned} \Delta PS_t = & \beta_1 \Delta PS_{t-1} + \beta_2 Y_t^g + \beta_3 \Delta EMBI_t + \beta_4 INT_t + \beta_5 ToT_t + \beta_6 \Delta GS_t \\ & + \beta_7 \Delta ML_t^f + \beta_8 \Delta ML_t^s + \beta_9 \Delta NML_t + \beta_{10} \Delta CL_t + \beta_{11} \Delta ML_t^f \Delta ML_t^s + \varepsilon_t \end{aligned}$$

Where PS_t is the current private savings rate, PS_{t-1} is the lagged private savings rate, Y_t^g is the per capita real GDP growth, $EMBI_t$ is the sovereign risk premium, INT_t is the real interest rate, ToT_t is terms of trade, GS_t is the public savings rate, ML_t^f is the ratio of new mortgage originations to GDP, ML_t^s is the ratio of outstanding mortgages to GDP, NML_t is the ratio of other consumer loan originations to GDP, CL_t is the ratio of commercial loans to GDP and Δ is the lag operator.¹

According to the results shown in Table 1, in the absence of mortgages and other loans, the significant explanatory variables are lagged savings rate and the sovereign risk premium (Models 1 and 4). However, in Models 2 and 5 where new mortgage originations are included, a 1-percent increase in new mortgage originations to the GDP ratio leads to a decline of more than 1 percent in the private savings rate. These results show that mortgage loans had a substantial effect on the private savings rate, especially after the 2001 crisis. Moreover, in a similar study conducted for the US, it was also found that mortgage payments brought private and household savings down significantly (Tunç and Yavaş, 2015b).

According to Models 3 and 6, which include all the explanatory variables, the effect of new mortgage originations on the private savings rate remains unchanged, while other loans also have a statistically significant effect. A 1-percent increase in other consumer loans drives the private savings rate down by slightly more than 0.9 percent, whereas commercial loans have a positive effect on the private savings rate. Mortgages are mostly considered as an investment in home equity, while other consumer loans are generally taken for spending purposes. The higher negative effect of new mortgage originations on the private savings rate than other consumer loans is attributed to the ending of uncertainty about the biggest investment of households. However, the positive effect of commercial loans on the private savings rate can be ascribed to the fact that firms use part of the commercial loans to avoid fluctuations in investments and reduce the fixed costs paid for loans as well (Eisfeldt and Muir, 2014).

The mortgage to GDP ratio is still relatively low for Turkey. Yet, assuming continued growth at the current pace, mortgages will require special focus due to their negative effect on the private savings rate. In fact, the negative and statistically significant relation of the interaction of new mortgage originations and outstanding mortgages with private savings rate indicates that new mortgages might have an added effect on savings with higher mortgage stock. These results also show how taxes and macroprudential measures are important in alleviating the effects of mortgages on the savings rate. Because of the high correlation between the current account deficit and the savings rate, the evidence based on the Turkish data seems to be valid for other countries running a current account deficit as well.

¹ For further details, see Tunç and Yavaş (2015a).

Table 1. Estimation Results

Variables	1998 - 2014			2002-2014		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Lagged Private Savings Rate	0.794*** (0.0943)	0.477*** (0.0930)	0.366*** (0.0834)	0.794*** (0.115)	0.363*** (0.0922)	0.229** (0.0916)
Per Capita Real GDP Growth	0.0856* (0.0491)	0.0584 (0.0390)	0.0746 (0.0451)	0.0803 (0.0503)	0.0451 (0.0328)	0.0942** (0.0432)
Sovereign Risk Premium	0.412*** (0.0837)	0.348*** (0.0670)	0.224*** (0.0629)	0.380*** (0.135)	0.273*** (0.0883)	0.265*** (0.0842)
Real Interest Rate	-0.0565 (0.0517)	- (0.0412)	-0.0607 (0.0382)	-0.0566 (0.0578)	-0.103*** (0.0378)	-0.0573 (0.0388)
Terms of Trade	0.00659 (0.0367)	0.00324 (0.0290)	-0.0372 (0.0267)	-0.0359 (0.0598)	-0.0986** (0.0394)	-0.0936** (0.0366)
Public Savings Rate	-0.229 (0.143)	-0.325*** (0.114)	-0.391*** (0.113)	-0.232 (0.171)	-0.447*** (0.113)	-0.622*** (0.129)
New Mortgage Originations		-1.104*** (0.194)	-1.153*** (0.219)		-1.340*** (0.171)	-1.275*** (0.198)
Outstanding Mortgages			0.103 (0.378)			0.168 (0.333)
Other Consumer Loans			-0.955*** (0.210)			-0.938*** (0.254)
Commercial Loans			0.180*** (0.0538)			0.129** (0.0588)
New Mortgage Originations* Outstanding Mortgages			-0.422 (0.256)			-0.447* (0.222)
Number of Observations	58	58	58	49	49	49
R ²	0.858	0.913	0.943	0.861	0.943	0.960

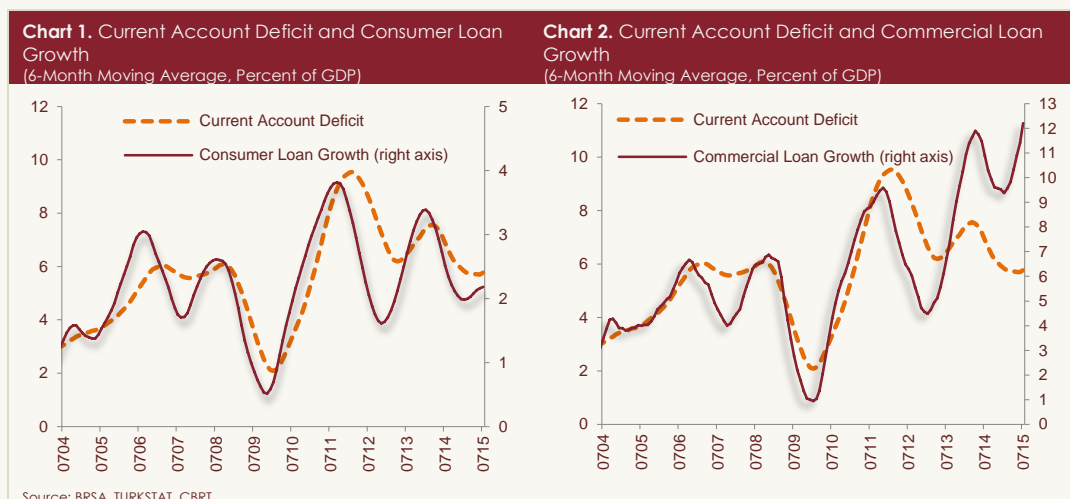
*, **, and *** denote significance at 10 percent, 5 percent and 1 percent, respectively. Standard errors are in parentheses.

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Box 5.2 The Relationship of Consumer and Commercial Loans with the Current Account Deficit: Evidence for Turkey and Other Countries

Loans are one of the key variables that should be closely monitored for financial stability. Given the assumed relation between loans and economic activity, loans are also critical to monetary policy via their effects on inflation and demand management. Furthermore, loans are related to the overall macroeconomic environment through their effects on the current account balance. In this regard, Ekinci et al. (2015) show that loan growth is highly correlated with the current account balance, especially in emerging economies, and acceleration in loan growth might deteriorate the current account balance. Besides the fact that loans have an impact on the current account balance, how this relation differs by loan type (consumer and commercial loans) is a crucial question that may have policy implications. Analyzing how consumer and commercial loans are linked to the current account deficit in Turkey reveals that both loans move on par with the current account deficit; yet, the correlation between consumer loans and the current account deficit appears more significant lately (Charts 1 and 2).



The relation between loans and the current account deficit may vary by loan type due to various reasons. First, a rise in consumer loans may increase consumer demand, which may also cause higher demand for imported goods, thereby worsening the current account deficit. Also, when the supply capacity of an economy is constant, the financing of a demand increase by consumer loans may trigger an overall price hike. This may cause a real appreciation in the local currency, which may function as an additional channel to widen the current account deficit. Conversely, commercial loans may have different effects on the current account deficit than consumer loans. In other words, the use of commercial loans to finance firms' imported inputs may expand the current account deficit, while a simultaneous output growth may limit the widening of the current account deficit assuming no deterioration in the production structure in favor of imported inputs. Moreover, the use of commercial loans in investments may first widen the current account deficit due to partial reliance on external funds and/or utilizing imported inputs in investment. However, the subsequent growth in output capacity will curb the widening of the current account deficit by supporting supply. Besides, increased output capacity may also promote exports, which will reduce the current account deficit. In case firms' loan constraints are binding for exports, a rise in commercial loans may directly cause lower current account deficit through growth in exports.

The Turkish Evidence

Table 1 summarizes the results of a simple regression analysis based on quarterly data over the 2003Q2-2015Q2 period for Turkey.² According to the results, the GDP growth stands out as an important explanatory variable for the current account balance. Moreover, the real exchange rate has a significant effect on the current account deficit excluding energy and gold. The change in total loans to the GDP, which is included in columns 2 and 6, is also found to be statistically significant with negative effects on the current account balance. In addition to consumer loans, commercial loans are added to equations in columns 3 and 7, while commercial loan share is included in columns 4 and 8 in order to handle the multicollinearity problem that would possibly arise from the high correlation of these two loan types. Accordingly, the current account balance seems to be related to loans mostly via consumer loans. In other words, an increase in consumer loans has a statistically significant negative effect on the current account deficit, whereas an increase in commercial loans has no significant effect on the current account balance.

Table 1. Relationship between Loan Growth and Current Account Deficit in Turkey

	Current Account Deficit/GDP				Current Account Deficit (excl. energy and gold)/GDP			
	1	2	3	4	5	6	7	8
Current Account Deficit/GDP (-1)	0.810*** (0.072)	0.661*** (0.081)	0.625*** (0.085)	0.591*** (0.101)	0.729*** (0.142)	0.609*** (0.169)	0.613*** (0.152)	0.627*** (0.162)
GDP Growth	-0.259*** (0.091)	-0.263*** (0.074)	-0.212*** (0.073)	-0.194*** (0.071)	-0.136*** (0.040)	-0.157*** (0.037)	-0.163*** (0.047)	-0.119*** (0.034)
Real Effective Exchange Rate (-1)	-0.023 (0.022)	-0.027 (0.022)	-0.009 (0.028)	0.005 (0.026)	-0.030* (0.015)	-0.036** (0.016)	-0.038* (0.022)	-0.026 (0.016)
Change in Total Loans/GDP (-1)		-0.107*** (0.038)				-0.055** (0.025)		
Change in Commercial Loans/GDP (-1)			-0.040 (0.067)				-0.067 (0.051)	
Change in Consumer Loans/GDP (-1)			-0.423* (0.231)	-0.543*** (0.168)			-0.024 (0.161)	-0.226** (0.094)
Share of Commercial Loans (-1)				0.034 (0.054)				-0.016 (0.026)
Constant	1.713 (2.497)	2.331 (2.431)	0.208 (3.093)	-3.902 (5.851)	3.298* (1.638)	4.452** (1.849)	4.708* (2.481)	4.415* (2.585)
Number of Observations	48	48	48	48	48	48	48	48
R ²	0.71	0.75	0.76	0.76	0.68	0.71	0.71	0.70

*, **, and *** denote significance at 10 percent, 5 percent and 1 percent, respectively. Standard errors are in parentheses. (-1) denotes lagged value of the respective variable.

The fact that the effects of consumer and commercial loans on the current account deficit are different also entails informative value regarding the measures to be taken for the current account balance. The findings suggest that controlling total loan growth mostly by limiting consumer loans may improve the current account balance. Accordingly, the decelerating consumer loans and robust commercial loans, which are backed by the liquidity policies adopted by the CBRT and the macroprudential measures enforced by the BRSA to limit consumer loans are assessed to have a positive impact on the current account balance.

² For further details, see Box 5.2, Inflation Report 2014-III and Alioğulları et al. (2015a).

International Findings

There are only a few studies in the literature, which examine the relationship between loan composition and the current account deficit. Coricelli et al. (2006) analyze the macroeconomic effects of consumer loans at quarterly and monthly frequencies for seven European countries including Turkey over the 1999-2004 period. Accordingly, the study finds that consumer loans have a statistically significant negative impact on the external balance in Turkey, while commercial loans improve the external balance. Büyükkarabacak and Krause (2009) analyze the relationship between loan composition and the trade balance for 18 emerging economies including Turkey over the 1987-2005 period and conclude that consumer loans worsen the trade balance while commercial loans have a positive effect. In order to represent the loan variable, the authors use stock data of loans over the GDP, which may be problematic as the external trade balance is a flow variable. Hence, this study prefers to construct an alternative measure, which is a flow variable. Accordingly, the change in loan stock to the GDP ratio is used to analyze the relation between loan growth and the current account deficit. In fact, by using the changes in the loan stock to the GDP, Mian et al. (2015) analyze the macroeconomic effects of consumer loans for a large group of countries and find that an increase in consumer loans weakens economic growth; raises unemployment; and deteriorates the external trade balance.

To take a closer look at the relationship of loan composition with the current account deficit on an international scale, BIS data are employed on annual consumer and commercial loans for the 1990-2013 period.³ Chart 3 presents international evidence on the relationship between loan growth and the current account deficit.

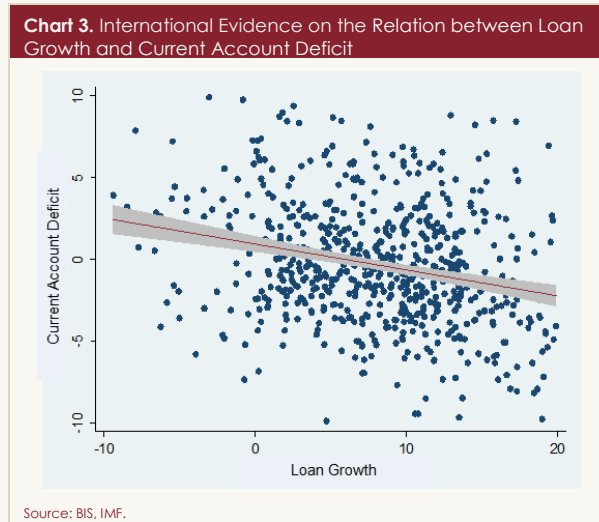


Table 2 shows the results of the analysis. Accordingly, consumer loans have a statistically significant negative effect on the current account balance, which is also economically meaningful. Commercial loans, on the other hand, are insignificant in some specifications, while they are observed to have a positively significant effect in some others. These findings are consistent with previous results pertaining to other countries and the above evidence presented for Turkey.

³ Countries included in the dataset are Australia, Austria, Belgium, Canada, China, Czech Republic, Denmark, Finland, France, Germany, Hungary, India, Indonesia, Italy, Japan, Korea, Netherlands, Norway, Mexico, South Africa, Spain, Sweden, Poland, Thailand, Turkey, UK and USA. For further details, see Alioğulları et al. (2015b).

Table 2. The Dynamic GMM Estimation Results of the International Evidence on the Relationship between Loan Growth and Current Account Deficit

	Current Account Deficit/GDP				
	(1)	(2)	(3)	(4)	(5)
Lagged Value of the Current Account Deficit/GDP	0.47*** (0.050)	0.44*** (0.075)	0.43*** (0.075)	0.43*** (0.076)	0.32*** (0.078)
GDP Growth	-0.043 (0.037)	-0.088** (0.042)	-0.087** (0.043)	-0.032 (0.047)	0.030 (0.057)
Real Effective Exchange Rate	-0.036** (0.015)	-0.039*** (0.015)	-0.038** (0.015)	-0.025 (0.016)	-0.030* (0.016)
Change in Consumer Loans/GDP	-0.256*** (0.052)	-0.238*** (0.066)	-0.245*** (0.068)	-0.248*** (0.076)	-0.164*** (0.079)
Change in Commercial Loans/GDP	0.015 (0.011)	0.031*** (0.012)	0.033*** (0.012)	0.033*** (0.011)	0.008 (0.032)
Terms of Trade		0.067*** (0.024)	0.062** (0.025)	0.068*** (0.026)	0.045* (0.025)
Volatility in Terms of Trade			0.130* (0.076)	0.131* (0.078)	0.071 (0.078)
Change in Gross Government Debt/GDP				0.021 (0.015)	0.011 (0.015)
Real Interest Rates					0.099 (0.065)
Number of Observations	613	339	319	306	206

*, **, and *** denote significance at 10 percent, 5 percent and 1 percent, respectively. Standard errors are in parentheses.

In conclusion, both the Turkish case and the international evidence suggest a significant relationship between consumer loans and the current account balance. Accordingly, an increase in the change in consumer loans to the GDP ratio drives the current account deficit higher. These results highlight the importance of the CBRT's framework, which has been in effect since end-2010 to observe financial stability, and the macroprudential measures adopted by the BRSA in bringing loan growth to reasonable levels and changing the loan composition in favor of the current account balance.

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