Financial Stability Report

May 2014

Volume 18

TÜRKİYE CUMHURİYET
MERKEZ BANKASI

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CENTRAL BANK OF THE REPUBLIC OF TURKEY

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This report, which is aimed at informing the public, is based mainly on March 2014 data. Nevertheless, the Report includes developments and evaluations up to its date of publication in Turkish. The full version of this text is available on the CBRT website. The CBRT cannot be held accountable for any decisions made based on the information and data provided therein.

Foreword

The normalization of the monetary policies of central banks in advanced economies continues to have an impact on global capital flows. It is important for emerging economies to reinforce financial stability in their countries in the light of the new phase that the normalization process is likely to take in 2015 once the Fed starts interest rate hikes. Since the issue of the Financial Stability Report in November 2013, the Turkish financial system has remained resilient against fluctuations at the national as well as international level and there has been no significant change in its risk profile. Turkey's financial system is expected to gain further strength and to operate effectively even under adverse conditions, with the contribution of the macro-prudential measures introduced by the relevant authorities.

The Central Bank's recent evaluations of financial stability as a complementary factor to the Bank's primary objective of price stability are presented in this 18th issue of the Financial Stability Report. I hope that the report, discussing the national and international developments that are likely to affect Turkey's financial system as well as the Turkish banking system's resilience against prospective shocks, will be of benefit to all readers.

Erdem BAŞÇI
Governor

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Overview

Since the issue of the previous Financial Stability Report in November 2013, the normalization process in the Fed's monetary policy has continued to have an adverse impact on capital flows towards Emerging Market Economies (EMEs) and led EME central banks to opt for tightening in their monetary policies to restore stability to financial markets. In this context, capital flows to Turkey have also weakened and volatility in exchange rates and financial markets has increased due to the contribution of country-specific uncertainties. Taking into account the relative deterioration in the inflation outlook, the CBRT delivered a strong and front-loaded tightening in its monetary policy in January 2014. Thanks to the CBRT's cautious stance, macroprudential measures that took the steam out of consumer credit growth, the relative easing of uncertainties as regards the national economy, and the slight improvement in global risk appetite, concerns over financial stability have recently dissipated to a large extent.

For the upcoming period, the timing and pace of the Fed's rate hike will be the main determinant of capital flows to EMEs. The Fed is expected to start a gradual hiking of rates, probably in the second half of 2015. Furthermore, there are expectations that the European Central Bank may implement monetary expansion to counter deflationary pressures in the euro area. Despite this general positive outlook in terms of global liquidity, it is believed that it will be most beneficial for EMEs to reduce their external financing requirement over the medium term. In this framework, the resilience of the Turkish financial and non-financial sectors in the face of exchange rate, interest rate and financing shocks becomes more of an issue for financial stability.

A reasonable share of core liabilities in overall funding is of utmost importance for the resilience of the banking system in the face of volatilities in domestic and international markets over the medium and long term. In this context, the CBRT closely monitors developments in the loan-to-deposit ratio. If deemed necessary, the Bank may use the remuneration of required reserves as a tool in bringing the loan-to-deposit ratio to desired levels.

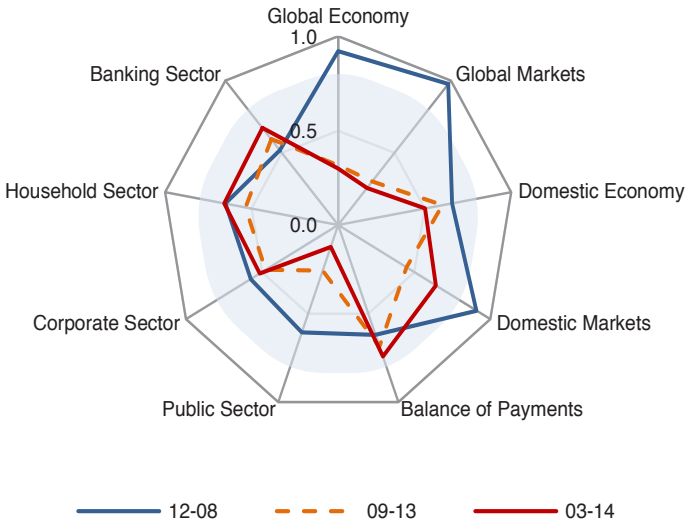
The assets and liabilities of the non-financial sector in Turkey are evolving in such a way as to contribute positively to financial stability. Household indebtedness, which increased in recent years as interest rates recorded historic lows and loan maturities lengthened, has recently assumed a more reasonable growth path, thanks to the contribution of macroprudential measures. Accordingly, a noteworthy slowdown has taken place, particularly in individual credit cards and vehicle loans.

Although corporate sector liabilities increased due to the depreciation of the TL, annual growth rates of both TL and FX-denominated corporate loans have started to record reasonable levels. The long-term maturity structure of external financial liabilities that are limited relative to domestic financial liabilities and the favorable external debt rollover ratio underpin the corporate sector's financial outlook.

The most outstanding development in household and corporate sector assets has been the rise in FX deposits. The rise in real persons' FX deposits predominantly stemmed from large deposit accounts and does not reflect the overall saving tendency of households. Moreover, the rise in FX savings deposits was mainly driven by the uptrend in currency swap transactions as of the second half of 2013. When this effect is excluded, the shift from TL to FX deposits is seen to be rather limited. Similar to those with real persons, currency swaps with legal persons also increased.

When the risks borne by the banking sector are evaluated from an international as well as a national perspective, there was no remarkable deterioration in loan quality in general during the first half of 2014. The same approach demonstrates that the sector has adequate liquidity buffers against any possible liquidity crunch and that the susceptibility to interest rate risk is on the decline. The macro scenario analysis based on the fluctuations caused by the 2008 financial crisis suggests that the deterioration in the NPL ratio and the capital adequacy of the sector would remain limited and the Capital Adequacy Ratio (CAR) of the sector would stand above the legal requirements.

Financial Stability Map[1,2]



(1) The closer a sector is to the core, the more the sector contributes favorably to financial stability. The analysis comprises a time-series for each sub-sector. Cross-sector comparison can be made only in terms of the direction of change recorded in the positioning in relation to the core.
(2) For the methodology used in the chart, please see Financial Stability Report (FSR) v.13, November 2011-Special Topic IV.10.

The chart above is shaped by our assessments and offers a schematic reflection of the developments in financial stability in Turkey. Accordingly, while favorable developments in the global economy have been limited, improvement in global markets has been relatively stronger in the last six months. In the same period, the domestic indicators of the 'public sector' and 'domestic economic developments' have underpinned financial stability in Turkey. Notwithstanding, the fluctuations in domestic markets and high current account deficit had their negative shares. Nevertheless, the current downward course of consumer loans heralds a notable improvement in the current account deficit in 2014.

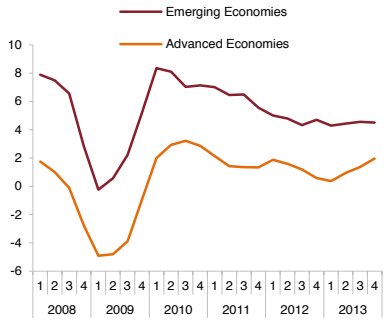
I. International and Domestic Developments Affecting Financial Stability

I.1. International Developments

The normalization process in the Fed's monetary policy on the back of the economic recovery had an adverse impact on capital flows to emerging markets. While emerging market currencies have generally depreciated, central banks of emerging economies have introduced monetary tightening measures to restore financial stability. While volatile capital flows and tight monetary policies restrict domestic demand in emerging markets, the positive economic outlook in the US and the euro area's exit from the recession underpin growth through external demand. Even if uncertainties have dissipated over the Fed's termination process of asset purchases, the timing and speed of interest rate hikes will be a determining factor of capital flows to emerging markets. However, the rate hikes are expected to be measured and start in the second half of 2015 as accommodative monetary policy still remains important for recovery in the US, the improvement in the employment market is yet to reach the desired level and inflation still hovers below the target. Meanwhile, there are those who expect the European Central Bank (ECB) to adopt monetary easing due to the deflationist pressures in the euro area. Moreover, the normalization process of the US monetary policy fuels the external borrowing risk of emerging economies; thus, sectors' resilience against exchange rate and interest rate shocks become more important with respect to financial stability in these countries.

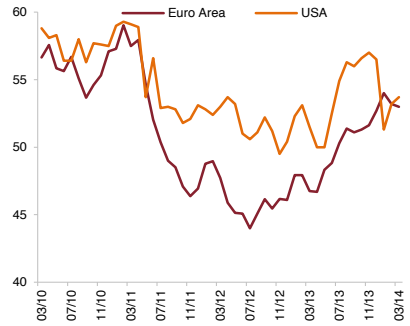
Recovery in global economic activity is mainly driven by advanced economies. While growth rates of advanced economies displayed an upward trend throughout 2013, those of emerging economies remained flat (Chart I.1.1). The rise in growth rates of advanced economies can mainly be attributed to the recovery in the US economy and the euro area's exit from stagnation. The manufacturing industry PMI indices in

Chart I.1.1
Global Growth Rates[1]
(Percent, Annual)



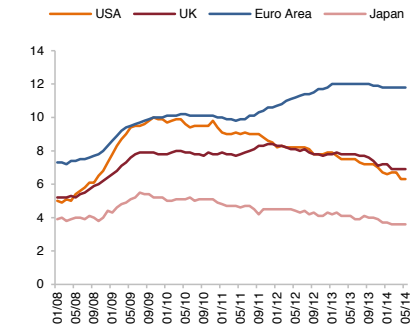
(1) Weighted by each country's share in global GDP.
Source: Bloomberg, CBRT.

Chart I.1.2
Manufacturing Industry PMI Indices



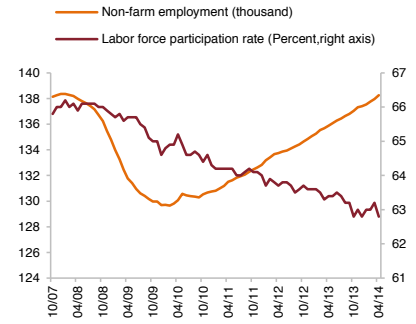
Source: Markit

Chart I.1.3
Unemployment Rates in Selected Advanced Economies (Percent)



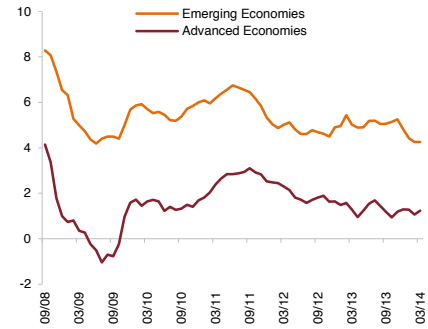
Source: Bloomberg

Chart I.1.4
Non-Farm Employment and Labor Force Participation Rates in the USA



Source: US Department of Labor

Chart I.1.5
CPI Inflation in Advanced and Emerging Economies (Percent, Annual)



Source: Bloomberg

the USA and the euro area suggest that the contribution of advanced economies to the global growth will continue (Chart I.1.2). The recovery in advanced economies, especially in the euro area, is expected to underpin growth rates of emerging economies through external demand. Meanwhile, growth in advanced economies is still vulnerable and mostly relies on accommodative monetary policies. The timing of an exit from those accommodative monetary policies and the interest rate hikes are important factors with respect to sustainability of recovery in economic activity.

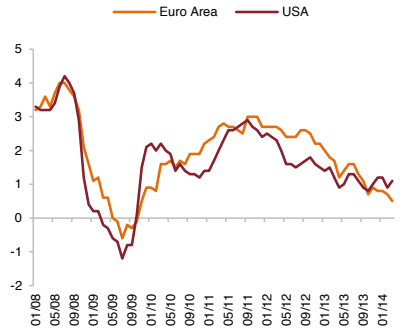
The rise in growth rates of advanced economies led by the US economy had positive reverberations on the labor market. As non-farm employment increased in the USA, the US unemployment rate fell to 6.5 percent in April 2014 (Chart I.1.3). Hence, the downtrend in labor force participation rates played an important role in the drop in the US unemployment rates (Chart I.1.4). The rise in the number of part-time workers and people who have been unemployed for more than six months suggest that the improvement in the US labor market is not a permanent one. Meanwhile, unemployment rates in the euro area are still high and remain flat.

Despite the favorable growth performance in advanced economies, inflation rates are still below the targets. Inflation rates are below the targets due to the global economic activity hovering below the pre-crisis levels coupled with the absence of a demand-driven pressure on commodity prices stemming from the slowdown in emerging markets (Chart I.1.5). Wages in the USA do not pose any upward pressure on inflation (Chart I.1.6). This suggests that despite the recovery in economic activity, there is still a significant amount of idle capacity in the USA. The low inflation trend in the euro area fuels concerns over a deflation threat. While low inflation in the USA prevented the Fed from raising interest rates earlier, the deflation threat in the euro area urges the ECB to question the monetary easing option.

Despite the recovery in economic activity, the USA and the euro area still face a number of risks that could undermine financial stability. Amid the USA's low interest rate environment, investors are in search of returns, the demand for risky financial products is on the rise and lending standards are becoming looser. The yield spread between US Treasury bonds and corporate bonds is at historically low levels. The ratio of high-yield corporate bonds and credits with loose standards in the USA is higher compared to the pre-crisis period (Chart I.1.7). The lingering weakness in the balance sheets of banks and firms in the euro area is adversely affecting the functioning of the lending market (Chart I.1.8). The high corporate sector indebtedness and low economic growth push non-performing loan amounts upwards, which in return prevents the credit channel from functioning properly and curbs banks' lending capacities and profitability.

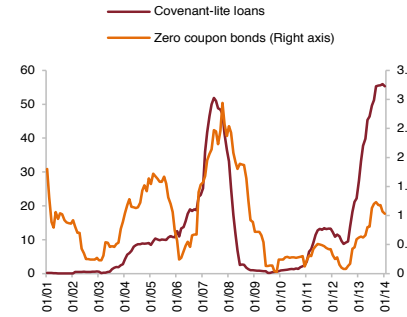
In response to the continued positive outlook in economic indicators in the US economy, the Fed started to taper asset purchases in January. In May 2013, the Fed signaled that it would start tapering asset purchases and did so in January 2014, and continued the tapering in the following months. As uncertainties pertaining to the Fed's policy eased, the long-term government bond rates followed a flat trend as of end-January (Chart I.1.9). In the upcoming period, the primary risk factor is expected to be the Fed's timing and speed of rate hikes. Meanwhile, in its March meeting, the Fed announced that it had no concrete timetable to raise the federal funds rate and made no reference to the unemployment rate of 6.5 percent as a threshold to consider tightening. Forward rates based on the Fed's federal funds rate point to expectations of a rate hike in 2015 that is concurrent with the FOMC members' forecasts (Chart I.1.10). The timing and speed of the Fed's rate hikes are not only important with respect to the recovery in the US economy but also important with respect to the possible unfavorable reverberations that these can have on capital flows to emerging markets.

Chart I.1.6
Inflation rates in the USA and the Euro Area
(Percent, Annual)



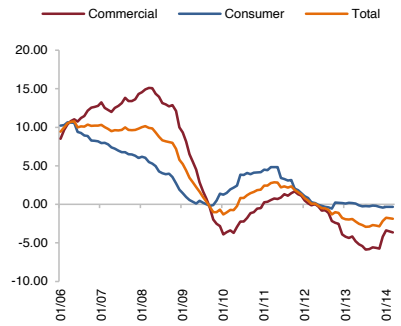
Source: Bloomberg

Chart I.1.7
Issue of High-Yield Bonds and Leveraged Loan Issuance with Lower Standards
(12-month issuance as a percent of market size)



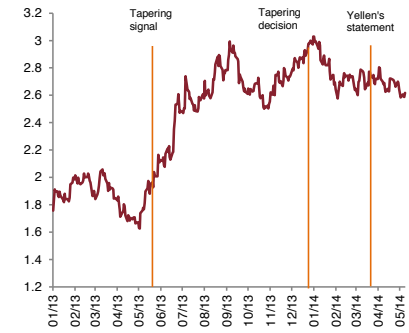
Source: IMF Global Financial Stability Report

Chart I.1.8
Loan Growth in the Euro Area
(Percent, Annual)



Source: ECB

Chart I.1.9
10-year US Treasury Bond Yield
(Percent)

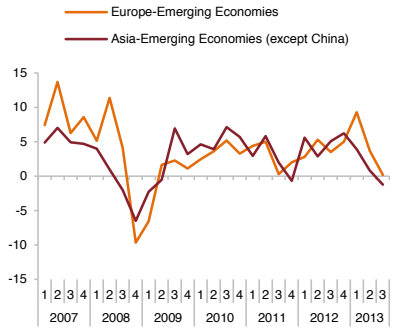


Source: Bloomberg

Chart I.1.10
Interest Rate Forecasts of FOMC Members
(End-year, percent)

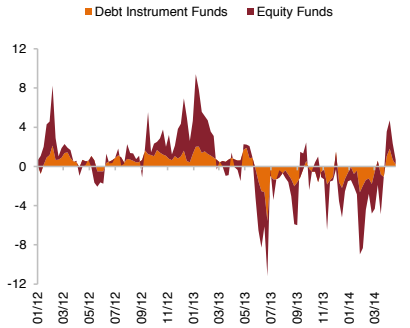
Source: Fed

Chart I.1.11
Capital Flows to Emerging Economies
(Percent GDP)



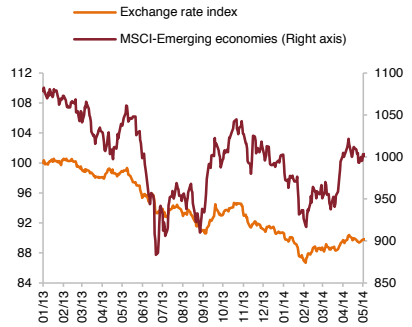
Source: IMF, World Economic Outlook (WEO)

Chart I.1.12
Weekly Portfolio Flows to Emerging Economies
(Billion USD)



Source: EPFR

Chart I.1.13
Exchange Rate* Index and MSCI Emerging Markets Index



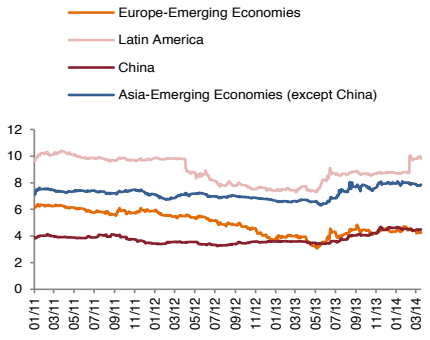
*The Exchange Rate Index is compiled by taking the arithmetic mean of the US dollar equivalent of local currencies of Argentina, Brazil, Chili, Colombia, Czech Republic, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Peru, the Philippines, Poland, Russia, South Africa, Thailand and Turkey. (01.01.2013=100)
Source: Bloomberg, CBRT Calculations

Capital outflows from emerging markets, which started with the Fed's signal in May 2013 that it would start tapering asset purchases, continued in the first quarter of 2014. The risk appetite towards emerging markets decreased and capital outflows from emerging economies significantly accelerated due to normalization signals in the Fed's monetary policy (Chart I.1.11 and I.1.12). However, portfolio flows towards emerging markets restarted in April. This rebound is believed to have been underpinned by expectations that the Fed will not start rate hikes in the near future and the low interest rate environment will continue. The weak portfolio flows and tighter financial conditions are adversely affecting growth in emerging markets by restricting domestic demand. In the upcoming period, the timing and speed of the Fed's rate hikes, the ECB's possible asset purchases, and various geopolitical risks will be the factors affecting capital movements.

Volatility in financial markets increased due to the outflows from emerging countries. Capital outflows led to a depreciation of national currencies in these countries (Chart I.1.13). Countries with rapid credit growth, high current account deficits and high inflation were more seriously affected by the fluctuations of May 2013. The fluctuation in January, when the Fed first started trimming asset purchases, was mainly attributed to concerns over growth in emerging markets and the geopolitical developments. The emerging economies raised interest rates to keep inflation under control and to curb the macro-financial risks. Financial markets slightly recovered after January as uncertainties pertaining to the Fed's timing for the termination of asset purchases were eased and monetary policies of emerging countries were tightened. As expectations grew that the Fed would not start raising funds right away and the rate hike would be a gradual one, the portfolio flows towards emerging markets started again in the second quarter; meanwhile government bond yields decreased and depreciation in national EME currencies were partly compensated (Chart I.1.14).

The normalization process of the US monetary policy fuels the external borrowing risk of emerging economies; therefore, resilience against the exchange rate and interest rate shocks become more important with respect to financial stability in these countries. As a result of the unorthodox monetary policies introduced in advanced economies in the aftermath of the global financial crisis, global liquidity increased, external borrowing opportunities for emerging markets proliferated and rapid credit growth and debt ratios climbed (Table I.1.1). Following the crisis, amid a low interest-rate environment allowing lower borrowing costs, corporate sectors of emerging economies increased their leverage ratios and raised their debts substantially between 2009 and 2013. However, deceleration in economic growth restricts profitability and the debt service capacity of firms. Meanwhile, the rise in exchange rates and interest rates are pushing firms' financial costs up. In the upcoming period, depending on the course of the monetary policies of advanced economies, emerging economies' susceptibility to exchange rates and interest rates will continue to be an important risk factor.

Chart I.1.14
Government Bond Yields in Emerging Markets
(10-Year)



Source: IMF, World Economic Outlook (WEO)

Table I.1.1 Change in the Gross Debt Levels and Banking Sector Credits of Selected Emerging Economies [1]
(Percent of GDP)

	Brazil	China	Indonesia	S. Africa	India	Mexico	Poland	Russia	Thailand	Turkey
Government	2.9	5.4	-7.1	18	-7.8	3.6	10.4	5.5	8	-4.1
Households	8.2	13.6	4.2	-5.4	-1.8	0.8	5	3.6	24.1	7.1
Corporate Sector	7.2	42	2.3	-3.2	2.8	1.4	2.3	3.4	1.1	11.4
Banking Sector Loans	22.8	28.8	5.7	-12.7	0.5	1.1	3.6	5.4	20.6	24.2

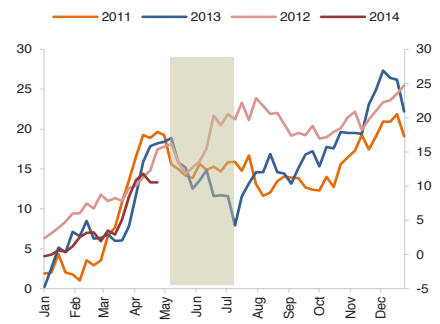
(1) 2008 -2013 year-end change or change as of 2008- latest data
Source: IMF Global Financial Stability Report

I.2 Domestic Developments

The global uncertainties pertaining to monetary policies, weak capital flows towards emerging economies, uncertainties in the first quarter and the resulting rise in risk premiums in national markets have been the main factors affecting Turkey's economic outlook. Meanwhile, exchange rate movements, the relative deterioration in the inflation outlook and volatility in financial markets have been the factors affecting the outlook of macro-financial stability. However, there has been a partial decline in the volatility in financial markets as well as in the risk premium, bolstered by the sustained cautious stance in the monetary policy and abated uncertainties.

The decline in capital flows to emerging economies continued due to the uncertainties pertaining to global monetary policies and the relatively low growth rates of emerging markets. In the first quarter, capital flows remained limited as the Fed continued to gradually trim asset purchases and postponed rate hikes while the prevailing monetary policy framework was retained in the euro area. Although Turkey experienced portfolio outflows mainly due to elevated uncertainties and the rise in risk premium in the first quarter, recently, there has been some acceleration in portfolio inflows on account of the tight monetary policy stance and the eased uncertainties in the national economy, but the amount of inflows is still lower than those in the past years (Chart I.2.1).

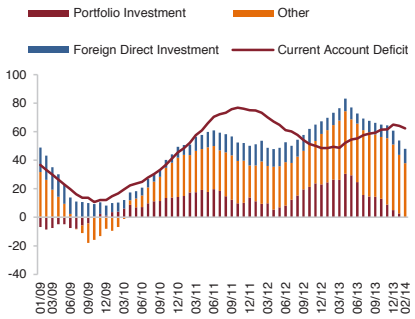
Chart I.2.1
Cumulative Portfolio Flows[1] (Billion USD)



(1) Calculated by weekly net portfolio flows. Includes the data of repo, GDDS and securities portfolio as well as banks' off-balance sheet FX position.
Source: BRSA, CBRT

Measures taken towards rebalancing the current account deficit have started to yield results. The recent non-accommodative monetary policy stance, the tightening in financial conditions and the macroprudential measures taken have helped achieve reasonable levels in credit growth and the demand for imports have decreased pinned by the general deceleration in the domestic private sector demand. Meanwhile, external demand and exchange rates are supporting exports and net exports is contributing to growth. The current account deficit financing is balanced (Chart I.2.2).

Chart I.2.2
Current Account Deficit and Financing Items[1]
(12-Month Cumulative Billion USD)

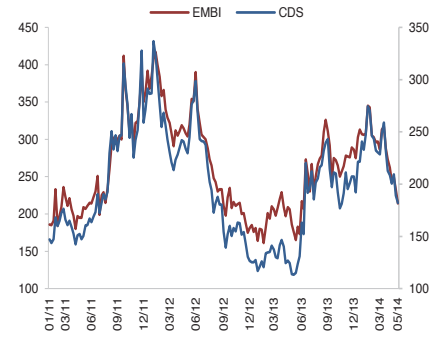


(1) Portfolio includes equities and government domestic debt securities. Other is composed of the total of short and long-term net loans of banks and other sectors, bonds issued abroad by banks and the Treasury, and deposits at banks.
Source: CBRT

Uncertainties in global financial markets and the elevated risk premiums led to fluctuations in nominal exchange rates over the last year (Chart I.2.3). The depreciation in the Turkish lira became more remarkable with the Fed's exit signals from its quantitative easing policy as of May 2013. The uncertainties in the domestic market at the end of 2013 led to a second depreciation episode and a rise in volatility in Turkey. Nevertheless, owing to the front-loaded non-accommodative monetary policy steps taken and the signals of normalization in global markets, the Turkish lira appreciated and the implied volatility decreased (Chart I.2.4 and I.2.5). The normalization in global markets, the sustained cautious stance of the monetary policy and an exchange rate level that is stable and consistent with economic fundamentals are expected to contribute to financial stability in the upcoming period.

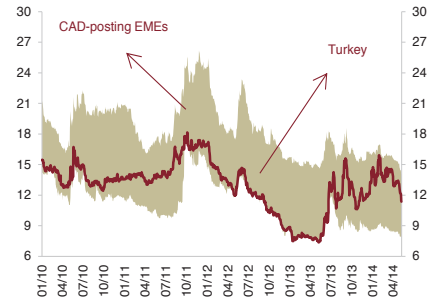
The nominal exchange rates, which followed a moderate trend from end-2012 till the first quarter of 2013, started an uptrend as of April 2013. This uptrend was reversed after the MPC decisions of 28 January 2014 and dropped to the end-2013 values by mid- May in 2014. In line with these developments in nominal exchange rates, the downtrend in real effective exchange rates observed since April 2013 was replaced by an uptrend as of January 2014. An overall analysis of the period -excluding the recent move that is likely to be temporary- suggests that the developments in real effective exchange rates and the recovery in external demand will contribute to the narrowing of current account deficit and support economic growth (Chart I.2.6 and I.2.7).

Chart I.2.3
EMBI-Turkey and Turkey's 5-Year CDS Prices



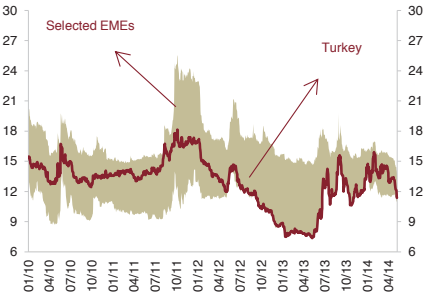
Source: Bloomberg

Chart I.2.4
Implied Volatility of Exchange Rates[1]
(12-Month Ahead)



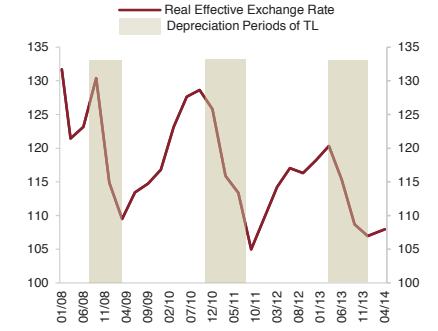
(1) Emerging economies posting current account deficits include Brazil, Czech Republic, Indonesia, South Africa, Colombia, Hungary, Mexico, Poland, Romania, Chile and Turkey
Source: Bloomberg

Chart I.2.5
Implied Volatility of Exchange Rates[1]
(12-Month Ahead)



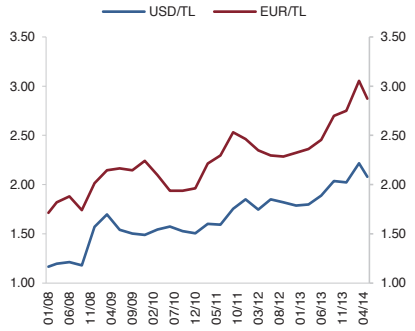
1) Selected emerging economies include Brazil, Indonesia, South Africa, India and Turkey.
Source: Bloomberg

Chart I.2.6
Real Effective Exchange Rate
(CPI-based, 2003=100)



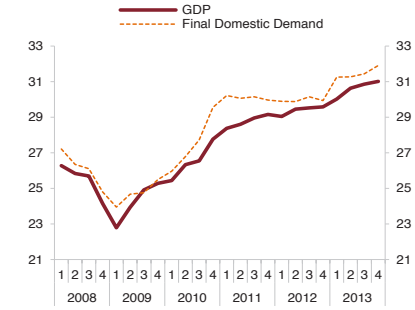
Source: CBRT.

Chart I.2.7
Nominal Exchange Rate
(CPI-based, 2003=100)



Source: CBRT.

Chart I.2.8
GDP and Final Domestic Demand
(Seasonally Adjusted, Billion TL, Deflated by 1998 prices)

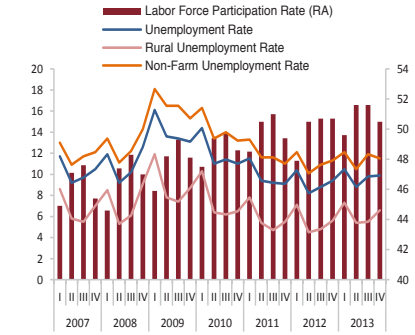


Source: CBRT, TURKSTAT.

Chart I.2.9
Contributions to Quarterly GDP Growth
(Seasonally Adjusted, Percentage Point)

Source: CBRT, TURKSTAT.

Chart I.2.10
Unemployment and Labor Force Participation Rates



Source: TURKSTAT

The GDP, which grew by 4.4 percent in the final quarter of 2013 year-on-year, grew by 4 percent in 2013 in annual terms. While economic growth continued in the final quarter of 2013, albeit with some deceleration, the rise in final domestic demand slightly accelerated (Chart I.2.8). Data pertaining to the final quarter of 2013 suggest that the moderate rise in economic activity continues. A study of the components of economic activity indicates that private sector demand decreases. The decrease in the private sector demand mainly stems from private sector investments. Meanwhile, net exports and public demand are projected to compensate for the decrease in domestic private demand (Chart I.2.9). Public demand supports both consumption and investment demand. Should the downside risks on domestic demand continue for an extended period, those risks would support the disinflation process and contribute to the recent improvement in current account deficit. The weak private sector demand would also help attain reasonable growth rates in credit demand.

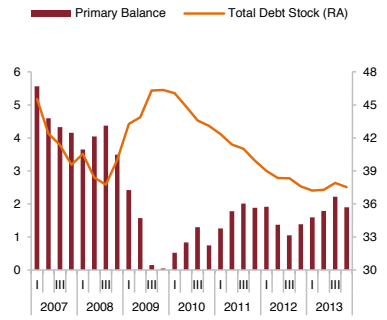
The positive trend in employment and unemployment indicators, which are important for the general economic outlook and macro-financial stability, continues. In the second quarter of 2013, unemployment ratios declined owing to the rise in non-farm employment observed as of the first quarter of 2013. The unemployment ratio reached the highest level of the year in the third quarter of 2013 on the back of the rise in rural and non-farm unemployment. In the final quarter of 2013, unemployment ratios remained almost the same as non-farm unemployment were unchanged quarter-on-quarter. There has been a significant improvement in total employment mainly due to the rise in non-farm employment and the relatively high level of labor force participation rates continued. Pulled by the positive development in employment ratios, unemployment continued to hover below 10 percent (Chart I.2.10).

The favorable outlook in the budget performance and public debt stock continues. Despite the partial deterioration in the general economic outlook, the public sector budget balance and the public debt stock indicators have a positive outlook. The downtrend in the ratio of the EU-defined nominal debt stock to GDP continues, the extension in maturities of debts continues and there is no significant change in the composition of the debt stock (Chart I.2.11 and I.2.12).

Recently, the upward risks to inflation became the primary factor in the course of key indicators pertaining to the national economic outlook and determining the monetary policy stance. The depreciation in the Turkish lira especially in the first quarter led to a rise in the core goods prices and, in turn, high inflation rates (Chart I.2.13). Moreover, the upward movement in food prices stemming from adverse weather conditions resulted in a partial deterioration in the inflation trend as well as in expectations. This change in inflation and expectations also influenced the pricing of financial assets; however, the tight monetary policy stance and expectations for a likely decline in inflation pressure brought along a partial correction in financial markets.

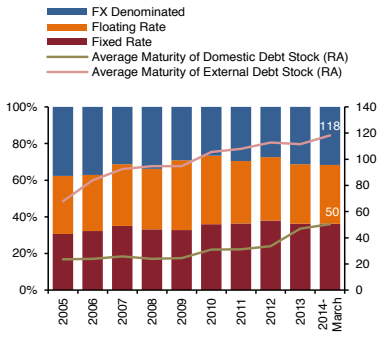
The tight monetary stance coupled with the recent improvement in risk premiums helped decrease interest rates across all maturities and achieve a flatter yield curve (Chart I.2.14).

Chart I.2.11
Central Government Budget Balance-Debt Stock
(Annualized, Ratio to GDP, %)



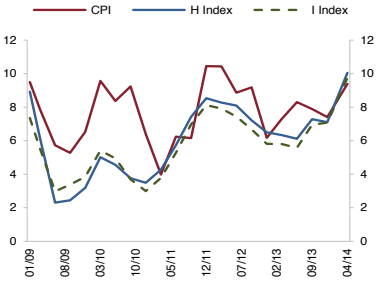
Source: Undersecretariat of Treasury, Ministry of Finance

Chart I.2.12
Composition of Central Government Debt Stock and Average Days to Maturity [1] (Month)



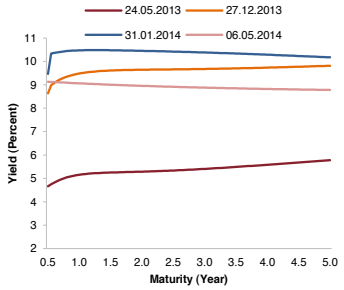
Source: Undersecretariat of Treasury.

Chart I.2.13
Price Indices (Annual Percentage Change)



Source: TURKSTAT.

Chart I.2.14
GDDS Yield Curve[1]
(Percent)



1) Calculated from the compounded returns on bonds quoted in BIST Bonds and Bills Market, by using ENS method.
Source: BIST, CBRT.

II. Non-Financial Sector and Financial Stability

II.1. Household Developments

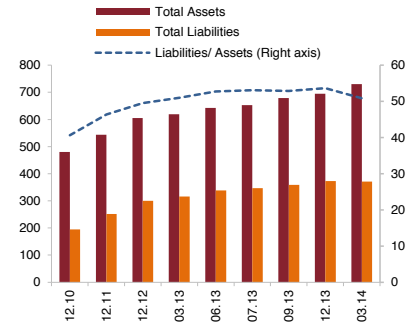
The ratio of household liabilities to household financial assets, which had been increasing since 2010, displayed a moderate decline in the last few months. This change mainly stemmed from the slowdown in retail loans in the last two quarters -constituting 91 percent of household liabilities- and the growth in household assets, especially in FX deposits (Chart II.1.1 and II.1.2).

The share of FX saving deposits in total assets increased due to the rise in the share of the US dollar in the total deposits as well as the valuation effect stemming from the depreciation of the Turkish lira. The rise in FX saving deposits in terms of US dollars mainly stems from the representation on the balance sheet of the derivatives contracts that the banks offer their customers as a substitute for TL deposits (Please see Box II.1.1).

On the back of the regulations that took effect in June 2009 restricting household FX borrowing[1] the share of FX liabilities of household's in total household liabilities fell to a negligible level (0.2 percent). As FX deposits and precious metal deposits account for more than one-fourth of households' financial assets, the recent depreciation of the Turkish lira had a positive impact on households' net assets.

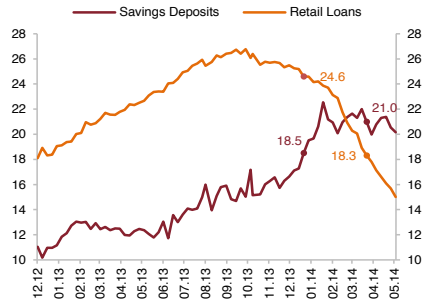
There has been no significant change in the composition of households' assets except for the tendency to shift from TL to FX in saving deposits (Table II.1.1). On the liabilities side, the share of credit card debts displayed a notable decline (Table II.1.2).

Chart II.1.1
Household Financial Assets and Liabilities
(Billion TL, Percent)



Source: BRSA, MKK, CMB, TOKI, CBRT

Chart II.1.2
Growth in Household Loans* and Deposits
(Annual Percentage Change)



Source: CBRT (Latest data: 09.05.14)
* Extended by domestic banks, credit cards included

Table II.1.1
Household Financial Assets

	09.13		03.14	
	Billion TL	Share	Billion TL	Share
Total Assets	**679.3**	**100**	**730.1**	**100**
TL Saving Deposits	341.1	50.2	351.4	48.1
FX Saving Deposits	139.9	20.6	181.4	24.8
- (Billion USD)	*68.7*		*84.1*	
Precious Metal Depo.	19.7	2.9	15.1	2.1
- (Billion USD)	*9.7*		*7*	
Bonds and Bills	17.2	2.5	18.9	2.6
- Government	6.3	0.9	7.1	1
- Private Sector	10.9	1.6	11.8	1.6
Mutual Funds				
- Pension	25.2	3.7	27.8	3.8
- Other	26.8	3.9	25.1	3.4
Equity Stock	38.5	5.7	37.1	5.1
Repos	2.9	0.4	2.8	0.4
Currency in Circ.	68	10	70.6	9.7

Source: MKK, CMB, CBRT

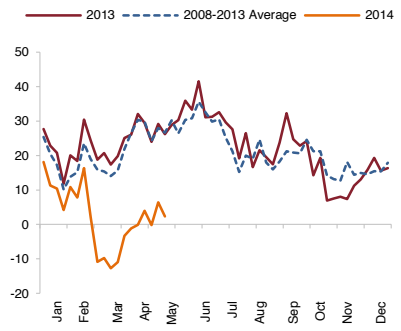
Table II.1.2
Household Financial Liabilities[1]

	09.13		03.14	
	Billion TL	Share	Billion TL	Share
Total Liabilities (Based on Type)	**359.3**	**100**	**371.4**	**100**
Housing	119.3	33.2	123.7	33.3
Vehicle	14.9	4.2	14.9	4.0
General Purpose + Other	126.3	35.2	136.7	36.8
Individual Credit Cards	87.7	24.4	84.2	22.7
Asset Management Companies' Receiv.	10.9	3.0	11.8	3.2
Total Liabilities (Based on Counterparty)	**359.3**	**100**	**371.4**	**100**
Banks	329.5	91.7	339.4	91.4
Financing Companies	7.0	1.9	7.6	2.1
TOKİ	11.8	3.3	12.6	3.4
Asset Management Companies	10.9	3.0	11.8	3.2

(1) Housing Loans include TOKI's receivables against house sales with installments.
Source: BRSA-CBRT, TOKI

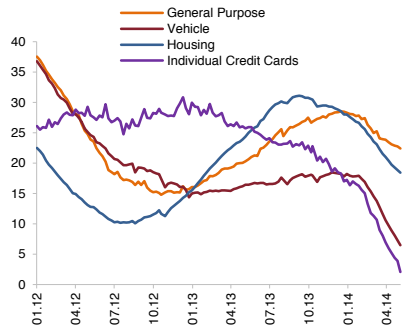
1 FX-indexed loans included.

Chart II.1.3
Retail Loan Growth
(Stock data, 4-week moving average, Annualized, Percent)



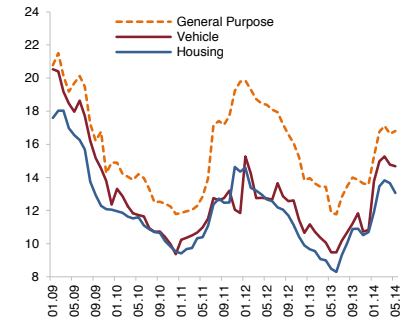
Source: CBRT (Latest data: 09.05.14)

Chart II.1.4
Retail Loan Growth by Type of Loan
(Stock Data, Annual Percentage Change)



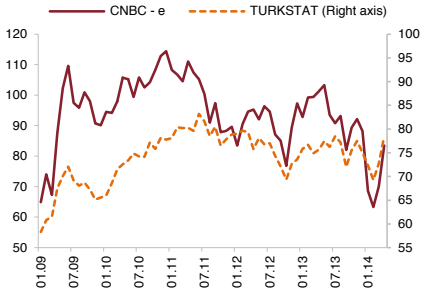
Source: CBRT (Latest data: 09.05.14)

Chart II.1.5
Consumer Loan Rates
(Percent)



Source: CBRT (Latest data: 09.05.14)

Chart II.1.6
Consumer Confidence Indices



Source: TURKSTAT- CBRT, CNBC-e (Latest data: 04.14)

The rapid uptrend in retail loans since the final quarter of 2012 terminated with the slowdown in the last two quarters. The retail loan growth, which dropped and remained below the previous years' averages as of the end of 2013, has been assuming negative values since February 2014. Despite the slight recovery in the second quarter, retail loan growth is still well below the previous years' averages (Chart II.1.3).

Housing and general purpose consumer loans increased rapidly as of the final quarter of 2012 as interest rates dipped to historic lows and loan maturities were extended. However, this trend was reversed in housing loans in the second quarter of 2013 and in general purpose and vehicle loans in the final quarter of the same year (Chart II.1.4).

The macro-prudential measures, which were introduced in the final quarter of 2013 to restrict consumer loans and the use of credit cards, helped decrease retail loan growth. The contraction in retail loans in the last two quarters was mainly driven by consumer loan rates, which started to climb in the second quarter of 2013, accelerated at the beginning of 2014 and reached the highest level in March 2014 (Chart II.1.5). The significant recovery in consumer confidence coupled with the slight drop in interest rates as of the second quarter of 2014 are likely to soften the downtrend in retail loans (Chart II.1.6).

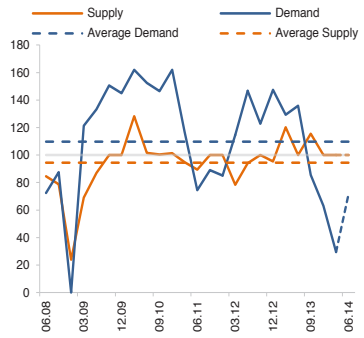
The results of the CBRT Bank Loans Tendency Survey for January-March 2014 suggest that the deceleration in retail loan growth is mainly driven by demand, albeit some discrepancies among different loan types. According to the survey results, demand for housing loans decreased sharply although credit standards remained basically the same for those loans which currently bear historically low credit risk; whereas both supply and demand decreased for consumer loans having a weaker collateral structure and relatively lower payment back ratios (Chart II.1.7, Chart II.1.8). The survey reveals that banks tightened their credit conditions because of the expectations pertaining to the general economic outlook and concerns over asset quality. Banks see diminished consumer confidence and expectations pertaining to the market in which investments/ expenditures will be made as the reason for the decline in demand.

The survey results for the second quarter of 2014 suggest that banks expect the deterioration in demand and retail loan standards to be more limited in both types of loans.

Recently, credit cards became the item of which the share in household liabilities decreased the fastest. The recent decline in credit card purchases on installments, which had been dragging the surge in the credit card balance for the last 5 years and made up more than half of the total credit card balance, was the main factor driving the fall in the share of credit cards (Chart II.1.9).

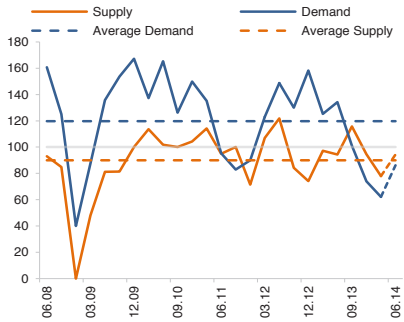
The gradual decline in credit card balances that started in the final quarter of 2013 accelerated on the back of the rise in risk weights in credit card balances with installment transactions as of October 2013 and the arrangements regarding the restriction of credit card purchases on installments that took effect in February 2014. Because of the arrangements, the share of credit card balances with installment transactions in total credit card balances started to decline as of the final quarter of 2013 (Chart II.1.10). This decline was also supported by the macroprudential measures and the fall in the share of consumer durables spending in total consumer spending.

Chart II.1.7
Supply and Demand for Housing Loans[1]
(Percent)



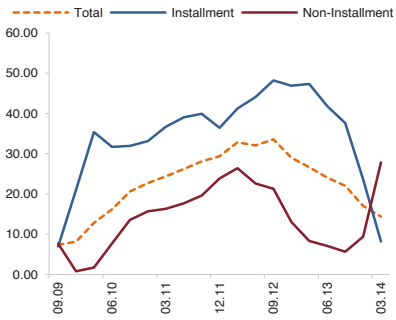
(1) Derived from the Bank Loans Tendency Survey. Values below 100 imply a tightening, values above 100 imply an easing.
Source: CBRT

Chart II.1.8
Supply and Demand for General Purpose Loans[1]
(Percent)



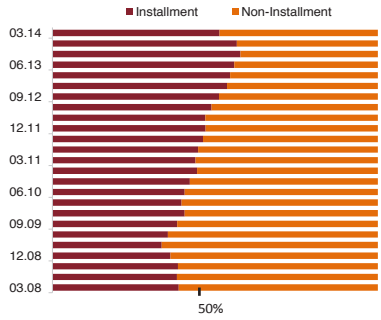
(1) Derived from the Bank Loans Tendency Survey. Values below 100 imply a tightening; values above 100 imply an easing.
Source: CBRT

Chart II.1.9
Individual Credit Card Balances
(Annual Percentage Change)



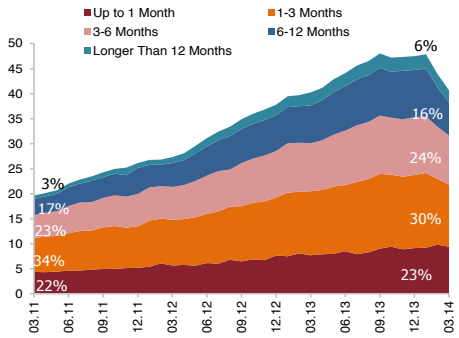
Source: CBRT (Latest Data: 09.05.14)

Chart II.1.10
Individual Credit Card Balances with and without Installment Transactions
(Percent)



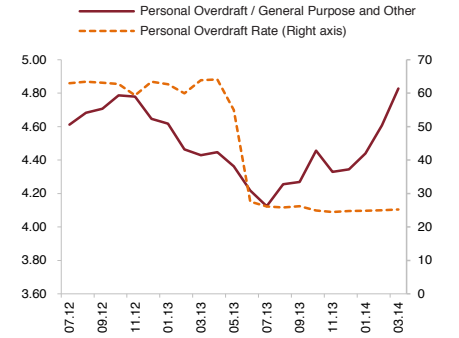
Source: CBRT

Chart II.1.11
Change in Individual Credit Card Balances with Installments
(Stock data, Based on Residual maturity, Billion TL)



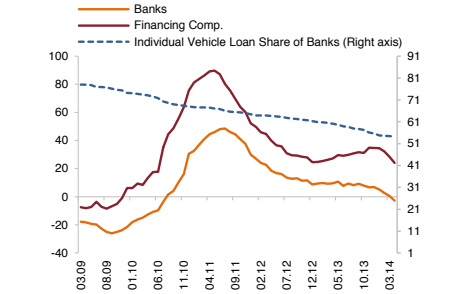
Source: CBRT

Chart II.1.12
Retail Overdraft Account Balance and Interest Rates
(Percent Share, Percent)



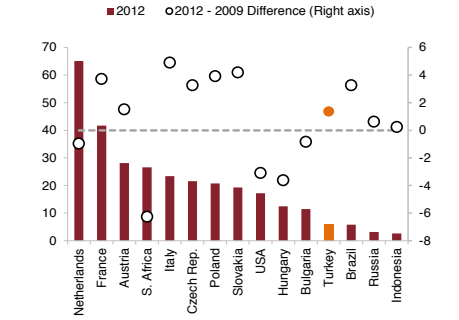
Source: CBRT

Chart II.1.13
Retail Automobile Loans
(Stock, Annual, Percent)



Source: CBRT, BRSA (Latest data: 04.14)

Chart II.1.14
Housing Loans to GDP Ratio in Selected Countries
(Percent)



Source: European Banking Federation, ECB, IMF Financial Soundness Indicators.

An analysis of the maturity structure of retail credit card balances with installment transactions shows that the share of credit card purchases on installments with a term longer than 6 months in the total balance with installment transactions, which was 20 percent in March 2011, climbed to 26 percent in September 2013 and was down to 22 percent in March 2014 owing to the macroprudential measures (Chart II.1.11). As the facility of making credit card purchases on installments with very long maturities was overruled, the current credit card balances with long maturities is expected to decrease gradually and the average maturity is likely to shorten.

The slowdown in consumer loan growth is more limited compared to the slowdown in credit cards utilization. Even if the recent arrangements regarding credit cards restricted the maximum term for consumer loans to 36 months, the consumer loan growth is still relatively strong pointing to the possibility that the contraction in the retail credit card balance might have been partly substituted by consumer loans.

While retail credit card growth slowed, personal overdraft account balances, whose interest rates were equaled to those of credit cards, displayed a growth faster than consumer loans and increased from TL 4.8 billion in the second quarter of 2013 to TL 6.3 billion at the end of the first quarter of 2014. However, the share of overdraft account balances in consumer loans and other types of loans is still below 5 percent (Chart II.1.12).

Finance companies, whose share in retail vehicle loans have been rising since 2008, dragged growth in this type of loan in 2013. However, growth in retail vehicle loans started to decline due to several reasons such as macroeconomic developments, the loan/ value ratio limit[2], introduced for automobiles, the maximum installment restriction of 48 months, the risk weight of 150-200 applied to vehicle loans with a loan period of more than one year and inclusion of financing companies in the reserve requirement coverage (Chart II.1.13).

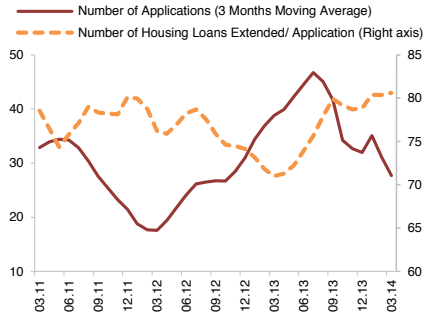
2 For Automobiles with an Invoice Value of TL 50 Thousand and Lower.

Despite the rapid growth in the value of housing loans in the last few years, the ratio of housing loans to GDP in Turkey is still lower compared to other countries. Moreover, the housing loans/ GDP ratio, which increased by less than 2 percent between 2009 and 2012, is not likely to display an outstanding change in the near future (Chart II.1.14). Demand for housing loans, which dragged growth in consumer loans in 2013, started to decelerate owing to the rise in interest rates (Chart II.1.15).

In the first quarter of 2014, housing sales dropped both in year-on-year and quarter-on-quarter terms (Chart II.1.16). The downtrend in the share of mortgaged property sales that started in June 2013 continued in this period as well. A breakdown of housing sale figures by quarters suggests that the ratio of financing through loans, which had presumably reached the highest level in the first half of 2013, is estimated to have fallen considerably in the second half of the year (Chart II.1.17). The weakened consumer confidence and increased interest rates particularly for longer term loans are thought to be the factors that triggered these developments.

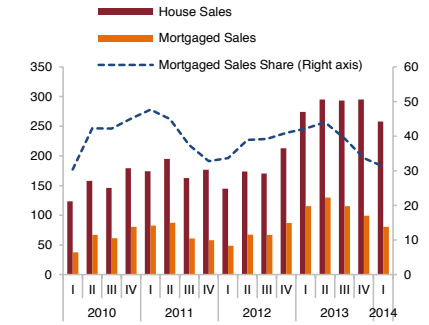
Despite the slowing in loans, the number of houses bought without using loans is still high. The moderate rate of growth in real house prices in 2011 and 2012 assumed a markedly stronger trend in 2013, which was attributed to housing purchases without loan utilization. As of end-2013, Turkey's inflation-adjusted house price index was among the most rapidly increasing indices across the countries analyzed (Chart II.1.18).

Chart II.1.15
Applications for Housing Loans and Housing Loans Extended
(Thousand, Percent)



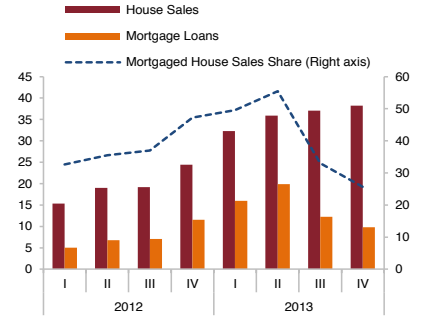
Source: CBRT

Chart II.1.16
Mortgaged Property Sales
(Flow Data, Thousand, Percentage Share)



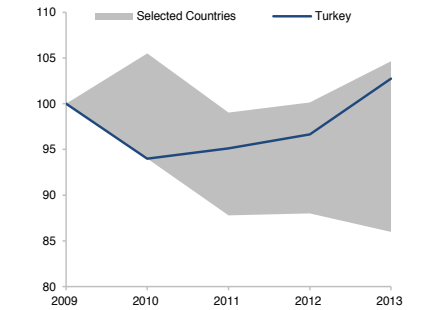
Source: TURKSTAT

Chart II.1.17
Housing Sales Financed Through Loans[1]
(Flow Data, Billion TL, Percentage Share)



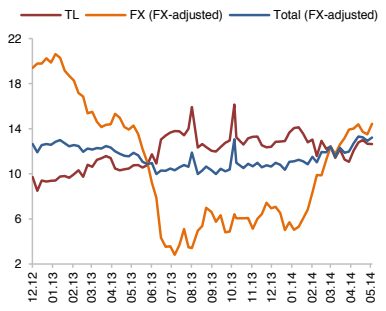
(1) Calculated based on unit square meter prices released by the CBRT, under the assumption that all the houses sold are 100 m^2.
Source: TURKSTAT, CBRT

Chart II.1.18
Inflation-Adjusted House Price Indices in 8 Selected Countries
(2009:100)



Source: Knight Frank Global House Price Index, OECD
Sample Countries: USA, Czech Republic, Indonesia, South Africa, India, Japan, Poland, Turkey.

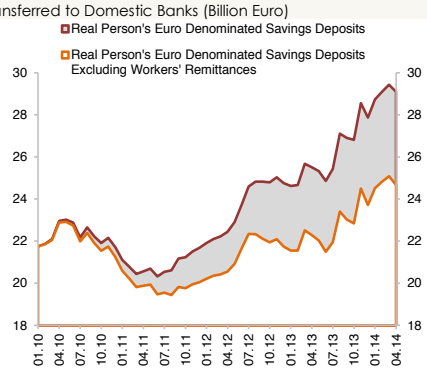
Chart II.1.19
TL-FX and Total Savings Deposits[1]
(Adjusted for Exchange Rate Effect, Annual Percentage Change)



(1)FX savings deposit has been adjusted for the exchange rate effect with the (0.6$+0.4€) currency basket.
Source: CBRT (Latest Data: 09.05.14)

Savings deposits, which make up the greatest portion of household financial assets, have been posting a growth originating predominantly from FX deposit accounts since the second half of 2013. As of March 2014, FX savings deposits accounted for approximately 25 percent of household financial assets. The depreciation of the Turkish lira has significantly catalyzed the rise in the TL equivalent of these assets. However, in exchange rate-adjusted terms, the growth rate of FX savings deposits has accelerated (Chart II.1.19). On the other hand, a significant amount of the rise in FX deposits was due to the fact that households substituted a certain amount of their TL deposits with currency swaps (Box II.1.1).

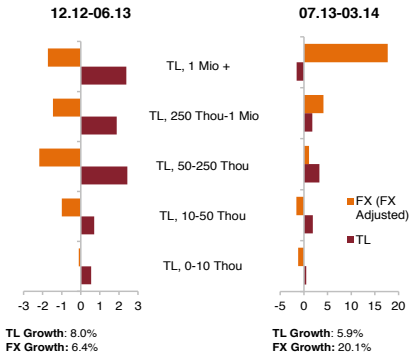
Chart II.1.20
Euro Deposits of Real Persons-Workers' Remittances Transferred to Domestic Banks (Billion Euro)



Source: CBRT

Another factor of the surge in FX deposits was the gradual reduction of workers' remittances accounts within the CBRT. In this scope, no new account was opened and accounts with due maturities were not renewed in 2013. Savings withdrawn from these accounts were transferred to the domestic banking system. For this reason, although Euro-denominated savings deposits of real persons have increased, they have only a limited contribution to the surge in total FX savings deposits (Chart II.1.20).

Chart II.1.21
Contributions to Growth Based on the Amount of Deposit[1,2]
(Deposits of Resident Real Persons, Percentage Points)



(1)FX savings deposit has been adjusted for exchange rate effect with the (0.6$+0.4€) currency basket.
(2) Precious metal deposit accounts have been included in FX deposits.
Source: BRSA, CBRT (Latest Data: 03.14)

The shift from TL savings deposits to FX savings deposits in the second half of 2013 concentrated on high-amount deposits and did not spread to overall deposits. In the first half of the year, regardless of the deposit amount, TL deposits were the most preferred deposit type. In the second half of the year in which FX savings deposits were on the rise, real persons who had high amounts of deposits diverged to FX deposits, whereas holders of lower-amount deposit accounts remained indifferent to FX deposits (Chart II.1.21).

Box II.1.1 The Impact of Resident Real Persons' Currency Swap Transactions on FX Savings Deposits

The volume of TL currency swap transactions between banks and resident real persons was at a negligible level until the second half of 2013 but has posted a notable rise since then (Chart II.1.1.1). For such a rise to occur, the transaction must yield a return or a cost advantage for at least one of the parties.

On the part of depositors, the transaction requires that depositors give the bank their TL savings, which would normally be deposited in a deposit account, as the subject of the currency swap transaction and the bank gives depositors the foreign exchange equivalent of the TL amount it receives. An analysis of banks' balance sheets reveals that depositors deposit the foreign exchange they get from the bank in an FX deposit account at the same bank. Therefore, FX movements in the transactions with depositors are completely in dematerialized form. In net terms, neither the depositor nor the bank has an FX position.

In cases where the transaction is finalized at this point, the bank enjoys a limited cost advantage in terms of reserve requirement liabilities, as the TL deposits in the balance sheet are replaced by FX deposit accounts. Depositors get a tax advantage since they opted for a currency swap transaction for which the withholding tax is 5 percentage points lower than that for TL deposits. Yet, considering the withholding tax liability for FX deposit accounts that appears in dematerialized form after the transaction, the advantage is reduced. Hence, it seems possible for the bank to offer the depositors a positive yield spread, though this spread may be limited to the advantages that will originate from this kind of transaction.

An analysis of the off-balance sheet items of banks shows that banks cover the majority of these transactions with reverse transactions they conduct with the third parties. In this way, the bank creates an FX source instead of a TL source. This source appears as an FX deposit account on the balance sheet but it does not assume a position any different than the TL deposit when the total assets and liabilities of the depositor are taken into account.

For the bank, interest flows from these two currency swap transactions that it conducts overlap. Putting aside the tax advantage arising from the difference between withholding tax rates, the transaction will attract the depositor when the interest rate for the TL part of the currency swap is higher than the sum of the TL deposit rate and the libor rate. The bank, on the other hand, will have obtained an FX source at no cost. Yet, the interest rate for the TL part of the currency swap transaction does not necessarily have to be higher than the TL deposit rate for this transaction to be appealing. The transaction will also be appealing for both the bank and the depositor in cases where the bank can offer an interest rate that is higher than the difference between the two interest rates, by reflecting a certain amount of the cost advantage it gets from FX deposit accounts on the depositor (Chart I.1.1.2).

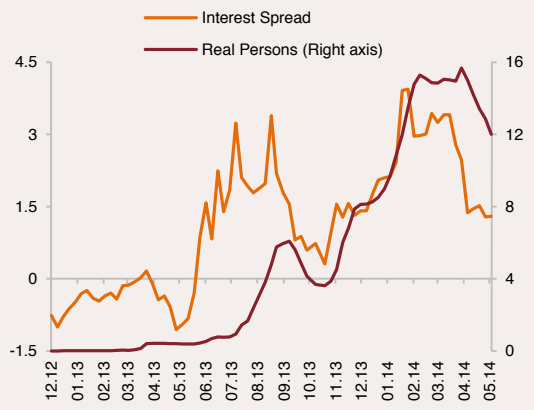
The mathematical formulation of the condition required to make the currency swap transaction more advantageous for the depositor and the bank than TL deposits is depicted as: $i^{TL_Dep} < i^{TL_CS} + i^{FXDep} - libor$ or $i^{TL_Dep} - i^{TLcs} < i^{FXDep} - libor$. In this equation, $i^{TL_Dep}, i^{TL_CS}, i^{FXDep}$ and $libor$ represent TL deposit interest rate, TL currency swap interest rate, FX deposit account interest rate and libor interest rate, respectively.

In other words, currency swap transactions become attractive for both parties when the difference between the TL deposit rate and TL currency swap rate is below the FX deposit rate. As a matter of fact, Chart II.1.1.1 shows that the volume of currency swap transactions tends to increase in cases where the disparity gets bigger in favor of the FX deposit rate.

Chart II.1.1.1

Resident Real Persons' FX Borrowing Currency Swap Transactions and the Interest Spread[1]

(Billion TL)

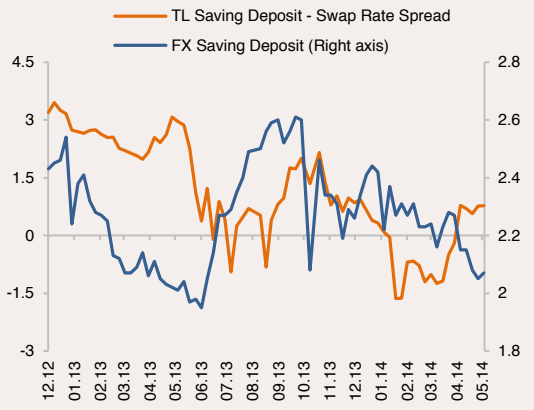


(1)First, the interest spread between TL Savings Deposit Rate for 3-Month Maturity and Currency Swap Rate was calculated. Then, this spread was subtracted from the FX savings deposit rate for 3-month maturity.
Source: BRSA-CBRT, Bloomberg (Latest Data: 09.05.14)

Chart II.1.1.2

3-Month FX Deposit Rate and the Spread btw. 3- Month Rates for TL Savings Deposit and Currency Swaps

(Flow, Percent, Points)



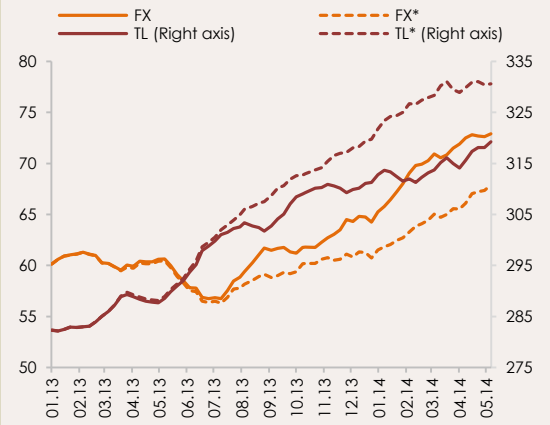
Source: BRSA-CBRT, Bloomberg (Latest Data: 09.05.14)

Although there is no difference for depositors between currency swap transactions and TL deposits in terms of the position they have, there seems to be a strong shift from TL deposits to FX deposits when just the effects of transactions on banks' on-balance sheet items are considered. To get a more accurate picture of households' savings preferences, a re-calculation of TL and FX savings time deposits that excludes the effect of these transactions shows that the shift from TL deposits to FX deposits is much more limited (Chart II.1.1.3).

Chart II.1.1.3

Development of TL-FX Savings Time Deposits[1]

(Billion TL, Billion Basket)



(1)The 0.6$+0.4€ basket was used to adjust the FX time deposit for the exchange rate effect.
(*) Refers to figures adjusted for currency swap effects.
Source: BRSA-CBRT (Latest Data: 09.05.14)

II.2. Corporate Sector Developments

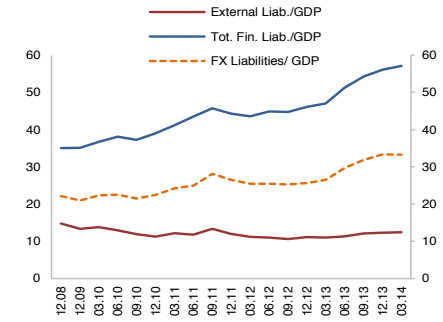
The corporate sector's total financial liabilities composed of loans and issues have been increasing steadily since the end of 2009. This uptrend has originated from the surge in domestic liabilities rather than in external liabilities. The depreciation of the Turkish lira observed since May 2013 has also been influential in the recent rise in liabilities (Chart II.2.1).

Bank loans account for more than 90 percent of the corporate sector's total domestic liabilities. The growth of domestic TL loans, which grew at a high rate (by 30 percent) in 2013, decreased slightly in the first quarter of 2014 despite the hike in interest rates (Chart II.2.2). TL corporate loan rates assumed an uptrend in May 2013 but they fell moderately after March 2014 (Chart II.2.3).

The deceleration in domestic FX loans outpaced the slowdown in TL loans (Chart II.2.2). The fall in FX loans, which are mostly long-term loans used to finance investments, is attributed to increased exchange rate volatility and weakened investment demand. In fact, the downtrend in domestic FX loan growth decelerated due to the more stabilized course of the exchange rate after March 2014.

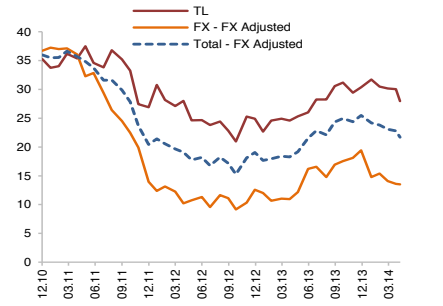
The four-week moving average of growth in the corporate sector's domestic TL loans hovered above the average of previous years in the first quarter of 2014 and remained robust despite the interest rate hike. Regardless of the recent slowdown, weekly growth rates of TL corporate loans are close to the average of previous years though they are lower than the rates in 2013 (Chart II.2.4).

Chart II.2.1
Financial Liabilities of the Corporate Sector[1]
(Percent)



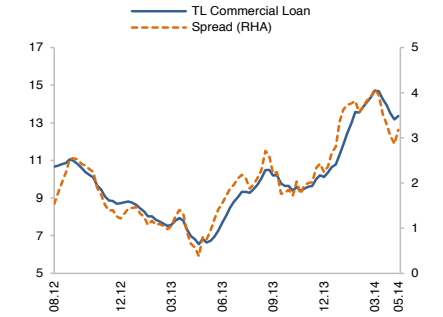
(1) Composed of loan liabilities and issues.
External liabilities include data from foreign branches of resident banks.
External TL liabilities are included in total FX liabilities.
GDP data for March is an estimate.
Source: CBRT, TURKSTAT

Chart II.2.2
Annual Growth of Domestic Corporate Loans[1]
(Percent)



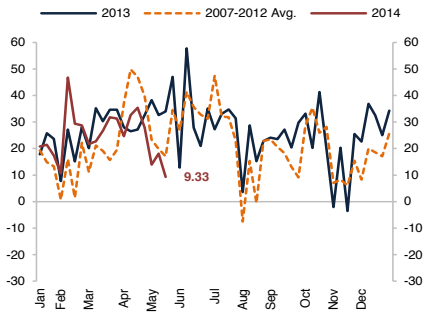
(1) The basket value used to adjust for the exchange rate effect is composed of 70 percent USD and 30 percent euro. FX-indexed loans have been included in FX loans.
Source: CBRT, BRSA (Latest Data: 09.05.14)

Chart II.2.3
TL Corporate Loan Rate[1] and Loan-Deposit Spread
(Percent)



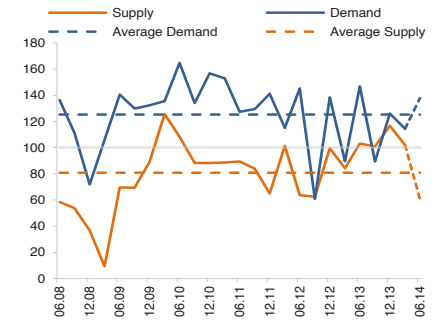
(1) Excluding specialty loans, fund sourcedloans, securities purchases loans, overdraft accounts, credit cards.
Source: CBRT (Latest Data: 09.05.14)

Chart II.2.4
Domestic TL Corporate Loan Growth
(4-week moving average, Percent)



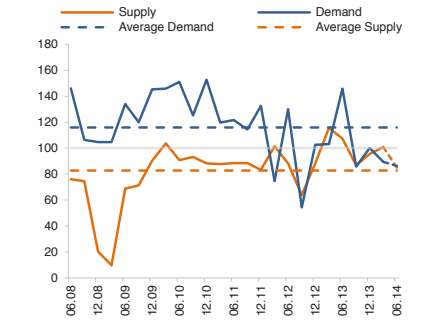
(1) 4-week moving averages of weekly changes have been annualized.
Source: BRSA, CBRT (Latest Data: 09.05.14)

Chart II.2.5
SME Loans Supply and Demand Developments[1]
(Percent)



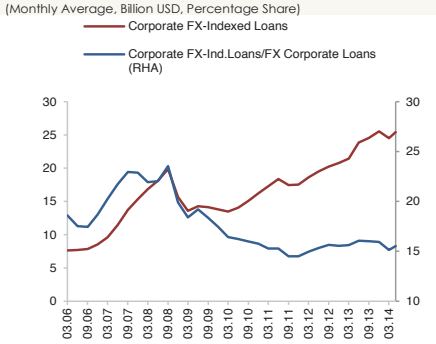
(1) Derived from the Bank Loans Tendency Survey. Values below 100 imply a tightening; values above 100 imply an easing.
Source: CBRT

Chart II.2.6
Large Corporate Loans Supply and Demand Developments[1]
(Percent)



(1) Derived from the Bank Loans Tendency Survey. Values below 100 imply a tightening; values above 100 imply an easing.
Source: CBRT

Chart II.2.7
FX-Indexed Corporate Loan Balances[1]
(Monthly Average, Billion USD, Percentage Share)



(1) The basket used is composed of 70 percent USD and 30 percent euro. FX-indexed loans have been included in FX loans. 4-week moving averages of weekly changes have been annualized.
Source: CBRT, BRSA (Latest Data: 09.05.14)

Results of the Bank Loans Tendency Survey for the first quarter of 2014 confirm the impact of demand-side factors on the slowdown in FX loans and also hint at the role of supply-side factors in this slowdown. Consequently, banks' supply of corporate loans contracted relatively in the first quarter of 2014 depending on the tightening in external funding conditions and the expectations for overall economic activity. This trend is expected to continue in the second quarter of the year. According to the results of the survey, demand for corporate loans, which dropped in the first quarter due to weakened investment tendency, is anticipated to bounce in the second quarter particularly on the back of increased demand from small and medium-sized enterprises (SME) (Chart II.2.5, Chart II.2.6).

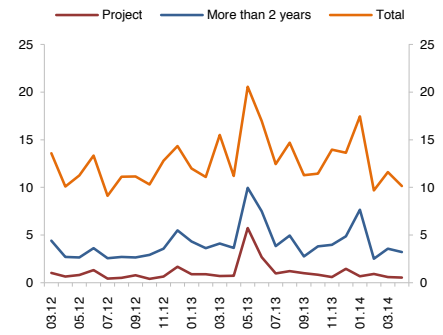
According to current regulations, for domestic banks to extend FX loans to residents with no FX earnings, the average maturity of the loan must be longer than one year and the loan amount must be minimum 5 billion US dollars. For legal entities, there is no restriction on FX loan utilization as long as the loan is used for concrete commercial or professional purposes such as the purchases of investment goods.

In addition to FX loans, FX-indexed loans are also included in the calculations used for the assessments and analyses in the Financial Stability Report. FX-indexed corporate loan utilization does not differ significantly from FX corporate loan utilization and the share of FX-indexed loans in total FX corporate loans has been stable around the 15-16 percent band since 2010 (Chart II.2.7).

FX loans that the corporate sector obtained from domestic banks registered a strong growth by approximately 20 percent in 2013. The boost in long-term loans extended for purposes such as company acquisitions and project financing is believed to be an important factor contributing to this growth. According to data from 13 banks that provide 86 percent of the banking sector's FX loans, FX loans extended for project financing almost doubled in 2013 compared to the previous year. This increase is believed to be triggered by the acquisitions in the scope of privatizations. Excluding the project financing loans, the growth in corporate sector's exchange rate-adjusted domestic FX loans was around 7 percent in 2013.

A breakdown of FX loan utilization for project financing by months reveals that almost half of the total utilization in 2013 belonged to the May-June period, and the strong course of loan utilization continued for the rest of the year (Chart II.2.8). However, there was a marked weakening in the first four months of 2014 and the loan utilization inched down by approximately 15 percent year-on-year. Bank data suggest that the FX loan utilization for project financing will be higher in the rest of 2014. Yet, for the total of 2014, the FX loan utilization for project financing is estimated to drop by almost 40 percent compared to last year and by 5-10 percent when high loan utilizations in the May-June period are excluded.

Chart II.2.8
FX Corporate Loans – Monthly Domestic Loan Utilization
(Billion USD)

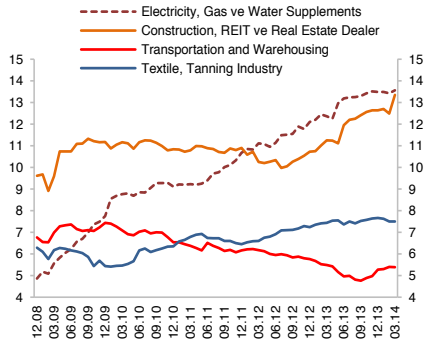


(1) The data of project financing loans is composed of the data of 13 banks that extended the highest amounts of FX corporate loans. The share of these banks in FX corporate loans is 86 percent.
Source: CBRT (Latest Data: 04.14)

Corporate sector companies meet their FX financing need predominantly with domestic FX loans. Considering that small-sized companies have limited access to external financing, the breakdown of domestic FX loans by sectors offers valuable information as to the FX indebtedness of companies.

In this framework, the share of FX loans extended to energy companies in overall FX loans has been on a steady rise (Chart II.2.9). Privatization practices and new investments are believed to fuel the energy sector's long-term FX loan utilization. In addition to the significant increase in housing sales (see Chart II.1.16), the share of construction and real estate sectors in FX loans also inched up in 2013. The change in textile and transportation sectors, whose shares in TL loans went up, was relatively more moderate.

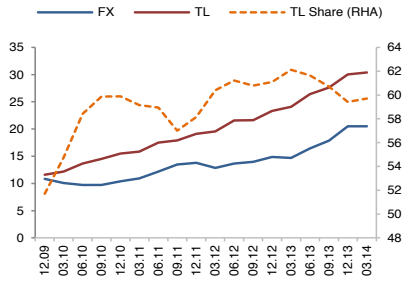
Chart II.2.9
Breakdown of Domestic FX Corporate Loans by Sectors[1] (Share, Percent)



(1) Shows some selected sectors.
Source: CBRT

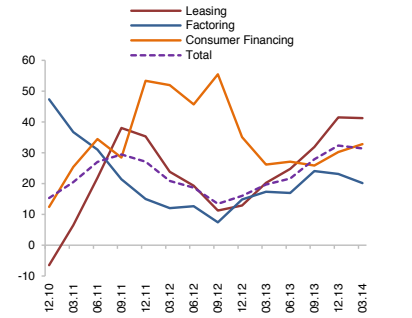
Domestic loans of the corporate sector also include export rediscount credits extended by the Central Bank of the Republic of Turkey via Turkish Eximbank and commercial banks. Pursuant to CBRT regulations on rediscount which were issued as per Article 45 of the Central Bank Law, firms can obtain export rediscount credits from the CBRT through intermediary banks with a maturity of maximum 240 days by presenting foreign exchange bills for rediscount. The repayments of these credits are made in foreign exchange on the date of maturity.

Chart II.2.10
Corporate Sector Loans Extended by Non-Bank Financial Institutions[1] (Billion TL, Percentage Share)



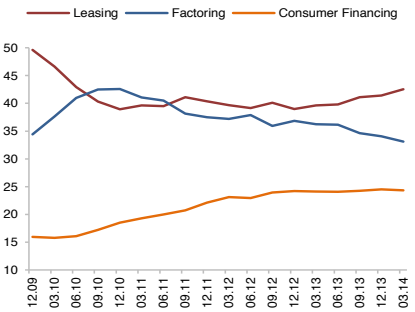
(1)Financing companies' commercial loans with installment options have been calculated as the sum of factoring and leasing receivables of factoring and leasing companies.
Source: CBRT, BRSA

Chart II.2.11
Changes in Corporate Sector Loans Extended by Non-Bank Financial Institutions[1] (Annual Percentage Change)



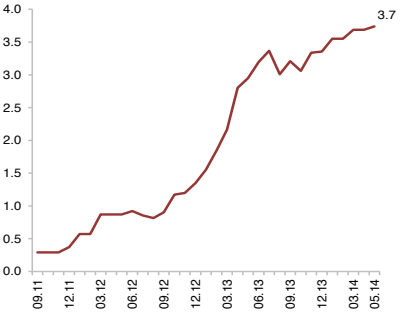
(1)Financing companies' commercial loans with installment options have been calculated as the sum of factoring and leasing receivables of factoring and leasing companies.
Source: CBRT, BRSA

Chart II.2.12
Distribution of Corporate Sector Loans Extended by Non-Bank Financial Institutions[1] (Percent)



(1)Financing companies' commercial loans with installment options have been calculated as the sum of factoring and leasing receivables of factoring and leasing companies.
Source: CBRT, BRSA

Chart II.2.13
Corporate Sector's Bond Issues in Domestic Market
(Stock, Billion TL)



Source: MKK (Latest Data: 09.05.14)

In 2013, the CBRT extended USD 15.1 billion worth of export rediscount credits to a total of 916 firms via Turkish Eximbank and commercial banks. As of 23 May 2014, export rediscount credits extended to 867 firms amounted to USD 5.9 billion, 65 percent of which was made up of loans with a maturity of 121-240 days and 35 percent of which belonged to loans with a maturity of 120 days or less. The debt balance of these credits was USD 8.8 billion and 80 percent of this amount was composed of long-term loans (with a maturity of 121-240 days). If the rate of increase in credit utilization remains the same as the previous year, the amount of credits extended is expected to reach approximately USD 18 billion in 2014.

In 2014, export rediscount credits have been extended primarily to finance the exports of basic metal industry, textile industry and electrical machinery and equipment industry goods.

There has been no significant increase in the corporate sector's liabilities to domestic bond markets and the non-bank financial sector. The corporate sector's liabilities to resident non-bank financial institutions, more than half of which is in TL, display an uptrend similar to that of bank loans (Chart II.2.10, II.2.11).

A major part of the surge in corporate sector loans extended by non-bank financial institutions originates from loans extended by financial leasing companies. On the other hand, the share of factoring companies in overall corporate loans extended by non-bank financial institutions has gradually declined since 2010 (Chart II.2.12).

Meanwhile, the amount of funds that the corporate sector obtained from domestic bond markets remained moderate. Domestic bond issues, which jumped in the 2011-2012 period, have been flat since mid-2013 (Chart II.2.13). As of May 2014, the amount of the corporate sector's domestic bond issues was nearly TL 4 billion And their average maturity was approximately 830 days.

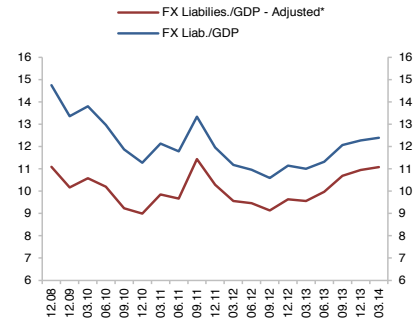
External financial debt of the corporate sector is a lot less than its domestic financial debt and it increased on the back of bond issues and short-term loans as well as financing from official bodies in 2013. Loans obtained from foreign branches and affiliates of domestic banks account for 24 percent of the corporate sector's USD 91-billion external financial debt. This credit balance eradicated gradually after the amendment to the Decree No.32 in 2009 and dropped to USD 22 billion as of March 2014. In terms of foreign exchange types, USD 6.6 billion (TL 14.5 billion) worth of the corporate sector's external loan was in Turkish lira.

Excluding foreign branches and affiliates, 67 percent of the corporate sector's external loans was extended by foreign commercial banks and non-bank financial institutions and 19 percent by non-financial institutions (Chart II.2.15). Almost 95 percent of loans extended by all these three sources are long-term loans. Long-term loans obtained from international institutions (such as the European Investment Bank) account for 8 percent of total external loans.

Bond issues are another channel that provides the corporate sector with external funding. Bond issues abroad, which began in 2010, increased in 2012 and 2013 and stood at USD 3.3 billion. The average maturity of these bond issues was seven years.

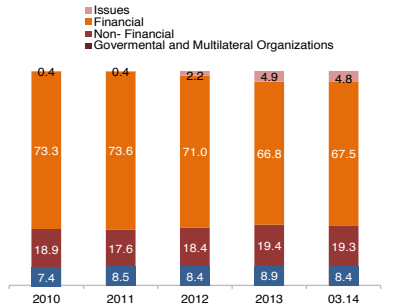
A large portion of the corporate sector's external loans is composed of long-term loans and there is no problem with the external debt rollover ratio. The share of external loans with an original maturity of longer than one year in the corporate sector's overall external loans is at a high level by 78 percent (Chart II.2.16). Up to the end of March 2015, the corporate sector has a total of USD 20 billion of loan repayment, USD 15.7 billion of which belong to long-term loans and USD 4.3 billion to short-term loans (Chart II.2.17). Including approximately USD 26 billion worth of short-term import loans, the corporate sector's external loan repayment due within a year amounts to USD 46 billion and its total external liabilities reach USD 117 billion.

Chart II.2.14
Corporate Sector's External Liabilities[1]
(Percent)



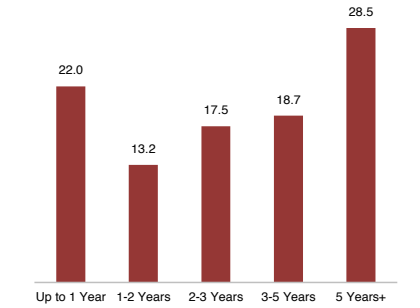
* Excluding foreign branches and affiliates of domestic banks
(1) GDP data for March is an estimate.
Source: CBRT, TURKSTAT

Chart II.2.15
Distribution of Corporate Sector's External Liabilities Excluding Foreign Branches
(Percentage Share)



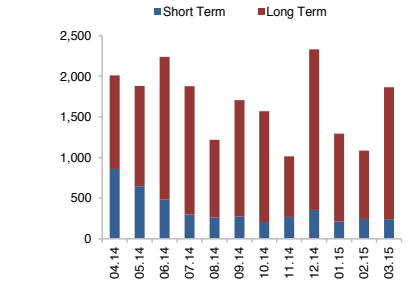
Source: CBRT

Chart II.2.16
Breakdown of Corporate Sector's External Financial Liabilities by Maturities
(As of March 2014, Percentage Share)



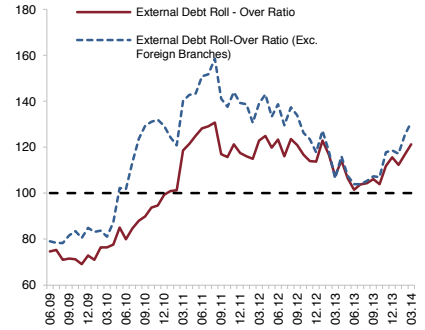
Source: CBRT

Chart II.2.17
Corporate Sector's External Loans Due Within One Year
(Million USD)



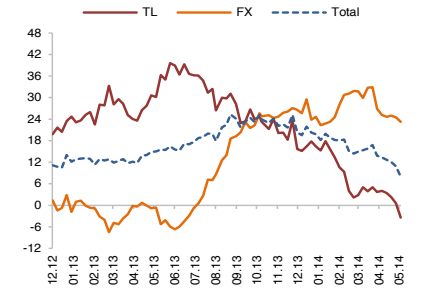
Source: CBRT

Chart II.2.18
External Debt Roll-Over Ratio
(6-month moving average, Percent)



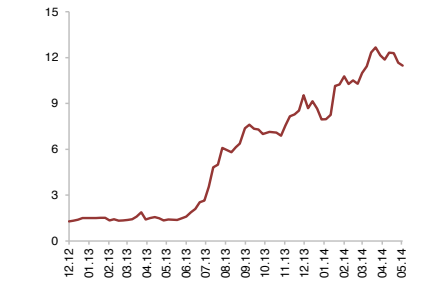
Source: CBRT

Chart II.2.19
TL- Exchange Rate-Adjusted FX and Total Commercial Deposits[1]
(Annual Percentage Change)



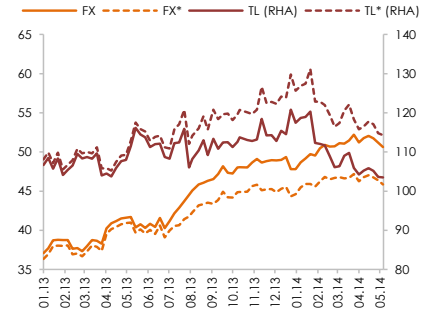
(1)FX commercial deposit has been adjusted for the exchange rate effect with the (0.6$+0.4€) currency basket.
Source: CBRT (Latest Data: .09.05.14)

Chart II.2.20
Currency Swap Transactions of Resident Legal Persons
(Billion TL)



Source: BRSA-CBRT (Latest Data: 09.05.14)

Chart II.2.21
TL-FX Commercial Deposits[1]
(Billion TL, Billion Basket)



(1) The 0.6$+0.4€ currency basket has been used to adjust for the exchange rate effect.
(*) Refers to figures adjusted for currency swap effects.
Source: BRSA-CBRT (Latest Data: 09.05.14)

The corporate sector external debt roll-over ratio has been above 100 percent in recent years. To adjust it for the effect of the amendment to the regulation made in June 2009, the external debt roll-over ratio has been re-calculated by excluding the amounts of loans obtained from and repayments made to foreign branches of banks. The external debt roll-over ratio dropped in 2013 after displaying an uptrend throughout 2012. Yet, it remained above 100 percent. The strong course of the external debt roll-over ratio in 2014 is a testimony that the corporate sector has no difficulty in obtaining external loans (Chart II.2.18).

The annual growth rate of commercial deposits has been on a decline since the third quarter of 2013 (Chart II.2.19). The loss of momentum in FX commercial deposits coupled with the fall in TL commercial deposits has been instrumental in this deceleration. The shift from TL to FX and the currency swap transactions with banks are believed to be important factors that have triggered the growth in FX commercial deposits since the second half of 2013 (Chart II.2.20).

However, even if these transactions are excluded, there is no obvious change in the general trend of TL and FX deposit amounts (Chart II.2.21). In particular, the downtrend in TL commercial deposits that began in early 2014 is still apparent even when the currency swap transactions are excluded.

The deceleration in the growth of TL commercial deposits has been primarily led by commercial deposits at banks other than public banks while public banks have also contributed to this deceleration since November. This contribution is mainly attributed to changes in the deposits owned by State Economic Enterprises (SEE) in the scope of the Communique on Public Treasurership.

The net FX short position of the corporate sector has climbed to USD 170 billion. The uptrend in FX liabilities in the face of the flat course of FX assets has been instrumental in this climb.

III. Risks Pertaining to the Financial System

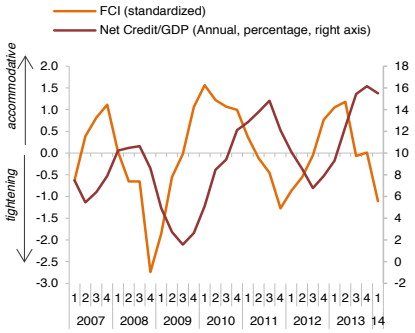
An assessment of the banking sector risks in light of both international and domestic developments reveals that there is no obvious change in the general quality of loans as of the first half of 2014, the sector has adequate liquidity buffers to absorb likely liquidity shocks and the susceptibility to interest rate risk has been weakening. However, the uptrend in the annual growth of loans under close monitoring and NPL ratios in certain types of loans urges a close monitoring of credit risk with respect to financial stability. Results of the macro stress test conducted in the framework of the scenario based on the fluctuations in the 2008 global crisis suggest that any likely deterioration in the NPL ratio and the capital adequacy of the banking sector will be mild and the sector's capital adequacy ratio will remain above the legal ratio.

III.1. Credit Risk

The downtrend in loan growth strengthened in the first quarter of 2014. The recent recovery trend in financial conditions hints at a more moderate decline in loan growth for the rest of the year. Loan growth in the banking sector, which accelerated in the last quarter of 2012, assumed a downtrend in the second half of 2013 in line with the sharp decline in the Financial Conditions Index[3] (FCI). Increased domestic uncertainties and macroprudential measures reinforced this downtrend in the first quarter of 2014 (Chart III.1.1, Chart III.1.2).

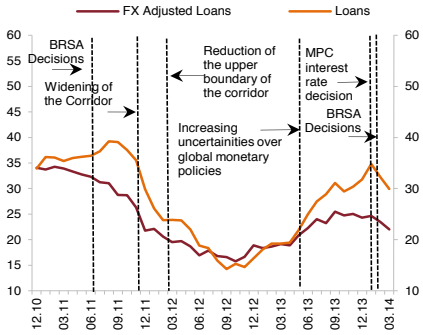
The ratio of loans extended by the banking sector to the GDP has increased 1.5-fold and more than half of this increase was registered in 2013 (Chart III.1.3). Yet, considering the more-than-30-percent share of FX loans in total loans, the depreciation of the TL in the post-May period is believed to be influential in the increase in 2013. In fact, while FX loans accounted for one

Chart III.1.1
Financial Conditions Index* and Loan Growth[1]
(Percentage Change)



* CBRT Research Notes, No: 12/31.
(1) GDP data calculated with current prices has been used. Q1-2014 data is an estimate.
Source: CBRT, BRSA, TURKSTAT (Latest Data: Q1-2014)

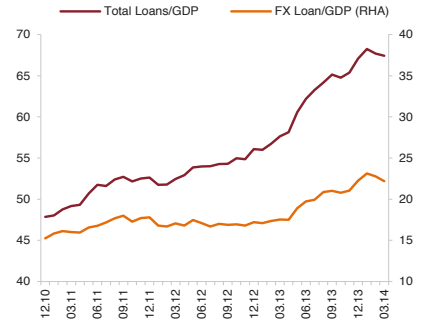
Chart III.1.2
Annual Loan Growth Rates[1]
(Percent, Excluding NPL)



(1) The basket value used to adjust for the exchange rate effect is composed of 70 percent USD and 30 percent euro. FX-indexed loans have been included in FX loans.
Source: CBRT, BRSA (Latest Data: Mar. 14)

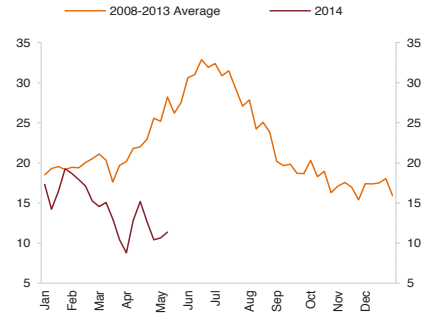
3 Kara, H., Özlü, P. and D. Ünalmış (2012), "Financial Conditions Indices" CBRT Research Notes, No:12/31.

Chart III.1.3
Total Loans/GDP and FX Loans/GDP[1]
(Percent)



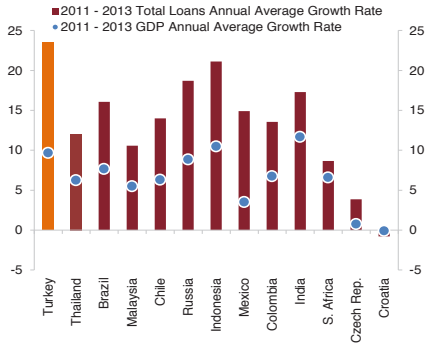
(1) GDP data calculated with current prices has been used. Q1-2014 data is an estimate.
Source: CBRT, BRSA, TURKSTAT (Latest Data: 03.14)

Chart III.1.4
Development of Loans Adjusted for Exchange Rate Effect[1]
(13-week annualized moving average, Percent)



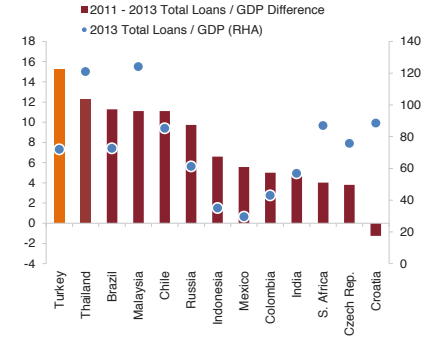
(1)The basket value used to adjust for the exchange rate effect is composed of 70 percent USD and 30 percent euro. FX-indexed loans have been included in FX loans.
Source: CBRT, BRSA (Latest Data: 09.05.14)

Chart III.1.5
Average Annual Rate of Loan Growth (2011 – 2013)[1]
(Nominal, Percent)



(1) The most up-to-date data in the IMF-FSI database, predominantly covering the last quarter of 2013, have been used.
Source: IMF Financial Soundness Indicators

Chart III.1.6
Loan/GDP Ratio and Its Change[1]
(Point, Percent)



(1) The most up-to-date data in the IMF-FSI database, predominantly covering the last quarter of 2013, have been used.
Source: IMF Financial Soundness Indicators

fourth of the rise in the Loan/GDP ratio in the 2010-2012 period, their contribution to last year's rise climbed to 50 percent. The Loan/GDP ratio is anticipated to display a more moderate increase in 2014 compared to previous years as the loan growth adjusted for exchange rate (AER) was below the average of previous years in 2014 and the exchange rate fluctuations eased off (Chart III.1.4).

Loan growth is higher in Turkey than in selected countries (Chart III.1.5). Although the ratio of total loan amount to the GDP is close to the average of these selected countries, the credit risk still needs to be closely monitored in terms of financial stability since the Loan/GDP ratio inches up faster in Turkey (Chart III.1.6). In this respect, the recent downtrend in the relatively high average annual rate of loan growth is deemed good for financial stability.

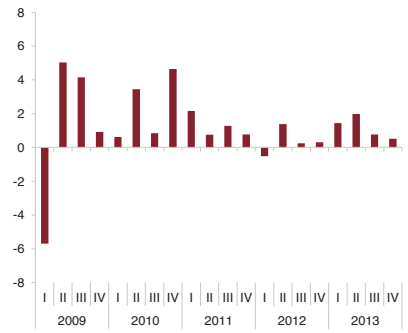
Since the second half of 2013, the volatility in exchange rates and interest rates has surged and the GDP growth has weakened depending on domestic demand. Nevertheless, non-performing loans (NPL) of the banking sector have not posted a significant increase. The rate of GDP growth, which climbed to 4 percent in 2013 due to the moderate rise in private sector demand and strong public sector demand took a downturn in the second half of the year (Chart III.1.7). Simultaneously, deteriorated growth expectations for 2014 have been on a limited recovery trend in recent months (Chart III.1.8). The improvement in growth expectations is estimated to continue thanks to decreased country specific uncertainties, the recovery in the risk appetite of global financial markets and the increased contribution from external demand.

The fluctuation in financial markets observed in the second half of 2013 has diminished in the recent period, and exchange rates and interest rates have been, once again, on a downtrend since the second quarter of 2014. These developments have a favorable contribution to the credit risk outlook.

Developments in money and foreign exchange markets have also affected the credit market, and consumer and commercial loan rates have escalated in line with market developments. As of the second quarter, commercial loan rates moved down while the fall in consumer loan rates remained moderate (Chart III.1.9). Considering that consumer loans are predominantly fixed-rate loans, it is believed that the surge in loan rates will not have a negative effect on the solvency of current household loan borrowers and increase the credit risk.

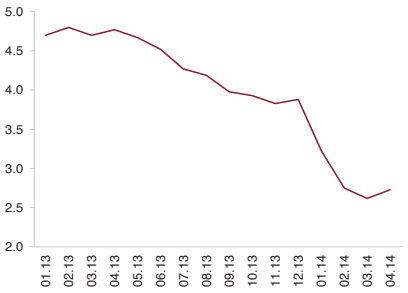
Non-performing loan (NPL) figures for both retail and commercial loans show that there was no obvious change in the quality of loans until April 2014. The banking sector NPL ratio has been moving around the 2.7 - 3 percent band for the last two years (Chart III.1.10). The progress of the Turkish banking sector in terms of NPL developments and NPL level is also visible in cross-country comparisons (Chart III.1.11).

Chart III.1.7
GDP Growth Rates[1]
(Quarterly percentage change)



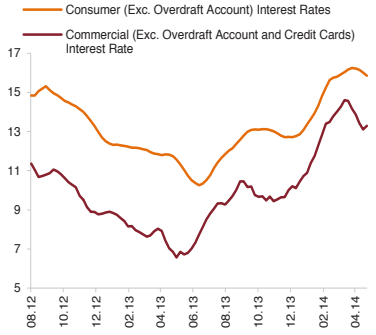
(1) With fixed prices adjusted for seasonal and calendar effects.
Source: CBRT, TURKSTAT (Latest Data: 03.14)

Chart III.1.8
Expectations of GDP Growth for 2014[1]
(Percent)



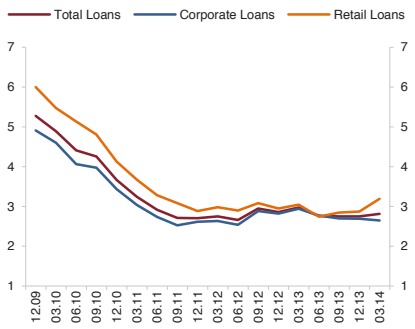
(1) Based on the CBRT Survey of Expectations data
Source: CBRT(Latest Data: 04.14)

Chart III.1.9
Commercial and Consumer Loan Rates
(Flow Data, 4-Week Moving Average, Percent)



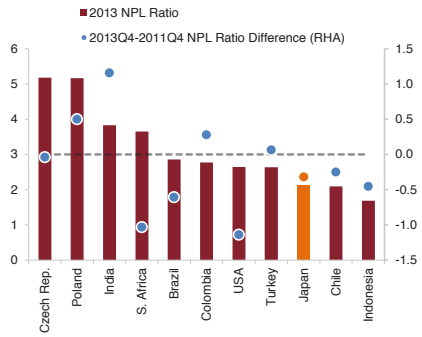
Source: CBRT (Latest Data: 09.05.14)

Chart III.1.10
NPL Ratios (Total/Commercial/Retail)
(Percent)



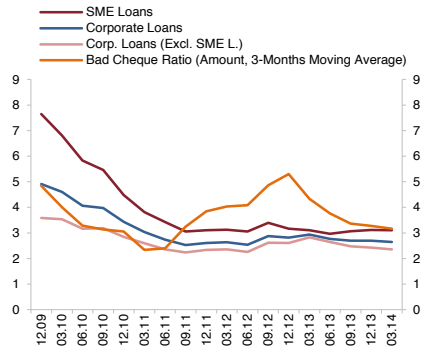
Source: CBRT, BRSA (Latest Data: 03.14)

Chart III.1.11
NPL Ratios and NPL Ratio Differences[1]
(Percent)



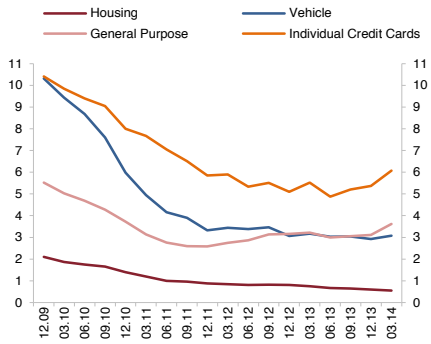
(1)Most up-to-date data, predominantly belonging to Q4-2013, have been used.
Source: IMF Financial Soundness Indicators

Chart III.1.12
NPL Ratios and Bounced Cheque Ratio
(Percent)



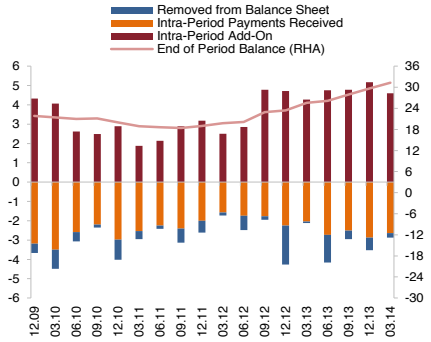
Source: CBRT, BRSA (Latest Data: 03.14)

Chart III.1.13
NPL Ratios of Retail Loans
(Percent)



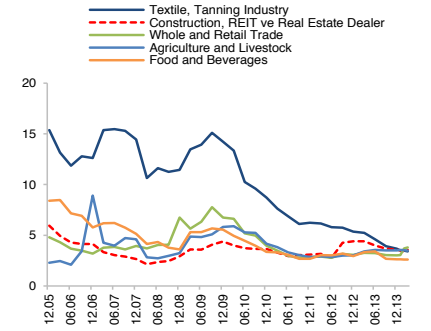
Source: CBRT, BRSA (Latest Data: 03.14)

Chart III.1.14
Quarterly Flow NPL Developments
(Billion TL)



(*) Intra-Period Add-On - Movements Across Groups
Source: CBRT, BRSA (Latest Data: 03.14)

Chart III.1.15
Sectoral Breakdown and Developments in Corporate NPLs[1]
(Percent)



(1) The first four sector with the highest rate of increase in FX loans have been used.
Source: CBRT, BRSA (Latest Data: 03. 14)

In terms of loan types, NPL ratios for loans extended to small-sized enterprises as well as for individual credit cards and genral purpose loans assumed an uptrend in the second half of 2013. On the other hand, the number of credit card and consumer loan defaulters, which had surged in 2012, posted only a limited increase at end-2013 and in the first quarter of 2014 despite the rise in loan utilization (Table 3.1.1). Moreover, the upward trend in the NPL ratio for individual credit cards observed since the second half of 2013 is attributed to the deceleration in the growth of credit card balances in addition to the rise in NPL amounts. The downtrend in bounced cheque ratios and NPL of non-SME firms continues (Chart III.1.12, Chart III.1.13).

Sub-items of the development of NPLs indicate that the intra-period additional NPL amounts have been hovering at high levels since the third quarter of 2012, compared to 2010 and 2011 averages. Particularly the increase at end-2013 was noteworthy; however concerns over credit risk partially lessened on the back of a more favorable course in additional NPL formation in the subsequent months (Chart III.1.14).

A sectoral analysis of NPL amounts related to the corporate sector suggests that among the first five sectors that have a higher-than-5-percent share in the total NPL amount, only the NPL amount of the agriculture and livestock sector recorded a limited increase while that of other sectors, primarily the textile, declined in 2013 (Chart III.1.15). In the first quarter of 2014, the NPLs of wholesale and retail trade sector have increased by approximately one point, which is noteworthy, while NPLs of other sectors has generally displayed a flat course.

Table III.1.1
Number of Credit Card and Consumer Loan Defaulters[1]
(Thousand People)

	12.11	12.12	12.13 [3]	03.14
Banks	1,225	1,487	1,339	1,382
Asset Management Companies	688	782	902	926
Finance Companies	11	8	10	9
Total[2]	1,658	1,949	2,001	2,048

(1) Customers with more than one registry to a particular financial institution group are counted only once.

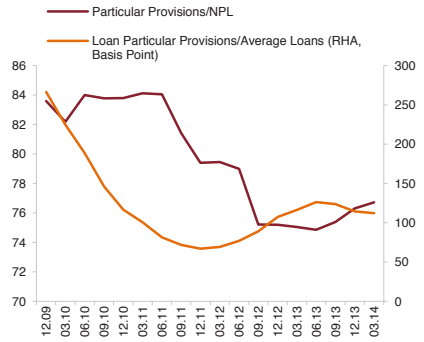
(2) As customers may be registered in more than one financial institution group, the sum of the three rows in the table and grand total are not equal.

(3) The minimum amount of non-performing loans to be disclosed by each bank has been set as TL 20 as of September 2013. Amounts less than TL 20 have not been included in the calculation.

Source: CBRT and Banks Association of Turkey Risk Center

Particular provisions to NPL ratio declined by approximately 10 points to some 75 percent, whereas the ratio of twelve-month-cumulative particular provisions for loans toaverage loans inched up to 125 basis points due to the rise in intra-period additional NPL amounts during 2011-2012. Provisioning (Particular Provisions /NPL) ratio of the sector in the post-June 2013 period improved slightly, which is a favorable development in terms of financial stability (Chart III.1.16).

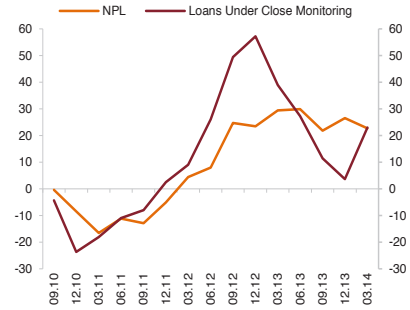
Chart III.1.16
Particular Provisions/NPLs and Loans Particular Provisions /Average Loans (Percent, Basis Points)



Source: CBRT, BRSA (Latest Data: 03.14)

On the other hand, the growth rate of the loans under close monitoring has been on the rise since the end of 2013 (Chart III.1.17). The likely impacts of this increase on the NPL formation are of importance in terms of the credit risk, hence require a close monitoring.

Chart III.1.17
Loans Under Close Monitoring and NPL
(Annual Growth, Percent)

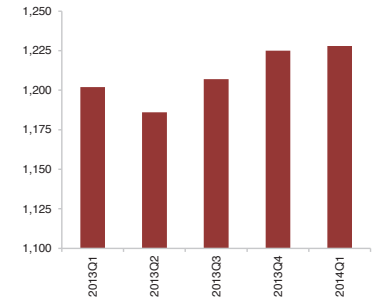


Source: CBRT, BRSA (Latest Data: 03.14)

Liabilities of households that have FX borrowing constraints do not carry exchange rate risk. Favorable developments in the labor market have positive implications on household-driven credit risk. The effects of the recent regulations, particularly related to credit cards, will be monitored closely for household-driven credit risk.

An analysis of the credit bureau score and consumer indebtedness index reveals that individuals do not undergo significant problems in repaying their financial liabilities. The improvement in the credit bureau score -used to foresee the solvency capacity of individuals- that started in the second quarter of 2013 continued in the following periods (Chart III.1.18).

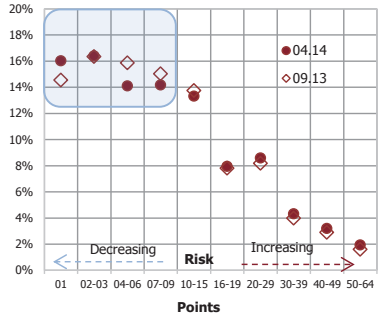
Chart III.1.18
Credit Bureau Score - Average[1]
(Points)



(1) Credit Bureau Score is calculated to fall between 1 and 1900. 1 denotes the highest risk, whereas 1900 denotes the lowest risk for a specified situation. The figures have been calculated by taking into account the application inquiries only.
Source: Credit Bureau of Turkey

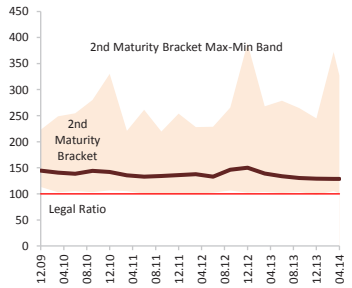
For consumer indebtedness index, individuals who did not show any sign of difficulty in repaying a debt in the past but has a tendency to incur a debt in excess of their repayment capacities are analyzed. An analysis of consumer indebtedness index indicates that there has been no significant change in total risk percentages of the individuals listed in the lowest four risk groups compared to September 2013 and that the favorable outlook has been maintained (Chart III.1.19).

Chart III.1.19
Consumer Indebtedness Index[1]
(Percent)



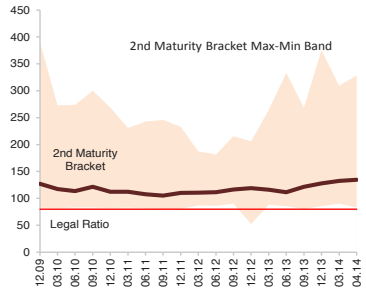
(1) Consumer Indebtedness Index is calculated to range between 1 and 64. 1 denotes the lowest risk group, whereas 64 denotes the highest risk group. The figures have been calculated by taking into account the application inquiries only.
Source: Credit Bureau of Turkey

Chart III.2.1
2nd Maturity Bracket Total Liquidity Adequacy Ratio [1,2,3]
(Percent)



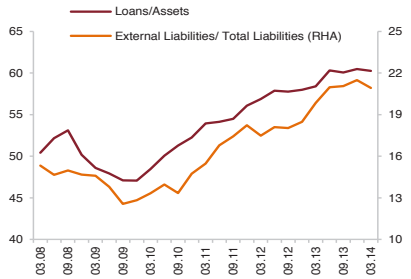
(1) The ratio of FX and TL-denominated assets with term to maturity of 31 days or less to FX and TL-denominated liabilities with term to maturity of 31 days or less.
(2) Excluding banks with extreme values.
(3) The liquidity adequacy average has been calculated as the arithmetic mean of ratio by each period regardless of balance sheet weights of selected banks.
Source: BRSA –CBRT

Chart III.2.2
2nd Maturity Bracket FX Liquidity Adequacy Ratio [1,2,3]
(Percent)



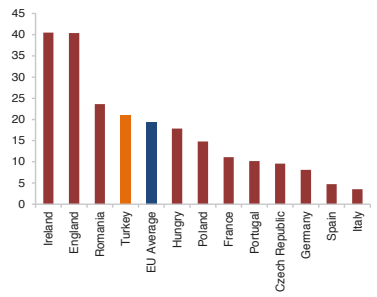
(1) The ratio of FX-denominated assets with term to maturity of 31 days or less to FX-denominated liabilities with term to maturity of 31 days or less.
(2) Excluding banks with extreme values.
(3) The liquidity adequacy average has been calculated as the arithmetic mean of ratios
by each period regardless of balance sheet weights of selected banks.
Source: BRSA –CBRT

Chart III.2.3
Banking Sector's Loan/Asset and External Liabilities/Total Liabilities Ratio (Percent)



Source: BRSA – CBRT, ECB

Chart III.2.4
Selected Countries' External Liabilities/Total Liabilities Ratio
2014 Q1 (Percent)



Source: BRSA – CBRT, ECB (Latest Data: 03.14)

III.2. Liquidity Risk

Resilience of the banking sector to short-term liquidity shocks is high. Developments in the quality of funding suggest that the likelihood of banks being exposed to significant liquidity risks in the medium and long run is low. In Turkey, where short-term liquidity adequacy ratios are monitored as a legal requirement, banks do not have any difficulty in abiding by the ratios set by the banking regulation authority. Regardless of the currency units of the balance sheet items, banks are performing quite well in meeting the legal liquidity ratio that expresses their ability to cover the liquidity needs that might emerge within a term of one month. Banks do not have any difficulty in meeting the minimum liquidity ratio that is monitored legally and calculated based on FX items of the balance sheet (Chart III.2.1 and III.2.2).

In the Turkish banking system, the majority of the TL liabilities of which is composed of core liabilities and which include a high level of public borrowing securities on their balance sheets compared to other country banking systems, liquidity risks are predominantly concentrated on the FX side. In recent years banks' external liabilities have surged rapidly in parallel to the credit-driven asset growth (Chart III.2.3). Although the ratio of banking sector external liabilities of the selected European countries to total liabilities varies per country, the same ratio pertaining to the Turkish banking system is already hovering at levels close to EU averages (Chart III.2.4).

Despite the rapid rise in external liabilities, the foreign exchange deposit accounts currently constitute approximately half of the total FX liabilities and are large enough in amount to cover more than all of the FX loans (Chart III.2.5). On the other hand, a significant portion of FX liabilities is used to finance TL assets through derivative products to build TL-denominated funds. Therefore the TL loan/ TL deposit ratio has increased over time.

In the annual growth of banks' external liabilities, the contribution of loans obtained from commercial banks that have a major share in total external liabilities largely preserves its predominance. Additionally, security issues that started in 2010 and that mainly have long-term maturity structure has a significant contribution to the increase of external liabilities. Furthermore, the share of total long-term subordinated debt in total external liabilities has recently displayed a significant rise. The share of securitization loans in external liabilities have progressively declined over the years independent of global conditions. Banks have offset this decline with security issues abroad (Chart III.2.6 and III.2.7).

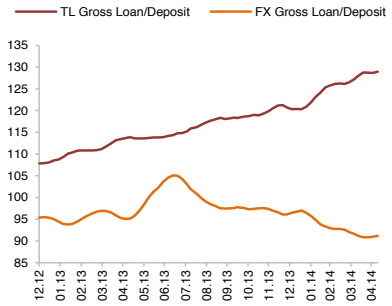
With the effect of Fed tapering signals in May 2013, portfolio flows towards emerging market economies including Turkey became volatile. However the Turkish banking sector's external debt remained on a steady rise until the end of 2013 and posted a moderate decline driven by repos in the first quarter of 2014. On the other hand, banks continued to renew their syndication loans at a ratio of around 100 percent and at a cost lower by 10 basis points. Banks' external liabilities to mature in the six-month-period ahead is in the amount of USD 45.2 billion (Chart III.2.8).

Although the external debt rollover ratio of the banking sector has gradually declined since the second quarter of 2013, it still hovers above 100 percent. The external debt rollover ratio, which was around 120 percent during the pre-crisis period and between 2010 and 2011 dominated by a significant increase in loans, recorded a more modest rise in 2013. This ratio, which inched down by 32 points in 2008 crisis and by 21 points during the 2011 fluctuation compared to its peak level, is above 100 percent despite a 10-point-decline since April 2013 (Chart III.2.9). The decreasing demand for FX loans driven by the slowdown in investment demand is also considered instrumental in the decline of banks' external debt rollover ratio.

Capital flows towards emerging market economies may pick up in the coming period thanks to the improvement in global risk perceptions on the back of the recovery in global growth

Chart III.2.5

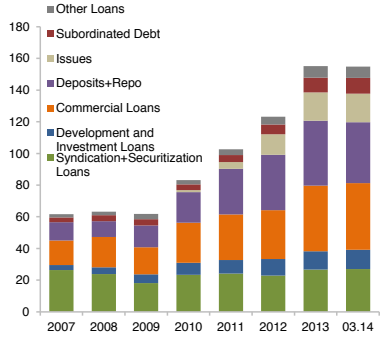
TL-FX Gross Loan/Deposit Ratio[1,2]
(Percent)



(1)Calculated by 4-week moving average.
(2) FX-indexed loans are included in FX loans.
Source: BRSA – CBRT (Latest Data: 09.05.14)

Chart III.2.6

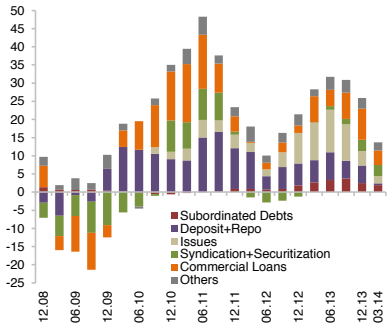
Composition of Banks' External Liabilities
(Billion USD)



Source: BRSA-CBRT, CMB, PDP

Chart III.2.7

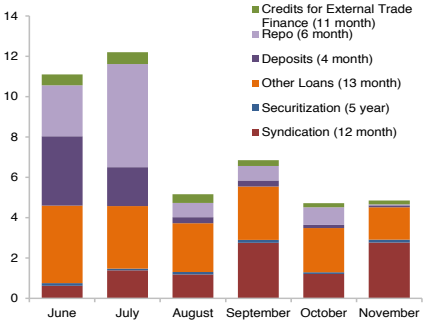
Contribution to the Increase in External Liabilities
(Percent)



Source: BRSA-CBRT, CMB, PDP

Chart III.2.8

Payment Scheme of External Liabilities in the Short Period Ahead[1]
(Billion USD, Average Maturity with respect to Original Maturity)

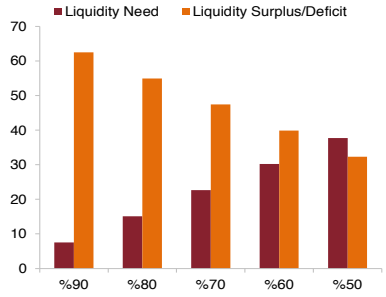


Source: BRSA-CBRT
(1) Excluding issues

Chart III.2.9
External Debt Rollover Ratio of Banks[1]
(Percent)

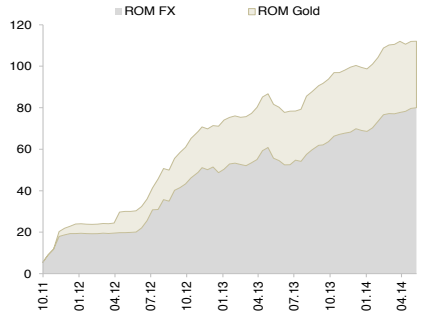
(1) Calculated based on 6-month-moving averages of total foreign borrowing and repayment amounts including security issues.
Source: BRSA-CBRT, CMB, PDP

Chart III.2.10
External Debt[1] Rollover Ratio and FX Liquidity Need of Banks[2]
(March 2014, Billion USD, Percent)



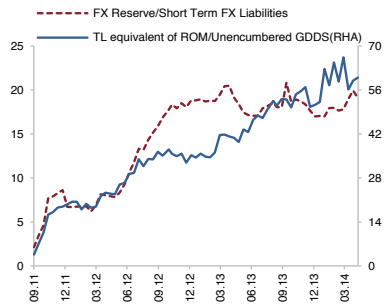
(1) Excluding TL deposits and deposits of foreign branches.
(2) Liquidity need: External debt due within 1 year x (1 – external debt roll-over ratio)
Liquidity Surplus/Deficit: FX Liquid Assets (Cash +Banks + CBRT+Money Markets) – Liquidity Need
Source: CBRT, BRSA-CBRT

Chart III.2.11
Amount of FX and Gold Held at CBRT Accounts via ROM Facility (Billion TL)



Source: CBRT (Latest Data: 09.05.14)

Chart III.2.12
Ratio of FX Reserves Maintained via ROM to the Banking Sector's Short-Term FX Liabilities[1] and Ratio of the TL Equivalent of FX and Gold Maintained via ROM to Unencumbered GDDS (Percent)



(1) On-balance sheet FX liabilities up to 12 months.
Source: BRSA - CBRT (Latest Data: 09.05.14)

and dissipating uncertainties over the Fed's monetary policy. Moreover, Turkey-specific risks have been diminishing since April, which is another factor that limits the downside risks for the banking sector in providing funding from abroad. Therefore, the banking sector is expected to rollover its external debt at similar ratios in the second half of 2014 as well. Alternatively, the banking system is believed to have adequate amount of FX liquid assets against temporary and cyclical constrictions that might be experienced in access to external sources (Chart III.2.10).

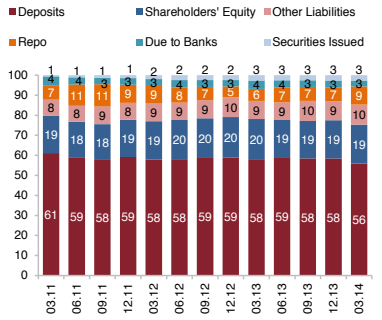
Reserve Options Mechanism (ROM), will act as an important buffer against exceptional fluctuations that might occur in FX liquidity. The Reserve Options Mechanism[4], is basically an implementation that allows banks to keep a certain ratio of their Turkish lira (TL) reserve requirements, which they are required to hold at the CBRT, in foreign exchange (dollar and/or euro) and standard gold. With the use of this facility, the amount of FX reserves kept at the CBRT by banks has reached around TL 120 billion (Chart III.2.11).

According to the latest data, within the scope of the ROM, banks' foreign exchange reserves are adequate enough to cover approximately 20 percent of their FX liabilities of up to one-year-maturity (Chart III.2.12). In times of difficult access to FX liquidity, banks will be able to meet some of their liquidity needs by reducing their use of reserve options. Nevertheless, if banks use their FX reserves within the ROM, they will need to maintain the TL reserve requirement liabilities in the Turkish lira. The Turkish lira liquidity need of banks that might emerge as such can be met by sale of unencumbered GDDS or by presentation of them as collateral at the CBRT. Approximately half of the unencumbered government securities held by the banking sector has recently been at a level to cover the Turkish lira equivalent of FX and gold reserves kept within the scope of the ROM (Chart III.2.12).

4 For further information, see CBRT Bulletin-December 2012, No 28,
Financial Stability Report-November 2013, Volume 17 Special Topic V.1,
Alper, K., Kara, H. and Yörükoğlu, M. (2012). "Reserve Options Mechanism", CBRT Research Notes in Economics No.12/28.
Küçüksaraç, D. and Özel, Ö. (2012). "Reserve Options Mechanism and Computation of Optimal Reserve Option Coefficients", CBRT Working Paper No: 12/32.

Although the contribution of domestic issues to the TL funding has increased for the last three years, the TL liabilities of the banking sector is predominantly composed of deposits. Despite the recent shift of commercial deposits from TL to FX and the decline in official deposits, deposits still continue to be an important item in the total TL liabilities (Chart III.2.13). Although the total amount of TL-denominated security issues, to which banks resort to extend the maturity of TL liabilities increased, their share in the total TL liabilities still hover at 3 percent levels.

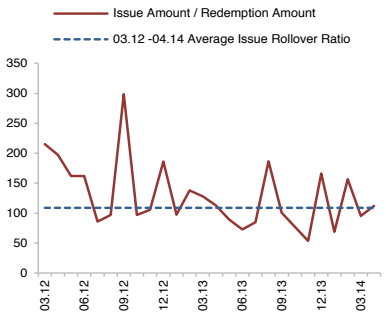
Chart III.2.13
TL Liability Structure of the Banking Sector
(Percent)



Source: BRSA –CBRT

The average ratio of redemption amounts covered by banks' issuance amounts since 2012 is above 100 percent (Chart III.2.14). The banks were able to roll over the TL issues with ease even at times of increased stress in bills and bonds markets. The difference between the cost of security issues and cost of TL deposits shows a limited divergence except for the portion that can be attributed to the term premium pertaining to the two sources and the interest rate spread between bank issues and government papers with six-month-maturity is limited, all of which suggest that banks do not have any difficulty in sustaining the funds they obtain from this source (Chart III.2.15 and III.2.16).

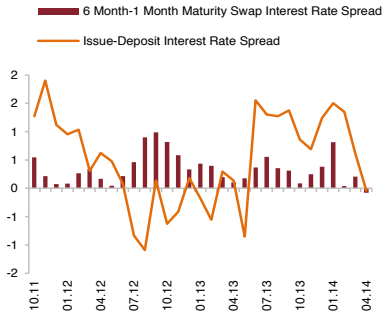
Chart III.2.14
Domestic Security Issues Rollover Ratios of the Banking Sector
(Percent)



Source: CBRT, PDP, CMB (Latest Data: 04.14)

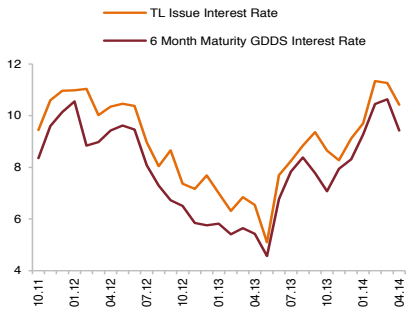
The direct FX selling interventions and FX selling auctions undertaken recently by the Central Bank to contain volatility in FX markets have increased banks' repo funding, yet led to a fall in their unencumbered GDDS stocks (Chart III.2.17). FX purchases that widened the net liquidity shortage of the banking system is the most prominent factor in the increase of funds provided by banks from the Central Bank through repo. Although repo transactions reduce banks' liquid assets, the fact that banks bear high amounts of GDDS on their balance sheets restrain the potential effects of the decrease in liquid assets on banks' behaviors.

Chart III.2.15
TL Issues-TL Deposits Interest Rate Spread and 6-Month -1-Month Maturity Swap Interest Rate Spread (Percent)



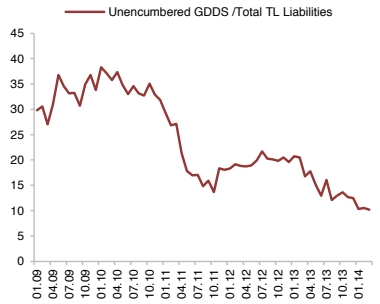
Source: Bloomberg, CBRT, PDP

Chart III.2.16
Interest Rates on TL Issues and GDDS with 6-Month-Maturity[1]
(Percent)



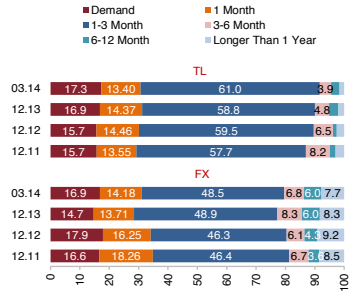
(1) 6 month maturity bond yield is calculated by using Extended Nelson-Siegel (ENS) method on bonds' prices in BIST Debt Securities Market .
Source: BIST, PDP, CBRT

Chart III.2.17
The Ratio of Unencumbered GDDS to Total TL Liabilities in Turkish Banking System[1]
(Percent)



(1) Excluding equity capital.
Source: BRSA - CBRT (Latest Data: 03.14)

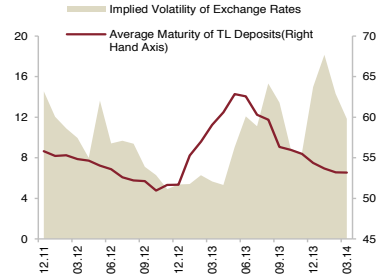
Chart III.2.18
Breakdown of Maturity[1]
(Percent)



(1) Excluding banking sector deposits and precious metal deposit accounts.

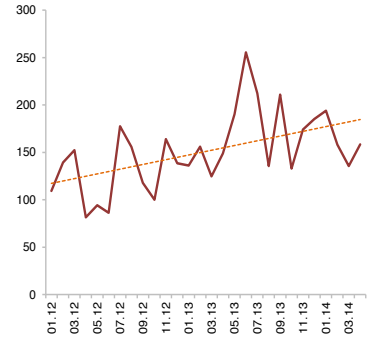
Source: BRSA –CBRT

Chart III.2.19
Average Maturity of TL Deposits and Implied Volatility of Exchange Rates[1]
(Day, 12-Month Ahead)



(1) The length of the weighted average maturity has been calculated by taking into account the mid-points of other maturity brackets and excluding the demand deposit accounts.
Source: Bloomberg, CBRT

Chart III.2.20
Ratio of the Average Volumes of Security Issues at Secondary Market[1] to Stock Security Issues (Percent)



(1) BIST Outright Purchases and Sales Market Private Sector Security Issues
Source: CBRT, BIST, PDP, CMB (Latest Data: 09.05.14)

The maturity of TL deposits have been on the decline since the second half of 2013 due to the volatility in exchange rates and interest rates. The maturity of deposits that are on a perpetual rise in terms of quantity across the system has been shortening. This situation increases the banks' susceptibility to interest rate risks rather than the liquidity risk. The yield curve of the TL savings deposits progressively assumed an upward trend after May 2013. The one and three-month deposit rates increased relatively much rapidly, which was particularly determinant in the maturity structure of TL deposits. Actually, while deposits continue to concentrate on 1 to 3 month-maturity, the maturity range that has a major predominance in TL deposits, the share of demand deposits has been increasing for the last one year. In the meantime, the breakdown of the maturity of FX deposits has not displayed a negative outlook. (Chart III.2.18 and III.2.19).

Although deposits are accepted as the most consistent source of funds and accordingly display a perpetual growth dynamics in overall terms, volatilities that may emerge with regard to banks' deposit base particularly in times of stress may constitute a liquidity risk for banks. In times of stress, deposits are likely to park in banks and bank groups that are perceived more secure; yet banks, have preserved their deposit bases as a group despite strong volatilities observed in domestic and foreign markets since May 2013.

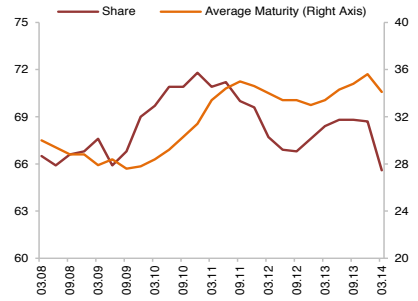
Investors holding the debt instruments issued by the private sector may sell these securities in the secondary market in the event of a liquidity need. The increase of the transaction volume in the secondary market has a dampening effect on the liquidity risk. Since 2012, secondary market transaction volumes have had a sharp upward trend compared to security issues (Chart III.2.20).

III.3. Interest Rate Risk

Lingering uncertainties related to the monetary policies of advanced economy central banks, fluctuations in the risk appetite of international investors and the volatility in domestic prices have increased the importance of financial sector's susceptibility to interest rate risks. Given the current level of profitability and equities, the Turkish banking system's sensitivity to interest rate risks remain at reasonable levels. Although the maturity structure of the banking sector's TL liabilities is short-term and has not showed a notable improvement over the years, the decline in the share of fixed-rate TL loans in total TL loans since mid-2011 and the halt in the increase in average maturities of such loans as well as the downward trend observed in both variables in the recent period restrain the sensitivity of the sector towards interest rate risks (Chart III.3.1). Commercial loans that account for approximately 70 percent of the TL loans are on a short-term and variable-rate scheme, which constitutes an important factor curbing the losses that banks might incur on potential volatilities in TL interest rates (Chart III.3.2).

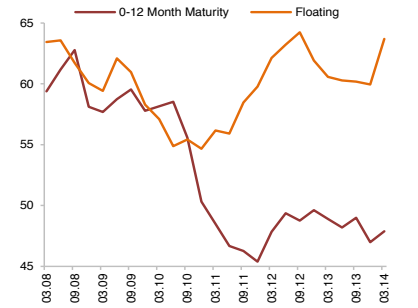
On the TL side, the main balance sheet item that increases banks' sensitivity to interest rate risk is consumer loans. Consumer loans are long term and fixed interest rate loans, and refinancing costs of borrowers of housing loans, which are the consumer loans with the longest maturity, are legally limited. These factors increase the interest rate risk borne by banks due to these loans. On the other hand, banks convert the FX-denominated long-term funds they provide from abroad to fixed-rate TL funds via cross currency swap transactions, which has a counterbalancing role in the face of these risks. However, the volumes of derivative transactions that are included in off-balance sheet transactions with a long-term maturity structure and charged with fixed rate on the TL side have been on a steady decline since 2010 compared to the volume of housing loans (Chart III.3.3). Regulations, effective as of February 2014, introduced to prevent over-indebtedness of households and to impose limitations on the maturities of other retail loans and vehicle loans are expected to put downward pressure on the interest rate risk borne by banks due to consumer loans.

Chart III.3.1
Share and Average Maturity of Fixed Rate TL Loans
(Remaining Maturity-Based, Percent, Month)



Source: CBRT

Chart III.3.2
Ratio of 0-12 Month Maturity and Floating Rate TL Corporate Loans to Total Corporate Loans[1] (Percent)

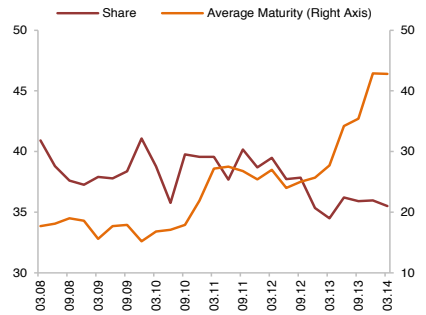


(1) For 0 to12-month maturity bracket, the original maturity has been taken into account. Data on floating rate TL corporate loans are assumed to not include floating rate consumer loans.
Source: CBRT

Chart III.3.3
Ratio of Fixed Rate Derivative Financial Instrument Liabilities with more than 1-Year Maturity to Housing Loans (Percent)

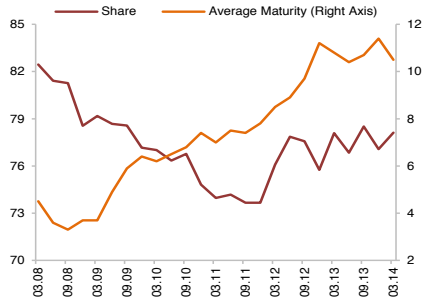
Source: CBRT

Chart III.3.4
Share and Average Maturity of Fixed Rate TL Securities
(Remaining Maturity-Based, Percent, Month)



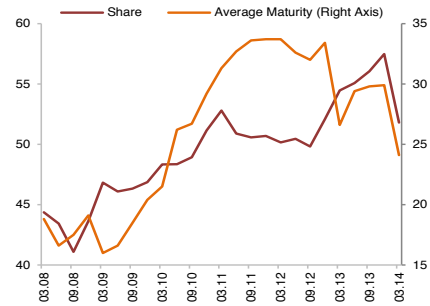
Source: CBRT

Chart III.3.5
Share and Average Maturity of Fixed Rate FX Liabilities
(Remaining Maturity-Based, Percent, Month)



Source: CBRT

Chart III.3.6
Share and Average Maturity of Fixed Rate FX Loans
(Remaining Maturity-Based, Percent, Month)



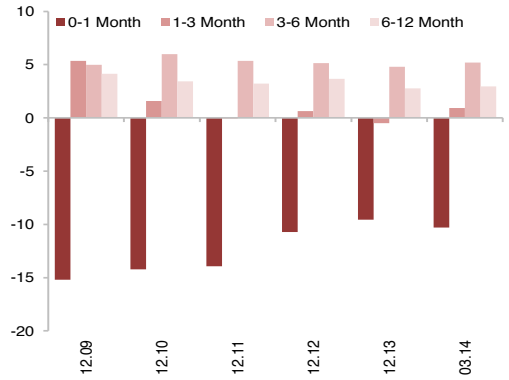
Source: CBRT

Although the average maturity of GDDS that have a significant share in total assets of the banking system has lengthened, a notable portion of these securities (including those indexed to CPI) are floating rate, which again reduces banks' susceptibility to the interest rate risk (Chart III.3.4).

On the FX side, banks can create funds with longer maturities compared to TL liabilities. Loans that constitute the majority of FX liabilities are long term, yet almost half of them are floating rate loans. These factors curb the losses that might be driven by potential fluctuations in FX funding costs (Chart III.3.5 and III.3.6). The recent sharp plunge in the share of fixed rate loans in total FX loans can be highlighted as a favorable development in an environment of lingering uncertainties regarding FX interest rates.

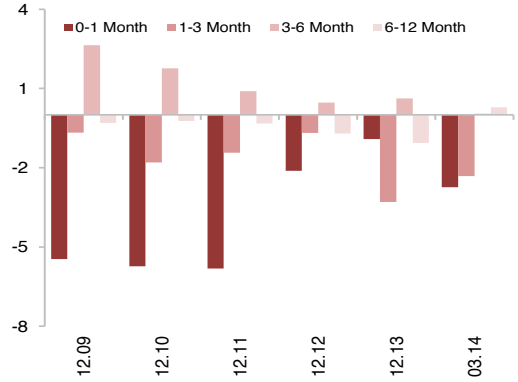
An analysis of the sensitivity of the banking system to the repricing risk from 2009 onwards suggests that on the TL side, interest rate sensitive open position in maturities up to one year has narrowed since the end of 2011. Alternatively, on the FX side, where asset and liability maturities are longer, interest rate sensitive open position has been relatively narrow in the range up to one year and although the interest rate sensitive open position had narrowed significantly at end-2012 rose slightly in the following period, it did not create a significant deterioration (Chart III.3.7 and III.3.8).

Chart III.3.7
TL Interest Rate Sensitive Asset-Liability Position/ Total Assets
(Percent)



Source: CBRT

Chart III.3.8
FX Interest Rate Sensitive Asset-Liability Position/ Total Assets
(Percent)



Source: CBRT

Box III.1.1 The Effect of Potential Interest Rate Shocks on Banks' CARs

This study presents a quantitative analysis of the repricing risks from 2009 to date, to which the banking sector might be exposed due to maturity mismatch.

During the analyses, banks' interest rate sensitive TL and FX assets and liabilities with maturities of 0-1, 1-3, 3-6 and 6-12 months have been repriced according to interest rake hikes by 500 basis points and 250 basis points, respectively, based on their balance sheets at the beginning of the specified period. Losses calculated based on the assumption that interest rate shocks would last for one year have been deducted from the regulatory capital amount of the subsequent year, the Capital Adequacy Ratios (CARs) have been re-calculated and compared with the actual CAR (CAR estimated for 2015). For instance, interest rate shock-driven losses calculated based on banks' end-2009 balance sheets and interest rate sensitivity positions have been reflected on end-2010 CAR and compared with the actual CAR. Losses driven by interest rate risks for March 2015 have been calculated based on March 2014 balance sheet. For estimation of March 2015 CAR, the last three years' average growth figures of the regulatory capital and risk weighted assets have been used.

The sector's CAR has been affected more from the TL interest rate shock compared to the FX interest rate shock. This is mainly attributable to the extent of the banking system's sensitivity to the TL interest rate shock, rather than the magnitude of shocks. The results indicate that the effect of the TL interest rate shocks on CAR has remained below 0,5 percent for the period under review. Yet, the effect of losses due to the FX interest rate shock on CAR is negligible (Chart III.1.1.1 and III.1.1.2).

Chart III.1.1.1
CAR After the TL Interest Rate Shock[1]
(Percent)

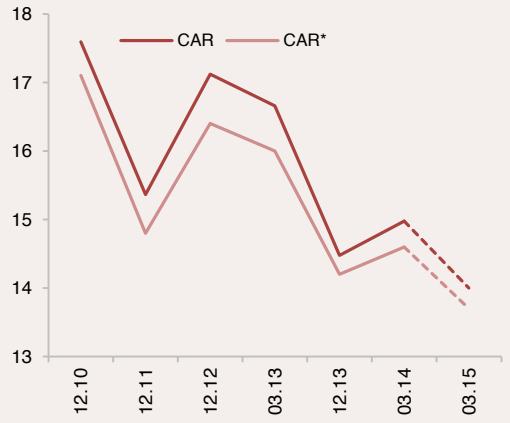
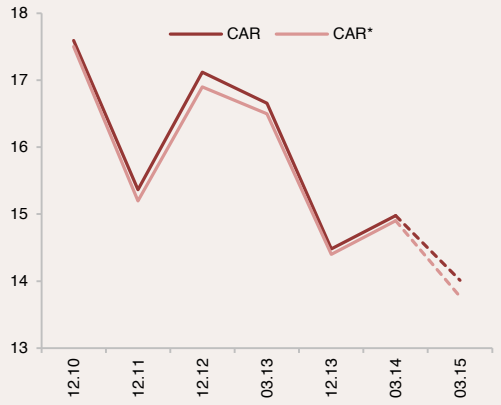


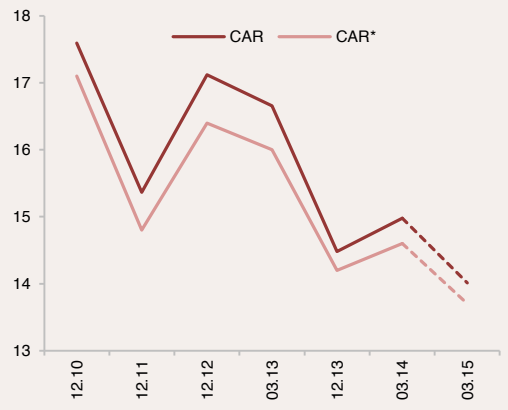
Chart III.1.1.2
CAR After the FX Interest Rate Shock[1]
(Percent)



(1) Calculations are based on the data of banks with an asset size of TL 5 billion and more (excluding Eximbank).
(*) Post-shock CAR
Source: CBRT (Latest Data: 03.14)

Considering that the potential FX interest rate shocks will also have an impact on TL interest rates, it will be more reasonable to assess the overall effect of both shocks. The overall effect of shocks on CAR is illustrated in Chart III.1.1.3. The chart indicates that the effect of potential losses driven by repricing risks on CAR has mitigated for the last two years.

Chart III.1.1.3
CAR After the TL and FX Interest Rate Shock[1]
(Percent)



1 Calculations are based on the data of banks with an asset size of TL 5 billion and more (excluding Eximbank).
(*) Post-shock CAR

Source: CBRT (Latest Data: 03.14)

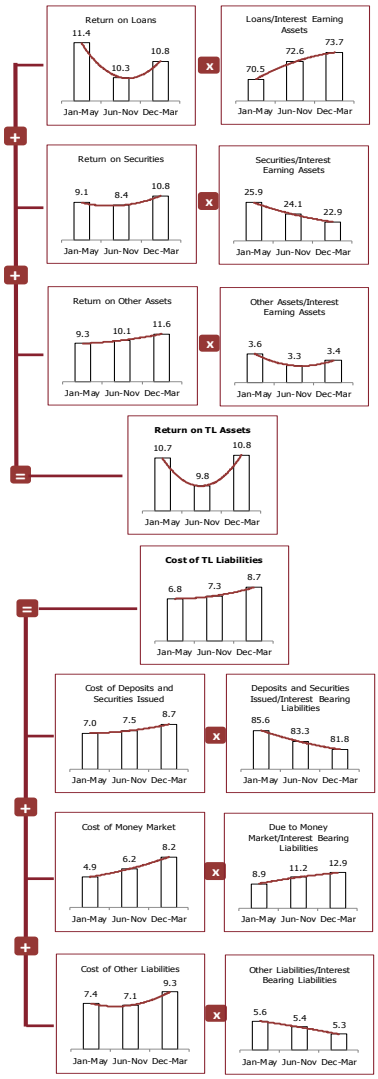
In conclusion, the sensitivity of the banking system to up-to-one-year repricing risk is limited and can endure potential interest rate shocks thanks to its current capital structure.

III.4. Capital Adequacy, Profitability and Resilience to Shocks

The rise in interest rates after May 2013 reduced the spread between the return on assets and the cost of liabilities as a result of the maturity mismatch in the balance sheet structure of the banking sector. An analysis of the banking sector's profitability performance throughout 2013 and in the first quarter of 2014 by periods of January-May, June-November and December-March reveals that the spread between the return on TL assets and the cost of TL liabilities declined from 3,9 percent to 2,5 percent and to 2,1 percent, respectively. The decline between the January-May and June-November periods was triggered by the decrease in returns on loans and securities. The increase in the costs of deposits and issues was determinant in the further contraction of the spread between the June-November and December-March periods. On the other hand, the increase in the share and return of loans in the interest earning assets curbed the contraction of the spread between return on assets and cost of liabilities in TL significantly (Chart.III.4.1). However, the spread between the return on FX assets and cost of FX liabilities did not change remarkably in the periods analyzed.

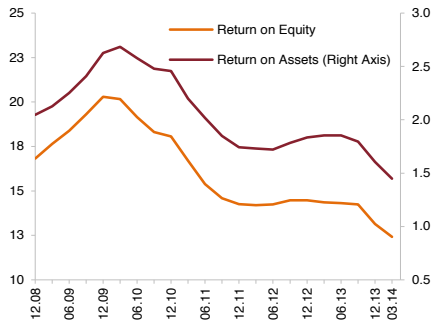
After a flat course during the last two years, the sector's twelve-month-cumulative returns on assets and liabilities started to downtrend in July 2013 and fell to 1,4 and 12,4 percent in March 2014 (Chart III.4.2). The decline in profitability despite a strong asset growth driven mainly by loans was due to the negative impact of the upward trend in interest rates both on net interest income and on non-interest income and expenditures.

Chart III.4.1
Analysis of the Development of the Banking Sector's Return on TL Assets / Cost of TL Liabilities
(Percent)



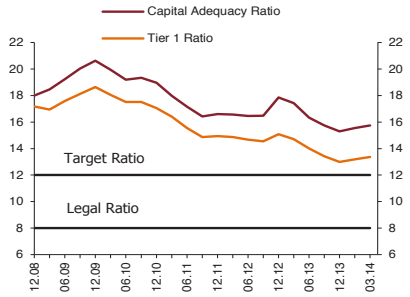
Source: BRSA-CBRT

Chart III.4.2
Return on Assets and Return on Equity
(Percent)



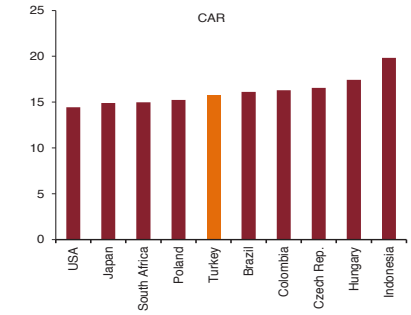
Source: BRSA-CBRT

Chart III.4.3
Capital Adequacy Ratio
(Percent)



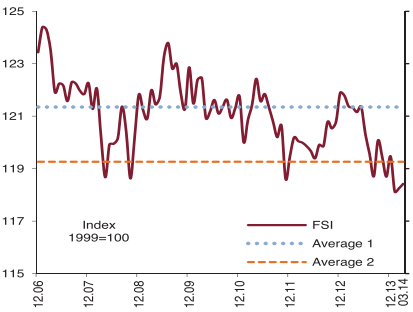
Source: BRSA –CBRT

Chart III.4.4
Capital Adequacy Ratios by Countries[1]
(Percent)



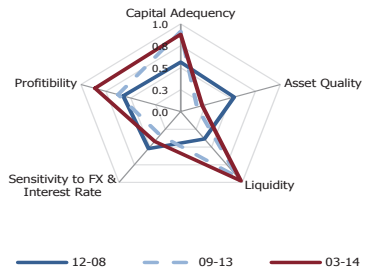
(1) Latest data from the IMFFSI database has been used, most of which are figures pertaining to the second quarter of 2013. The Turkey data are as of March 2014Source: BRSA – CBRT, IMF

Chart III.4.5
Financial Strength Index[1,2]



(1) "Average 1" is the average of December 1999 – March 2014 and "Average 2" is the average of January 2004 – March 2014.
(2) Since they have different operating principles, participation banks have been excluded.
Source: BRSA–CBRT

Chart III.4.6
Banking Sector Stability Map[1]



(1) A sub-field of the "Financial Stability Map".
Source: BRSA - CBRT

The recent fluctuations in interest rates and exchange rates have had an adverse impact on capital adequacy ratio as well as the profitability of the banking sector, however the capital adequacy ratio continued to stay above the legal and target ratios. As of March 2014, the sector's CAR surged by 0,4 points to 15,7 percent compared to end-2013 in response to the slowdown in the increase of risk weighted assets (Chart III.4.3). The ratio of the Tier 1 capital is high, which denotes that the quality of equities is strong. Compared to other countries, the Turkish banking sector's capital adequacy remains robust (Chart III.4.4).

The leverage-based reserve requirement regulation that aims to boost the resilience of the banking sector to shocks by containing its indebtedness started to be implemented in full capacity as of December 2013. The year 2013 was the monitoring period for the leverage-based reserve requirement implementation that envisaged a gradual transition. The data pertaining to October-December 2013, the first three months of the implementation period suggest that the banking sector's leverage ratio, having a stable course, is well above the minimum ratio of 3 percent set by the Basel III regulation and 3.5 percent set by the CBRT for the first year of the implementation. An analysis by banks reveals that no bank is required to hold additional reserve requirements.

The financial strength index inched down in March 2014 compared to the previous reporting period due to the downtrend in all the sub-indices excluding liquidity and capital but mostly the one in interest rate risk. Nevertheless, it is still above 100 percent (Chart III.4.5). The development of the risk indicators of the banking sector indicates that compared to the previous reporting period, although the profitability has displayed a negative trend, sensitivity to exchange rate and interest rate has posted a slight improvement while capital adequacy and liquidity have remained almost unchanged. On the other hand, the indicator of the asset quality declined slightly in the period analyzed due to the limited increase in the non-performing loan balance (Chart III.4.6).

The macro scenario analyzes the developments in the sector's NPL and capital adequacy ratios that might emerge in the event of a change in 2014 macroeconomic variables equivalent to the deterioration observed in the post-2008 global crisis. The values that macroeconomic variables can take under baseline and adverse scenarios have been created by using the MTP, Inflation Report and previous year realizations (Table III.4.1).

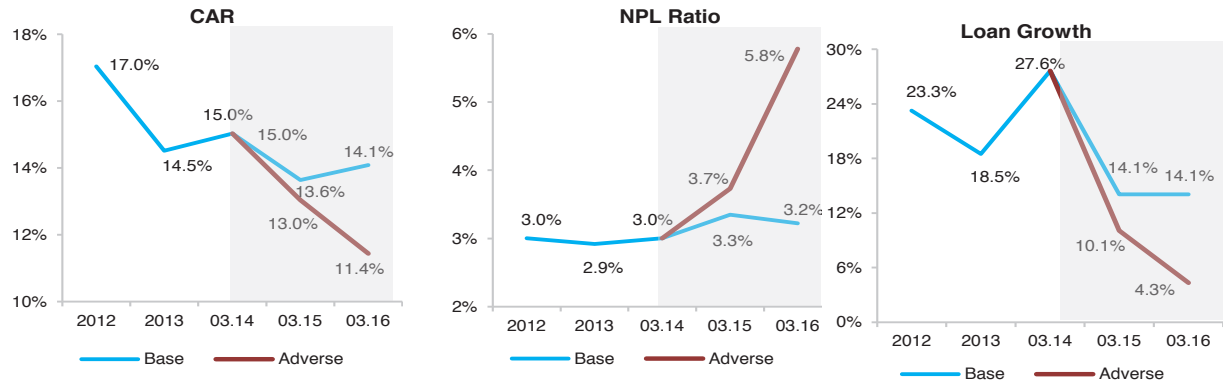
Table III.4.1
Macro Stress Test Scenarios

Baseline Scenario[1]	2011	2012	2013	**2014**	**2015**
Real GDP growth rates	8.60%	2.13%	4.05%	**4.00%**	**5.00%**
CPI, December/December	10.45%	6.20%	7.40%	**7.60%**	**5.00%**
Unemployment rate	9.83%	9.19%	9.71%	**9.40%**	**9.20%**
Adverse Scenario[2]	**2011**	**2012**	**2013**	**2014**	**2015**
Real GDP growth rate	8.60%	2.13%	4.05%	**0.66%**	**-4.83%**
CPI, December/December	10.45%	6.20%	7.40%	**10,06%**	**6.53%**
Unemployment rate	9.83%	9.19%	9.71%	**10.95%**	**13.97%**

1) In the baseline scenario, the values projected in the Medium Term Program have been used as the growth rate, unemployment rate and consumer prices rate of increase. For 2014 consumer prices rate of increase, the year-end inflation forecast that was announced in the Inflation Report of April 2014 has been used.
2) In the adverse scenario, actual figures of 2008 and 2009 have been used.

According to calculations, the sector's NPL ratio that is estimated as 3,2 percent under the baseline scenario can rise up to 5,8 percent under the adverse scenario. Furthermore, while the sector's CAR is estimated to be 14,1 percent in the first quarter of 2016 under the baseline scenario, this ratio is calculated to fall to 11,4 percent in the same period under the adverse scenario (Chart III.4.7).

Chart III.4.7
CAR, NPL Ratio and Loan Growth of the Banking Sector under the Scenario Analysis
(Percent)



Source: CBRT calculations

The stress test results based on the adverse scenario have been analyzed by differentiating the effects of risk components on CAR (Chart III.4.8 and III.4.9). Under the adverse scenario, the most prominent factors behind the fall of the sector's CAR below the target ratio are risk weighted assets (RWA) and the increase in the credit risk. Under the current scenarios, the risks related to exchange rate, market and repricing are less capable to affect the sector's CAR compared to the credit risk.

Chart III.4.8

Contributions to the Decrease in CAR under the Adverse Scenario (2014-2015)
(Points)

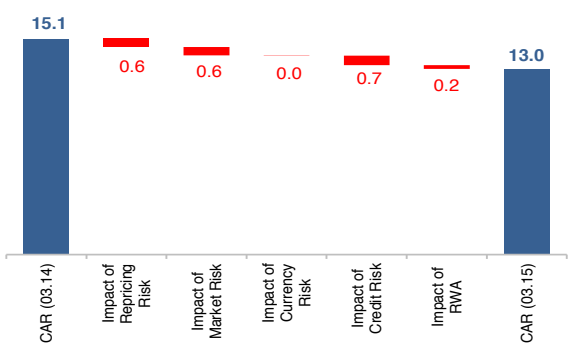
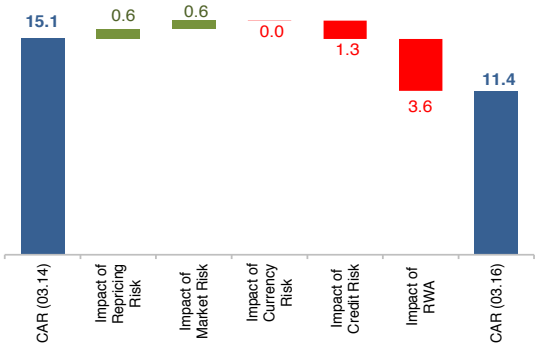


Chart III.4.9

Contributions to the Decrease in CAR under the Adverse Scenario (2014-2016)
(Points)



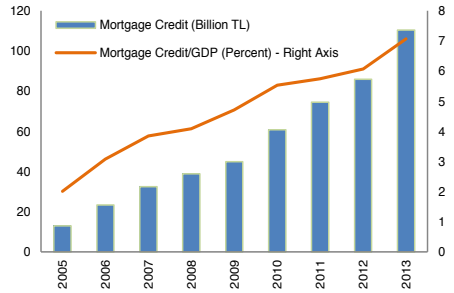
Source: CBRT Calculations

IV. Special Topics

IV.1. Micro-Dynamics of Mortgage Credits in Turkey

Financial deepening has accelerated with the improvement in macroeconomic structural factors in Turkey. In this process, mortgage credits have been one of the most growing credit types because of the decline in credit interest rates and the extension of credit maturities. For example, the mortgage credit/GDP ratio which had been 2.01 percent in 2005, reached 7.07 percent in 2013 (Chart IV.1.1). In addition, the share of mortgage credits in total assets of the banking sector rose to 6.5 percent in 2013, while it was 3.1 percent in 2005. On the other hand, despite the rapid growth, comparisons with developed and developing European countries imply the existence of high growth potential in the credit / GDP ratio[5] as well as mortgage credits for Turkey. The healthy condition of the projected growth process of mortgage credits and the residential sector has great importance in terms of financial stability. Possible imbalances in credit growth have the potential to affect financial stability due to both an inefficient allocation of resources in the economy and the effects on household indebtedness. A comprehensive analysis of mortgage credits and the housing sector is necessary because of the importance of these credits for the economy. This study, which represents a small part of this comprehensive project, presents the micro-dynamics of mortgage credits in detail.

Chart IV.1.1
Mortgage Credits and Mortgage Credits/GDP



Source: CBRT - BAT-Risk Center

This study summarizes the results from Altunok et al. (2014), who examined a number of people using credit from different income groups, the amount of credit per capita, the share of average monthly payment and total credit usage. Then, they analyzed the distribution of age, maturity, the non-performing loans (NPL) ratio, and housing values. They examined the credit flow of approximately 1.9 million people using mortgage credit between 2009 and 2013. Due to constraints in accessing the

5 While the Mortgage Credit / GDP ratio was over 100 percent in Denmark and the Netherlands in 2012, the level rose from 2 percent in 2002 to 18 percent in 2012 in countries such as the Czech Republic, Slovenia, Bulgaria and Lithuania.

information about income and housing values in Turkey, two important assumptions were made. Income and housing values were estimated from monthly installment payments and total amount of credit usage respectively. The results of this study should be considered in light of these crucial assumptions. First, eight different income groups were established as multiples of each years' minimum wage.[6] The monthly installment of mortgage credit cannot exceed 70 percent of the declared income. The duration of the average maturity of mortgage credits increased significantly between 2002 and 2008, but then stabilized and began to reach a plateau. Since the study covers data after 2009, the installment amount was set as a reference point to estimate the income of individuals. Chart IV.1.2, illustrates that, because maturities are horizontal after 2009, income is predicted consistently in terms of amount of installments during this period. **As a result, the average income of individuals in each month is calculated as double the amount of installment; then, individuals are grouped according to the calculated income levels.** The limits for these groups are shown in Table IV.1.1 only for the year 2013 and the limits of other years are adjusted based on the relevant years' minimum wage rate. Flow data is used in this study to prevent shifts between income groups due to the inflation adjustment between amounts of installments in different years. Since the amount of the credit installment is one of the main factors in credit usage and the choice of maturity, the correlation between installment choice and total income are considered to be strong.

Table IV.1.1
Income Groups (TL)-Monthly

	Group-1	Group-2	Group-3	Group-4	Group-5	Group-6	Group-7	Group-8
2013	0-891	892 -2,673	2,674 -4,455	4,456 –8,910	8,911 - 22,275	22,276 - 44,550	44,551 - 89,100	Greater Than 89,101

6 Inflation changes for the previous years are taken into account in this way.

Tables IV.1.2a and IV.1.2b present the numbers and percentages of people using credit for each income group. In Table IV.1.2a, there seems to be a considerable increase in the total number of people using mortgage credits between 2009 and 2013. While the rate of growth is more pronounced in the lowest three income groups, the maximum increase is observed in the lowest income group. As seen Table IV.1.2b, income group 2, that has the highest share, increased by 69.1 percent and reached 58.8 percent share in 2013. The share of other high-income groups contracted from 2009 to 2013.

In Table IV.1.3a, the amount of mortgage credits per capita is given for each income group and shows whether the increase in the number of people using mortgage credits is supported by the volume of credit usage. The amount of mortgage credit per capita increased in real terms for all income groups except income group 7 between 2009 and 2013. In addition, the volume of credit per capita in high-income groups (i.e., Group 8) is more volatile than low-income groups. Having few people and high credit volume in these groups could be the reason for this result. The Table shows that the average amount of installment for mortgage credits increased for the first seven income groups in real terms and declined in real terms for the highest-income group (Table IV.1.3b). Table IV.1.3c gives the credit shares of income groups for the same years. While the credit shares of two groups with the lowest income increased over 100 percent, there has been approximately 40 percent decrease in the share of high-income groups. The credit shares increased from 78.1 percent to 87.4 percent between 2009 and 2013. Although the share of income group 2 was lower than that of 3 and 4 in 2009, this share was higher than the two groups' shares in 2013.

Table IV.1.2a
Number of People Using Mortgage Credit (Thousands)

	Group-1	Group-2	Group-3	Group-4	Group-5	Group-6	Group-7	Group-8	Toplam
2009	1.9	92.2	91.1	60.5	16.2	2.3	0.6	0.5	265.2
2010	4.3	158.6	119.8	60.7	16.1	2.5	0.6	0.5	363.0
2011	6.2	197.3	109.7	49.6	13.8	2.2	0.6	0.4	379.7
2012	4.5	178.0	107.1	48.3	13.3	2.3	0.7	0.5	354.7
2013	11.3	342.8	150.0	60.2	15.2	2.5	0.8	0.4	583.2
% Change*	484.2	271.9	64.6	-0.6	-6.1	9.7	39.7	-3.3	119.9

*Represents the percentage change between 2009 and 2013.
Source: BAT-Risk Center

Table IV.1.2b
Total Person Index (Percent)

	Group-1	Group-2	Group-3	Group-4	Group-5	Group-6	Group-7	Group-8
2009	0.7	34.7	34.4	22.8	6.1	0.9	0.2	0.2
2010	1.2	43.7	33.0	16.7	4.4	0.7	0.2	0.1
2011	1.6	52.0	28.9	13.1	3.6	0.6	0.2	0.1
2012	1.3	50.2	30.2	13.6	3.8	0.6	0.2	0.1
2013	1.9	58.8	25.7	10.3	2.6	0.4	0.1	0.1
% Change*	165.7	69.1	-25.1	-54.8	-57.3	-50.1	-36.5	-56.0

* Represents the percentage change between 2009 and 2013.
Source: BAT-Risk Center

Table IV.1.3a
Mortgage Credit Volume Per Capita (Thousand TL)

	Group-1	Group-2	Group-3	Group-4	Group-5	Group-6	Group-7	Group-8
2009	14.2	37.4	60.5	89.3	162.4	346.2	526.6	813.5
2010	24.4	47.4	76.4	112.7	216.9	435.8	861.1	1,170.4
2011	34.5	45.7	73.5	112.3	206.4	335.5	596.5	1,183.3
2012	33.1	56.9	89.4	134.2	256.8	479.5	594.6	674.2
2013	40.1	65.4	103.3	159.1	299.5	527.4	677.3	1,372.6
% Change*	182.6	75.0	70.6	78.1	84.4	52.3	28.6	68.7
% Real Change**	149.2	41.6	37.2	44.7	51.0	18.9	-4.8	35.3
Variance***	82.2	93.4	212.5	554.2	2,167.5	5,559.5	13,293.2	66,660.9

* Represents the percentage change between 2009 and 2013.
** Real change is calculated based on the consumer price index.
*** The variance in each group was calculated and used as an indicator of the volatility.
Source: BAT-Risk Center

Table IV.1.3b
Monthly Payment Amount Per Capita (TL)

	Group-1	Group-2	Group-3	Group-4	Group-5	Group-6	Group-7	Group-8
2009	238	666	1,179	2,006	4,317	10,283	20,186	113,525
2010	272	706	1,276	2,223	4,844	11,170	22,894	111,900
2011	306	776	1,409	2,487	5,429	12,521	25,220	123,260
2012	334	852	1,527	2,684	5,941	14,132	27,836	134,093
2013	373	923	1,687	2,970	6,481	15,511	30,395	151,209
% Change*	57.2	38.6	43.0	48.1	50.1	50.8	50.6	33.2
% RChange**	23.8	5.2	9.6	14.7	16.7	17.4	17.2	-0.2

* Represents the percentage change between 2009 and 2013.
** Real change is calculated based on the consumer price index.
Source: BAT-Risk Center

Table IV.1.3c
Credit Share for Income Groups (Percent)

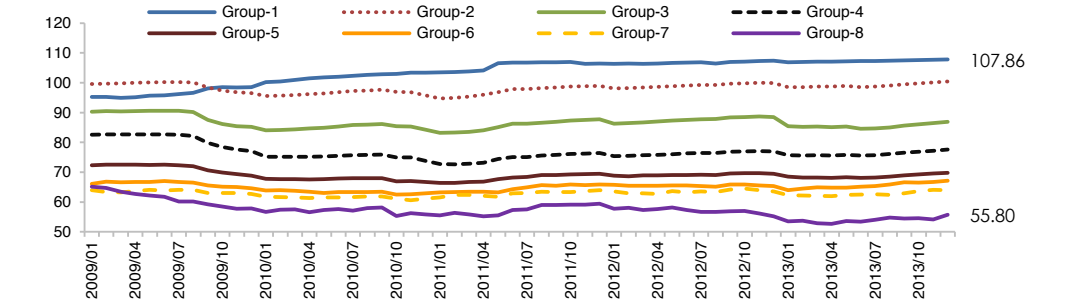
	Group-1	Group-2	Group-3	Group-4	Group-5	Group-6	Group-7	Group-8
2009	0.2	18.7	29.6	29.5	14.4	4.1	1.8	1.7
2010	0.4	25.8	31.7	24.0	11.8	3.4	1.5	1.4
2011	0.6	33.4	29.7	20.4	10.4	3.0	1.5	1.2
2012	0.5	31.5	30.3	20.5	10.6	3.4	1.6	1.6
2013	0.7	40.8	28.3	17.5	8.2	2.4	1.1	0.9
% Change*	209.4	118.0	-4.3	-40.7	-43.3	-41.1	-36.6	-45.3

* Represents the percentage change between 2009 and 2013.
Source: BAT-Risk Center

Chart IV.1.2 shows that the average maturity generally follows a stable trend in mortgage credits used after 2009; however, the average maturity is inversely proportional to the income. This means that people with higher income use more short-term credit. The average maturity of the lowest income group (107 months) is approximately twice that of the average maturity in the highest income group (55 months).

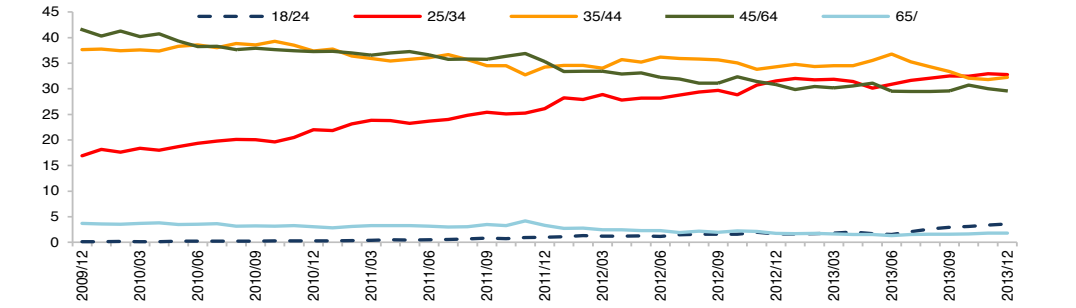
Chart IV.1.3 presents age distributions of people using mortgage credit with flow data set for the period 2009-2013. The proportion of young people under the age of 35 has increased in recent years. While the share of people in the 18-34 age range is 16.9 percent in 2009, it reaches 35.5 percent in 2013. There is a decline the shares of 35-44 and 45-64 age groups in 2013. The weight of people aged 45 and above decreased from the level of 45.2 percent to 32.1 percent. Therefore, the decision of housing purchases was made in earlier ages as a result of the easing of access to credit facilities and also extension of the maturity.

Chart IV.1.2
Average Maturity for Income Groups (Stock)



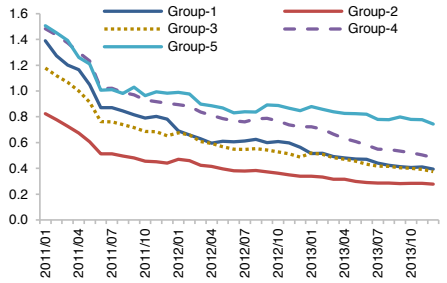
Source: BAT-Risk Center

Chart IV.1.3
Age Distribution of People Using Mortgage Credit (Percent)



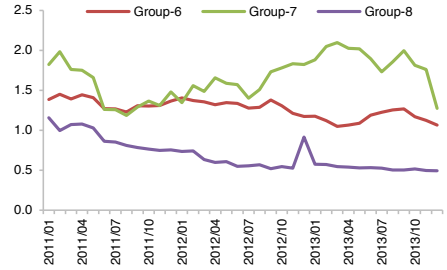
Source: BAT-Risk Center

Chart IV.1.4
NPL Ratios for Income Group (Percent)



Source: BAT-Risk Center

Chart IV.1.5
NPL Ratios for Income Group (Percent)



Source: BAT-Risk Center

Non-performing loan ratios by income groups are given in Charts IV.1.4 and IV.1.5.[7] NPL ratios decreased for all groups between 2011 and 2013, and the decline in the first five low-income groups occurred more smoothly, but there is a fluctuating decline in the other three high-income groups. The volatility of income group 7 is especially higher than the others. However, considering the fact that the share of five low-income groups and the other three high income groups are 95.5 and 4.5 percent respectively, the financial system can feasibly absorb the risks arising from the volatility experienced in these groups. This situation also does not create a great risk for financial system. In addition, the NPL ratios of income groups 2 and 3 are at lower levels within the five low-income groups. The forming of income groups 2 and 3 by fixed income employees may be the reason for this case. Income group 1 has a higher NPL ratio than income groups 2 and 3. This group is formed by the lowest income earners (minimum wage people, etc.); hence, the probability of facing default risk is more likely.

The high shares (86.6 percent) of income groups 2, 3 and 4, require examining the relationship between value of houses and income of individuals in more detail. Because there is no information on the value of houses in the database, an assumption is made for the prices. Since the credit amount cannot exceed 75 percent of the value of real estate, the housing value is estimated as "Credit Amount x 4/3" and nine separate clusters are formed for these values[8]. The lower limits in the housing value clusters show the minimum value of houses purchased (Table IV.1.4).

Table IV.1.4
Housing Value Clusters (Thousand TL)

	Cluster-1	Cluster-2	Cluster-3	Cluster-4	Cluster-5	Cluster-6	Cluster-7	Cluster-8	Cluster-9
2013	0-24	24-60	60-100	100–250	250-500	500-1,000	1,000-5,000	5,000-10,000	Greater Than 10,000

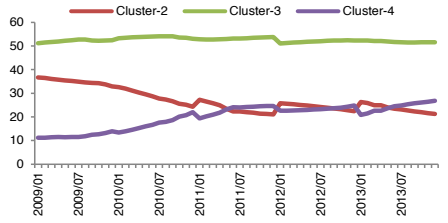
7 Analysis about NPL ratios has been made based on stock data.

8 Inflation changes in housing value clusters for the previous years are taken into account with the minimum wage index.

Income group 2, having highest share of credits (40.8 percent), is concentrated in the housing value clusters 2, 3 and 4 with the rate of 99.63 percent. The progress of the credit shares and NPL ratios of the people in these clusters are given in Charts IV.1.6 and IV.1.7. There is a shift from cluster 2 which corresponds to a relatively low housing value and NPL ratio volatility towards cluster 4 which corresponds to higher housing values and NPL ratio volatility. The general trend of the NPL ratios exhibits a similar tendency with the trend of the overall NPL ratio in mortgage credits. The progress of the housing value clusters forming the majority of income group 3 is given in Charts IV.1.8 and IV.1.9. There is a shift from clusters 2 and 3 which corresponds to relatively low housing value and NPL ratio volatility towards cluster 4 which corresponds to higher housing values and NPL ratio volatility. Similar analyses are given for income group 4 in Charts IV.1.10 and IV.1.11. There is a shift from clusters 3 and 4 towards cluster 5. Following a similar trend of NPL ratios on a cluster basis with overall NPL ratios, and NPL ratios on an income basis with a convergence of these NPL ratios to the level of 0.5 percent, shows that the industry is growing in a healthy structure. On the other hand, an ongoing shift from a relatively low housing value and NPL ratio volatility towards higher housing values and NPL ratio volatility may create a risk and should be monitored carefully.

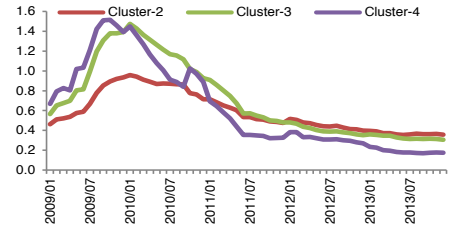
This study analyzed the micro-dynamics of mortgage credits, revealing that maturities of mortgage credits have increased and the NPL ratio has followed a moderate trend despite the rapid growth. The increase in demand usually originates from lower-middle and middle-income people and people under the age of 35. Although the share of total credits of people in these income groups has increased significantly, there has been a steady decline in NPL ratios, especially after 2011. The share of high income individuals has narrowed relatively, indicating that the NPL ratio of these groups has a more volatile structure. On the other hand, despite the low NPL ratio, shifting from a low housing value to a high housing value, experienced in lower-middle and middle-income groups, is closely monitored in terms of financial stability. Furthermore, using income groups and housing segments when making

Chart IV.1.6
Credit Shares of Housing Value Clusters for Income Group 2 (Percent)



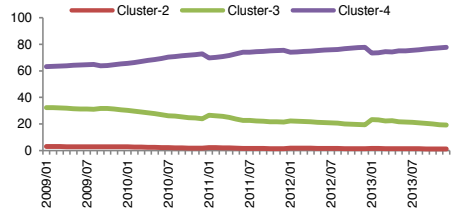
Source: BAT-Risk Center

Chart IV.1.7
NPL Ratios of Housing Value Clusters for Income Group 2 (Percent)



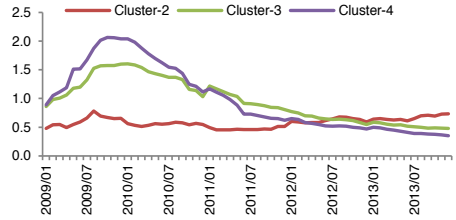
Source: BAT-Risk Center

Chart IV.1.8
Credit Shares of Housing Value Clusters for Income Group 3 (Percent)



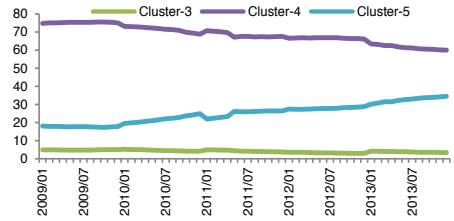
Source: BAT-Risk Center

Chart IV.1.9
NPL Ratios of Housing Value Clusters for Income Group 3 (Percent)



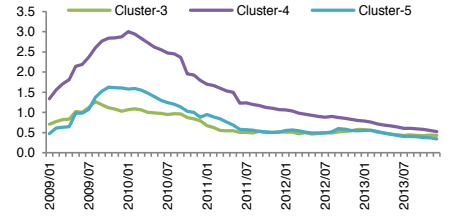
Source: BAT-Risk Center

Chart IV.1.10
Credit Shares of Housing Value Clusters for Income Group 4 (Percent)



Source: BAT-Risk Center

Chart IV.1.11
NPL Ratios of Housing Value Clusters for Income Group 4
(Percent)



Source: BAT-Risk Center

macro-prudential policies and regulations related to mortgage credits may significantly affect the success of these policies.

The studies examining the relationship among mortgage credits, home ownership, and saving rates will be continued by including prices and interest rates over smaller samples. In this study, we make an important assumption and estimate housing values over the amount of credit used. In the ongoing studies, we will obtain information about housing values and take notice of data sets including housing prices and stock-sale information with regional differences. Then, an analysis related to the points having potential to create a risk in terms of financial stability in the housing sector will be continued. The housing sector has a rapid growth in Turkey and is expected to continue with this increasing trend in the near future. Therefore, an analytical perspective including all aspects of the housing sector will be presented in order for the sector to grow in a healthy way and contribute to financial stability.

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IV.2. Determinants of Hedging in Turkey

FX Risk and its management play an important role in emerging markets when there is a high volatility of exchange rates. Especially after the FED announced a tapering of QE, hedging instruments have drawn attention due to the substantial increase of exchange rates in emerging markets[9]. The high volatility of the Turkish currency between May 2013 and January 2014 makes the Turkish case interesting for analyzing the hedging behavior of firms. Turkish firms with high FX liabilities are prone to utilizing hedging instruments but what the determinants of this choice are is an open question. This section reviews the study of Altunok, Aytug and Hacıhasanoglu (2014).

The literature provides some guidance about the determinants of hedging from both theoretical and empirical perspectives. From a theoretical perspective, firms utilize hedging instruments to minimize tax liability, reduce the financial stress and maximize the wealth portfolio. Smith and Stulz's (1985) study is considered to be the earliest theoretical paper claiming that hedging would result in a reduced tax liability[10]. On the other hand, there is a vast empirical literature that tries to prove different theories about the determinants of hedging. The earliest empirical papers are Smith and Smithson (1993) and Dolde (1995). Both studies survey firms to learn whether firms use derivative instruments since hedging information was not disclosed in the annual reports at the time[11]. However, most of these papers use the data from US firms, thus the determinants of hedging in emerging markets have not yet been examined sufficiently. Only a few papers usie non-US data: Marshall (2000), Hagelin (2003), Kim and Sung (2005) and Junior (2007).

9 The Turkish Lira (TL) has depreciated the most, by 25 percent, among emerging countries since then.

10 Froot et al. (1993), De Marzo and Duffie (1995), Burnside et al. (2001) and Schneider and Tornell (2004) are other important theoretical papers.

11 Some of the other empirical papers are Wysocki (1995), Mian (1996), Geczyet al. (1997), Graham and Rogers (2002), Allayannis and Ofek (2001), Carter et al. (2003) and Judge (2006).

Altunok, Aytug and Hacıhasanoglu (2014) investigate the determinants of hedging in Turkey using the data on non-financial Turkish firms. The results show that firm size, which is a proxy for cost of hedging, imports, FX credit, leverage, and gross profit margin are statistically significant determinants of hedging in Turkey. While firm size, imports and FX credit increase the probability of using derivative instruments, leverage and gross profit margin decrease the probability. The results are consistent with the findings in the literature.

This study uses a very unique and comprehensive dataset which includes balance sheet and income statement items as well as outstanding derivatives and imports of non-financial Turkish firms. Balance sheets and income statements come from the dataset of CBRT real sector balance sheets. Outstanding derivatives were collected from the CBRT database. Import data was hand-collected. CBRT real sector balance sheets have data for 9244 firms. While the information on derivatives for all those firms exists, the imports data was acquired for only 437 firms. Thus, the analysis was made with a smaller sample, and then the whole sample was used for a robustness check.

The literature suggests that the balance sheet data needs to be dated prior to the derivatives data in order to mitigate the endogeneity problem. Thus, balance sheet items are reported as of 2012 and the derivatives data is reported as of 2013. The literature also suggests that firm size be used as a proxy for the cost of hedging. In this study, firm size is estimated using logarithm of assets.

Table 1 shows the summary statistics of variables used in the study. In order to remove the effect of outliers, all variables were winsorized at the 5 percent level. Both samples have similar characteristics. For instance, the means of assets, liquidity, firm age, gross profit margin, ROA and tax to profits ratio are very close. On the other hand, the means of leverage, FX credit and exports are higher for the importers[12] A comparison of hedgers and non-hedgers shows that the means of FX credit and imports

12 There are 4532 exporters in the whole sample and the exports to assets ratio is 0.30.

are higher for hedgers.

The probit model below is used to examine the determinants of hedging.

$$HEDGE_i = \beta_0 + \beta_1 IMP_i + \beta_2 FXCre_i + \beta_3 Size_i + \beta_4 GPM_i + \beta_5 Lev_i + \beta_6 EXP_i + \beta_7 Liq_i + \varepsilon_i$$

where $HEDGE_i$ is the hedging dummy, IMP_i is the ratio of imports to assets, $FXCre_i$ is the ratio of FX Credit to assets, $Size_i$ is the log of assets, GPM_i is gross profit margin, Lev_i is leverage, defined as assets minus equity divided by equity, EXP_i is the ratio of exports to assets, and Liq_i is Liquidity, defined as current assets divided by current liabilities, for firm i.

The dependent variable is the hedging dummy which takes 1 if a firm utilizes a derivative instrument and 0 otherwise. First, six different specifications of the model were estimated with the small sample. Then, six different specifications of the model were re-estimated with the full sample. The marginal effects of right-hand side variables instead of estimated coefficients are reported in all tables.

Table IV.2.I

Descriptive Statistics

	Probit Sample		Hedge=1		Hedge=0		Full Sample	
	Obs	Mean	Obs	Mean	Obs	Mean	Obs	Mean
	437	0.41	178	1.00	259	0,00	9244	0.09
Ln (Assets)	437	18.27	178	1.60	259	18.04	9244	17.05
Leverage	437	2.81	178	2.50	259	3.03	9244	3,23
Liquidity	437	1.66	178	1.61	259	1.70	9239	1.77
Imports/Assets	437	0.31	178	0.41	259	0.24	-	-
Ln (Firm Age)	437	3.14	178	3.14	259	3.14	9242	2.91
Gross Profir Margin	437	0.15	178	0.13	259	0.17	9238	0.18
FX Credit/Assets	437	0.31	178	0.35	259	0.29	9244	0.10
Exports/Assets	437	0.49	178	0.54	259	0.45	9244	0.14
ROA	437	0.04	178	0.04	259	0.04	9244	0.03
FX Credit/Total Credit	437	0.72	178	0.77	259	0.68	9244	0.24
Exports/Sales	437	0.42	178	0.44	259	0.40	9240	0.14
TI Credit/Assets	437	0.13	178	0.11	259	0.15	9244	0.25
Tax/Profits	437	0.14	178	0.15	259	0.14	9241	0.13
Fin Exp/Total Credit	436	0.08	178	0.09	258	0.08	8485	0.18

The estimation results are presented in Table 2. The first column is the benchmark model which includes the variables in the above equation. The second column includes alternative measures of profitability, exports and FX credit. These variables are ROA, the ratios of exports to sales, and FX credit to total credit, respectively. The third column includes additional control variables to the benchmark model such as the ratios of TL credits to assets, tax to profits, and financial expenditures to total credit. Finally, in columns 4, 5, and 6, the three models with industry dummies are re-estimated to control for industry-specific effects.

Firm size, which is a proxy for the cost of hedging, is an important determinant of hedging with a significance level of 1% for all specifications of the model. The literature reveals that large companies are more likely to use derivatives than small firms when fixed costs of hedging are important. Table 1 also shows that the users of derivatives are larger than non-users and the probit estimation provides evidence that the cost of hedging is an important determinant of hedging[13]. Leverage is expected to be statistically significant since it captures the cost of financial distress. Leverage is also significant with a negative sign for all specifications. The other two determinants of hedging are imports and FX credit. Importers and firms using FX credit are exposed to FX risk more than others. Thus, they are expected to use derivatives to hedge FX risk[14]. As expected, both variables are statistically significant with a positive sign for all specifications. Moreover, the marginal effect of FX credit is almost two times larger than the marginal effect of imports.

The final significant determinant of hedging is gross profit margin. The literature suggests that firms with higher profitability are expected to use fewer derivatives since profitability decreases the cost of financial distress. Gross profit margin is also significant for all specifications with the expected sign.

13 This result might reveal that big firms use derivatives more since they may have an institutionalized finance department.

14 This result might reveal that big firms use derivatives more since they may have an institutionalized finance department.

The model with a larger sample by excluding imports is re-estimated as a robustness check. The results are provided in Table 3. While the full sample has 9244 observations, the small sample has only 437 observations after the imports are excluded. Thus, the sample size increases 25 times. First, the significant variables in our benchmark model still remain significant in the full sample with and without industry dummies. The only difference is that the magnitudes of the significant variables decrease. Second, the additional control variables, the ratio of FX credit to TL credit and ROA are significant in the full sample while they do not have any explanatory power in the small sample. However, the ratio of exports to sales is significant in both samples. Likewise, the ratios of TL credit to assets and tax to profits are also significant in the full sample. The results indicate that determinants of hedging do not change and the estimations are robust in terms of sign and significance.

Table IV.2.2
Determinants of Hedging

	Probability of Using Hedge					
	(1)	(2)	(3)	(4)	(5)	(6)
Imports/Assets	0.205**	0.322***	0.197**	0.200**	0.303***	0.194**
	(0.085)	(0.081)	(0.085)	(0.086)	(0.082)	(0.086)
FX Credit/Assets	0.379***		0.518***	0.370***		0.507***
	(0.130)		(0.144)	(0.133)		(0.148)
LN(Assets)	0.126***	0.113***	0.144***	0.131***	0.120***	0.147***
	(0.026)	(0.025)	(0.027)	(0.027)	(0.026)	(0.028)
LN(Firm Age)	-0.057	-0.057	-0.057	-0.067	-0.067	-0.068
	(0.052)	(0.050)	(0.053)	(0.054)	(0.052)	(0.055)
Gross Profit Margin	-0.808***		-0.915***	-0.760**		-0.874***
	(0.293)		(0.292)	(0.306)		(0.304)
Leverage	-0.027***	-0.016*	-0.030***	-0.031***	-0.019*	-0.034***
	(0.010)	(0.010)	(0.011)	(0.011)	(0.010)	(0.012)
Liquidity	-0.018	-0.030	-0.020	-0.020	-0.032	-0.021
	(0.025)	(0.025)	(0.025)	(0.026)	(0.026)	(0.026)
Exports/Assets	0.125*		0.125	0.125		0.130
	(0.074)		(0.078)	(0.076)		(0.080)
ROA		0.074			0.102	
		(0.539)			(0.551)	
FX Credit/Total Credit		0.087			0.090	
		(0.087)			(0.089)	
Exports/Sales		0.199**			0.181*	
		(0.092)			(0.094)	
TL Credit/Assets			0.259			0.255
			(0.167)			(0.170)
Tax/Profits			0.474*			0.428
			(0.254)			(0.260)
Fin Exp/Total Credit			0.311			0.308
			(0.190)			(0.194)
Industry Dummies	No	No	No	Yes	Yes	Yes
Observations	437	437	436	431	431	430
Pseudo R-squared	0.13	0.10	0.14	0.13	0.10	0.14

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.10

In conclusion, firm size, leverage, imports, FX credit and gross profit margin appear to be significant determinants of hedging in Turkey. The results are consistent with the literature. For the sake of robustness, the benchmark model was re-estimated with alternative measures, additional control variables and a larger sample by excluding imports. These results show that the estimations are robust in terms of sign and significance.

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Tablo IV.2.3
Determinants of Hedging-Robustness Check

	Probability of Using Hedge					
	(1)	(2)	(3)	(4)	(5)	(6)
FX Credit/Assets	0.147***		0.156***	0.143***		0.148***
	(0.010)		(0.013)	(0.011)		(0.013)
LN(Assets)	0.035***	0.033***	0.042***	0.035***	0.033***	0.042***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
LN(Firm Age)	0.006	0.004	0.004	-0.000	-0.003	-0.001
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Gross Profit Margin	-0.084***		-0.082***	-0.052***		-0.057***
	(0.015)		(0.018)	(0.016)		(0.018)
Leverage	-0.004***	-0.002***	-0.005***	-0.003***	-0.002***	-0.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Liquidity	-0.001	-0.006***	-0.002	-0.002	-0.005***	-0.003
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Exports/Assets	0.072***		0.081***	0.056***		0.067***
	(0.007)		(0.008)	(0.007)		(0.008)
ROA		0.214***			0.204***	
		(0.039)			(0.038)	
FX Credit/Total Credit		0.064***			0.061***	
		(0.006)			(0.006)	
Exports/Sales		0.072***			0.053***	
		(0.008)			(0.008)	
TL Credit/Assets			0.049***			0.038***
			(0.012)			(0.012)
Tax/Profits			0.106***			0.084***
			(0.021)			(0.021)
Fin Exp/Total Credit			-0.008			-0.010
			(0.009)			(0.009)
Industry Dummies	No	No	No	Yes	Yes	Yes
Observations	9,231	9,233	8,471	9,110	9,112	8,363
Pseudo R-squared	0.20	0.17	0.21	0.21	0.20	0.22

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.10

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IV.3. Firm Deposits Over The Business Cycles: The Case of An Emerging Economy

Following the financial crisis of 2008 that erupted upon the default of Lehman Brothers and the years following this first shock, the global economy came to the brink of a collapse. What began in the US suddenly spread out all around the world. Monetary policy authorities responded to the crisis with an extremely loose monetary stance and the Fed, after hitting the zero lower bound of the policy rate, initiated three rounds of its extraordinary monetary policy strategy of quantitative easing (QE). Afterwards, the global economy was shaken by successive rounds of shocks arising from the European debt sustainability crisis, which caused the recovery to take a long time.

The notion of "the financial accelerator mechanism" named after Bernanke et al. (1996 and 1998) is an important theoretical tool to understand the dynamics inherent in the financial crisis. Bernanke et al. (1996) defines the "financial accelerator mechanism" as propagation and amplification of an initial monetary policy or productivity shock in such a way that the initial tiny impulse causes drastic economy-wide effects via credit markets developments. As a result of the initial macroeconomic shock, certain firms could not reach the required credit both due to a fall in their net worth and cash flows, and because banks hesitate extending further credit to them in a tight financial environment. Hence, firms contract their investment spending drastically during a downturn. With an increase in intensity of the initial shock and successive work of that mechanism, where in each turn, a greater portion of the economy is affected by tight financial conditions, the recession deepens and the economic activity spirals downwards.[15]

The financial accelerator mechanism has a differential effect on different economic agents. Compared to small firms, large firms that have access to alternative sources of finance other than bank lending are relatively less affected

15 Bernanke and Gertler (1989), and Gertler(1992) reaches a similar conclusion..

by a financial crisis. One recent phenomenon that has been discussed extensively in advanced economies is the improved cash position and increase in cash to total asset ratio of big companies in the US and Europe despite the prolonged financial crisis. Although they reached the required liquidity, firms hesitated to invest at that time, which we think is one of the main factors that caused the recession to last a long time. Besides long term factors like the taxation policy, the secular increase in R&D spending and agency problems; relatively cyclical factors like recently increased uncertainty due to the economic crisis are attributed to increased cash holding by companies in advanced economies (Sanchez and Yurdagul (2013), Bates et. al (2009)). During an upturn, while the contraction in credit supply and broken money multiplier decreases the amount of cash that firms hold in the form of deposits, the fact that firms diminish their investment spending with precautionary motives and instead accumulate liquidity against potential windfalls is expected to raise firm deposit growth.

In that regard, the study by Altunok, Aysan and Bulut (2014) investigates whether the same phenomenon occurs in an emerging economy such as Turkey. When the economy enters into a contractionary phase, two counteracting forces affect deposit growth in opposite directions. While on the one hand the banks' hesitation to extend further credit obstructs the healthy work of money creation process, which causes the commercial deposit growth to fall; on the other hand, due to increased uncertainty resulting from economic stress, firms abstain from investing and instead try to recover their liquidity position with precautionary motives, which has the potential to increase commercial deposit growth. The reason this study focuses on just commercial deposit growth instead of total deposits is the fact that firms' deposits play a more critical role in the financial acceleration mechanism over the business cycles.

The literature presents limited studies on the factors determining commercial deposit growth and how commercial deposits behave over the business cycles. The academic research on these issues that study Turkish data generally focus on the behavior of the monetary aggregates (M1 and

M2) instead of deposits themselves and have not reached consistent results (Alp et al. 2011). Alp et al. find that while Turkish Lira denominated deposits are procyclical, foreign currency denominated deposits are countercyclical. Mimir (2013) shows empirically that deposits are countercyclical over the business cycles in the US while analyzing general characteristics of US business cycles, although the theoretical model he proposes yields procyclical behavior in contrast. This study tries to fill the gap in the economic literature by investigating how commercial deposit growth behaves over the business cycles, which plays a major role in the dynamics of an economic crisis.

In this study, we use bank level panel data at monthly frequency that covers the period from January 2003 to August 2013. The data set includes income statements and balance sheets information from 37 banks obtained from the data base of the Central Bank of the Republic of Turkey (CBRT). Real GDP growth is used as an indicator of which phase of the business cycle the economy is going through. The GDP figures are released by the Turkish Statistical Institute (TUİK) on quarterly bases in Turkey. In order to obtain the data in a monthly basis, quarterly GDP figures were transformed via the method developed by Fernandez (1981) using the Industrial Production Index figures which are released monthly by the Turkish Statistical Institute (TÜİK). Inflation and Current Account Deficit/GDP are used as macroeconomic control variables, whereas the Herfindahl-Hirschman Index is added to regression equation to control for sector concentration of the banking industry. Table IV.3.1 provides the descriptive statistic for the variables used in the study. All the variables are winsorized at a 5 % level to remove the effect of outliers.

Table IV.3.1
Descriptive Statistics

Variable	mean	sd	min	p50	max
Firm Deposit GR	0.043	0.330	-0.950	0.006	7.150
Realgdp Growth	0.007	0.077	-0.210	0.016	0.190
Logage	5.486	1.227	0.000	5.617	7.493
Logassets	9.995	2.204	2.790	9.962	13.715
Return on Equity	0.059	0.088	-0.591	0.052	0.326
Liquid Assets/A	0.006	0.005	0.000	0.006	0.028
ΔCredit/A	0.008	0.021	-0.107	0.007	0.111
Debt-to-Banks/A	0.230	0.210	0.000	0.158	0.941
Herfindahl Index	10.263	0.357	9.629	10.257	11.507
Inflation	0.007	0.008	-0.014	0.006	0.033
Current Account/GDP	0.054	0.033	-0.029	0.057	0.147

The following dynamic panel data model has been estimated to analyze the behavior of the commercial deposits growth over the business cycles:

$$FirmDep\ Gr_{it} = \alpha_0 + \mu_i + FirmDep\ Gr_{it-1} + FirmDep\ Gr_{it-2} + \varphi\ GDP\ Gr_t + \sum_{k=1}^{11} \delta_k X_{k,i(t)} + \sum_{k} \beta_k Z_{k,(t)} + \sum_{n=1} \theta_n\ DM_n + \epsilon_{it}$$

FirmDep Gr_{it} stands for the dependent variable of the study, real growth rate of commercial deposits. In line with the common practice in such dynamic panel models, thinking that the commercial deposit growth has a certain momentum, we add lagged values of the dependent variable to the right hand side of the model. While GDP Gr_t stands for real GDP growth rate, which is the focus variable of the study, $X_{k,i(t)}$ is used to control for the bank specific fixed effects that may affect commercial deposit growth. Lastly, $Z_{k,(t)}$ represents macroeconomic control variables, whereas DM_n are month dummies to isolate seasonal effects.

To estimate this model, the dynamic panel data method "System GMM" approach is utilized, which was developed by Arellano and Bover (1995) and Blundell and Bond (1998). When such dynamic models are estimated by OLS methods, the estimators happened to be inconsistent. In addition, static panel data methods such as first differencing or fixed effect estimation are not able to remove the serial correlation, heteroskedasticity and endogeneity problems inherent in the data. Hence, similar to this study , instrumental variable methods are needed. Besides estimation results with "System GMM", we also provide estimation results obtained using "Difference GMM" approach as a robustness check.

The estimation results that are obtained using the "System GMM" estimation are provided in Table IV.3.2. Parallel to the common practice in literature and as a result of test we conducted, the first two lags of the dependent variable, commercial deposit growth are included as additional regressors in the econometric model. When we use more than two lags, the remaining lags are found to be insignificant. We think this is because, on average, the maturity of deposits in Turkey is close to two months.

In the first column, only real GDP growth and lagged values of the dependent variable are used as regressors of the model. Later, in other columns, bank specific and macroeconomic control variables are added to the model as additional regressors. For the model in the last column ΔCredit/Assets and Debt to Other Banks/Assets are endogenized. According to regression results, the focus variable of the study, real GDP growth was found to be statistically significant and displayed a negative sign in all of the model specifications. This result is inferred as commercial deposits growth behaves countercyclically over the business cycles. Even if the broken money multiplier process and fall in cash flows to corporations are expected to decrease firms' deposit growth, the estimation results reveal that in an economic downturn the rise in commercial deposit growth due to contraction in investment, and increased precautionary saving to make-up for the liquidity position and balance sheet is more dominant. On the other hand, when the economic activity is in an expansionary phase, firms are in quest of funds to invest and as a result they will firstly deplete their own resources before applying any outside funds.

Table IV.3.2

Commercial Deposit Growth and Business Cycles (System GMM)

	Expected	Firm Deposit Growth					
Variable	Sign	(1)	(2)	(3)	(4)	(5)	(6)
Lag Variables							
L1 Firm Deposit Gr	(-)	-0.242***	-0.257***	-0.260***	-0.260***	-0.259***	-0.261***
		(0.032)	(0.033)	(0.034)	(0.034)	(0.034)	(0.034)
L2 Firm Deposit Gr	(-)	-0.151***	-0.156***	-0.160***	-0.159***	-0.159***	-0.162***
		(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.006)
Growth							
Realgdp Gr	(?)	-0.163***	-0.136***	-0.120**	-0.098**	-0.098**	-0.115**
		(0.057)	(0.050)	(0.049)	(0.047)	(0.048)	(0.050)
Trend		-0.001**	-0.004***	-0.005***	-0.005***	-0.005***	-0.003***
		(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Bank Specific Variables							
Logage	(+)		0.035	0.058	0.057	0.057	0.038
			(0.032)	(0.037)	(0.037)	(0.037)	(0.026)
Logassets	(+)		0.428***	0.413***	0.418***	0.418***	0.250***
			(0.111)	(0.114)	(0.114)	(0.114)	(0.072)
Return on Equity	(?)		0.011	-0.022	-0.046	-0.044	-0.091
			(0.229)	(0.222)	(0.218)	(0.236)	(0.171)
Liquid Assets/A	(-)		-0.054	1.721	1.783	1.884	-0.062
			(4.531)	(4.629)	(4.638)	(4.562)	(3.580)
ΔCredit/A	(+)		1.268***	1.289***	1.300***	1.293***	1.248***
			(0.392)	(0.389)	(0.391)	(0.353)	(0.337)
Debt-to-Banks/A	(-)		-0.765***	-0.822***	-0.822***	-0.824***	-0.568***
			(0.228)	(0.249)	(0.247)	(0.246)	(0.190)
Macro Variables							
Herfindahl Index	(-)			-6.234*	-6.938*	-6.926*	-6.806**
				(3.720)	(3.702)	(3.675)	(2.779)
Inflation	(-)				-2.443***	-2.448***	-2.316***
					(0.876)	(0.891)	(0.870)
Current Account/GDP	(?)					0.027	0.046
						(0.328)	(0.251)
Constant		-0.671	-3.350***	-2.642***	-2.554***	-2.553***	-1.518**
		(0.828)	(0.922)	(0.836)	(0.813)	(0.813)	(0.726)
Observations		3,878	3,878	3,878	3,878	3,878	3,878
Number of Banks		37	37	37	37	37	37

In regard to the remaining control variables, estimation results are in line with existing literature. While the inflation that we used as a proxy for the level of overall macroeconomic uncertainty was found to affect commercial deposit growth negatively as expected, the Current Account Deficit/GDP ratio that is used to grasp the effect of the international flows was found to be insignificant despite it displaying the expected sign. The rise in the sector concentration in the banking industry that is measured by the Herfindahl-Hirschman Index revealed to decrease commercial deposit growth. In other words, increased competition in the banking industry raises commercial deposit growth. Among bank specific variables, natural logarithm of total assets, ΔCredit/Assets ratio and Debt-to Other Banks were found to be statistically significant. Fast credit growth seems to increase the need for funds, which in turn raises commercial deposit growth, whereas the availability of funds from other banks, especially foreign ones, affects it in the opposite direction. On the other hand, the natural log of a bank's age, return on equity and liquid assets/total assets were found to be statistically insignificant. An estimation of the same models with the "Difference GMM" method instead of the "System GMM", shows that the Herfindahl-Hirschman Index this time became insignificant while the remaining results of the model did not display a significant change. Hence, our results are robust to alternative estimation methods.

As a result, this study shows that the commercial deposits behave countercyclically over the business cycles in Turkey, analyzing bank level panel data with "system GMM" methodology as the estimation strategy. Among control variables, inflation, the Herfindahl-Hirschman Index, ln (assets), ΔCredit/Assets and Debt to Other Banks/Assets were found to be statistically significant and displayed the expected sign.

Following the global financial crisis, banks and firms in advanced economies hold a huge amount of their resources in terms of either idle cash which has zero return or assets with very low levels of return, such as commercial deposits. This study lays down that the same phenomenon also occurs in an emerging economy like Turkey. Firms during economic stress times abstain from making investment and instead, due to precautionary

motives, hold their resources in relatively more liquid forms.

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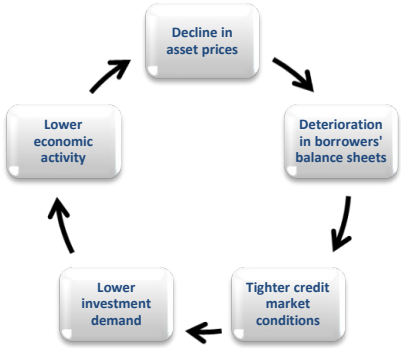
IV.4. Macroprudential Policies and Smoothing Business Cycles: Evidence from Firm-Level Data for Turkey

The recent global financial crisis has paved the way to a burgeoning literature on the interaction between financial intermediation and the real economy. Following seminal papers by Stiglitz and Weiss (1981), Bernanke and Gertler (1989), and Bernanke, Gertler and Gilchrist (1999), the following literature has highlighted the importance of financial constraints that the firms face in obtaining external funds to explainthe business cycles (Christiano, Motto and Rostagno, 2010; Gilchrist and Zakrajsek, 2011). In these types of commonly used models, financial constraints that the firms face are modeled to be an increasing function of the vulnerability of firms' balance sheets. For instance, in response to a rise in firms' leverage, it has become harder to finance capital expenditures, leading to an equilibrium rise in credit spreads. A higher spread in turn reduces investment demand and asset prices, resulting in a further increase in the vulnerability of firms' balance sheets (Chart IV.4.1).

Chart IV.4.1
A Generic Financial Amplification Mechanism



Although such an amplification mechanism has captured much attention in the literature, most of the literature assumes away possible time-variation in the strength of the amplification, where the strength of the this financial amplification cycle can be traced with the sensitivity of the external financing premium (EFP) that the firms face to the firms' leverage. For instance, an increase in the sensitivity can potentially raise the effect of an unfavorable shock on credit market conditions and the business cycles in general. Among the few, Dib (2010) allows for time-variation in the sensitivity, calibrating the disturbances to the sensitivity to match the observed volatility in credit spreads. Gertler and Zakrajsek (2011) use corporate bond yields to extract the strength of the cycle (or the efficiency of financial intermediation, as they call it). Christiano et al. (2014) emphasize uncertainty shocks as a potential determinant of the variation in the strength of amplification. Last, Fendoglu (2014) studies by how much policy makers should reduce the strength of amplification to maximize aggregate welfare. In sum, the

Chart IV.4.2
The Strength of Financial Amplification

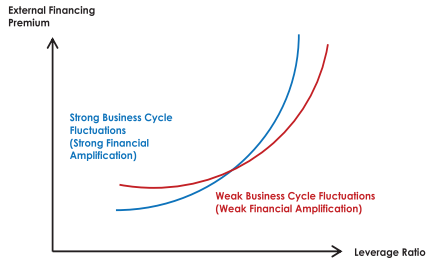
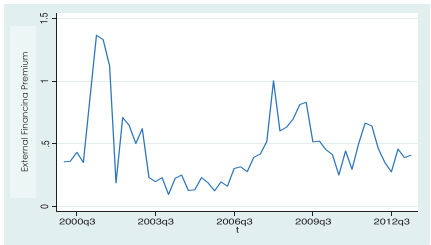


Chart IV.4.3
External Financing Premium for 2000-2013



Source: Authors' calculations, BIST.

related literature underlines the importance of allowing for time-variation in the strength of financial amplification for welfare considerations and to explain the business cycles (Chart IV.4.2).

In this short note --which summarizes Altunok and Fendoğlu (2014)-- we first estimate the strength of financial amplification using firm-level Turkish data, and then assess the effectiveness of the recent macroprudential framework in reducing, if not increasing, the strength of financial amplification. We use about 200 publicly-traded non-financial firm balance sheets and income data (which are covered at the BIST) for the period 2000Q1-2013Q2. We proxy the EFP as the ratio of financial expenses to the sum of pre-tax profit and financial expenses (hence capturing the interest rate burden for the firms) (Chart IV.4.3).

Chart IV.4.3 shows a priori evidence that the EFP rises substantially during economic downturns. To this end, we study the sensitivity of EFP to firms' leverage (henceforth the strength of amplification) and evaluate the effect of the recent macroprudential framework on the sensitivity. Then, we estimate the following fixed-effects panel regression using system-GMM:

$$\Delta EFP_{i,t} = \beta_0\, \Delta Leverage_{i,t} + \beta_1\, D_{MacroPrud} * \Delta Leverage_{i,t} + \beta_2\, D_{MacroPrud} + {}_k\beta_k\, X_{i,t} + \rho\, \Delta EFP_{i,t-1} + \gamma_i + \varepsilon_{i,t};$$

where ΔEFP_i denotes the change in the EFP for firm i, $\Delta Leverage_i$ denotes the change in firm i's leverage ratio, and X_i the firm-specific control variables. We use total assets and age (in natural logs), the ratio of fixed assets to total assets, stocks to total assets, and change in sales, as control variables. $D_{MacroPrud}$ is a dummy variable taking a value 1 after 2010Q4 (the period at which Turkey started implementing the macroprudential framework), and 0 for other periods.

In line with the existing literature, we find a positive relation between the leverage and the EFP for the firm-level data. A rise in the leverage is indeed perceived to be an indicator of higher balance sheet vulnerability. This result is robust, including other important control variables. Secondly, and more central to our discussion, the sensitivity of leverage to the EFP is not time invariant. The sensitivity is lower after the implementation of macroprudential policies. In other words, a unit change in the vulnerability of firms' balance sheets (i.e. the leverage ratio) affects the EFP in a limited fashion during the new framework (<0 and statistically significant). This result holds for other specifications as well (Table 1, columns 3-6). Also, the results are robust using difference GMM, introducing sector-specific fixed effects, non-dynamic estimation methods and using random effects.

Furthermore, we also find that during recessions (which we simply capture by a dummy variable that takes a value 1 for 2001Q1-2001Q4 and 2008Q1-2009Q4) the strength of amplification rises significantly.

Table IV.4.1

Strength of Financial Amplification and the Macroprudential Framework

Dependent Variable	External Financing Premium					
Independent Variables	(1)	(2)	(3)	(4)	(5)	(6)
External Financing Premium, previous period	0.159***	0.158***	0.140***	0.140***	0.147***	0.150***
	(0.022)	(0.022)	(0.023)	(0.023)	(0.023)	(0.024)
Leverage Ratio	2.735***	2.849***	2.599***	2.498***	2.404***	2.429***
	(0.334)	(0.341)	(0.336)	(0.351)	(0.320)	(0.327)
$D_{MacroPrud}$		0.213**	0.219***	0.197**	0.172**	0.187**
		(0.083)	(0.082)	(0.084)	(0.087)	(0.089)
$D_{MacroPrud}$ * Leverage Ratio		-0.862***	-0.700**	-0.673**	-0.661**	-0.704**
		(0.289)	(0.287)	(0.292)	(0.297)	(0.302)
Ln(Assets)			0.173**	0.184**	0.256**	0.307***
			(0.084)	(0.085)	(0.101)	(0.115)
Ln(Age)			-1.884***	-1.896***	-2.107***	-2.065***
			(0.395)	(0.392)	(0.378)	(0.382)
Liquidity Ratio (Cash/Total Assets)				0.008	0.004	0.002
				(0.020)	(0.020)	(0.022)
Fixed Assets				-0.681**	-0.702**	-0.681**
				(0.310)	(0.316)	(0.334)
Sales Growth (previous period, adjusted)					-0.061	-0.090
					(0.216)	(0.224)
Growth in Stocks						-0.060
						(0.058)
Firm Fixed Effect	yes	yes	yes	yes	yes	yes
Observations	10,987	10,987	10,987	10,987	9,826	9,599

To conclude, in response to large scale quantitative easing policies in advanced economies and excessively volatile cross-border capital flows, many emerging countries, including Turkey, have implemented measures to support financial stability. Turkey has devised a new policy mix that incorporates financial stability as a complementary policy objective. In this note, we find using firm-level data is effective in the new policy framework to reduce the strength of financial amplification for Turkey.

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IV.5. Derivative Usage of Real Sector Firms in Turkey and Financial Risk Management

Due to the extensive amounts of foreign exchange debt and the large open FX position of Turkish real sector firms, monitoring the financial risks possesses a great importance for overall financial stability. In this sense, one critical issue which should be paid attention to is the derivative transactions of firms. Nevertheless, the derivative operations of firms in Turkey did not get its deserved attention in current studies and the number of academic works related with this issue is very limited. One of the principal reasons behind the ignorance of this important concept by the literature is stringent accessibility to the available data about derivative usage. In the meantime, a wide literature on this issue has already accumulated in several countries where derivatives are an important part of the financial markets. The existing literature in those countries mainly focuses on the determinants of derivative usage by firms (Howton and Perfect, 1998; Jalilvand, 2009 and Coutinho, Sheng and Lora, 2012).

This special topic summarizes the analyses of Alper et al. (2014) which deal with the transactions of firms in the financial derivatives market. This study provides a descriptive analysis on the insights of firms' derivative transactions utilizing an extensive distinguishing dataset. This study also presents the motivations of firms to use derivative instruments and examine whether they are able to hedge their FX risk.

Operations of Firms in Derivative Markets

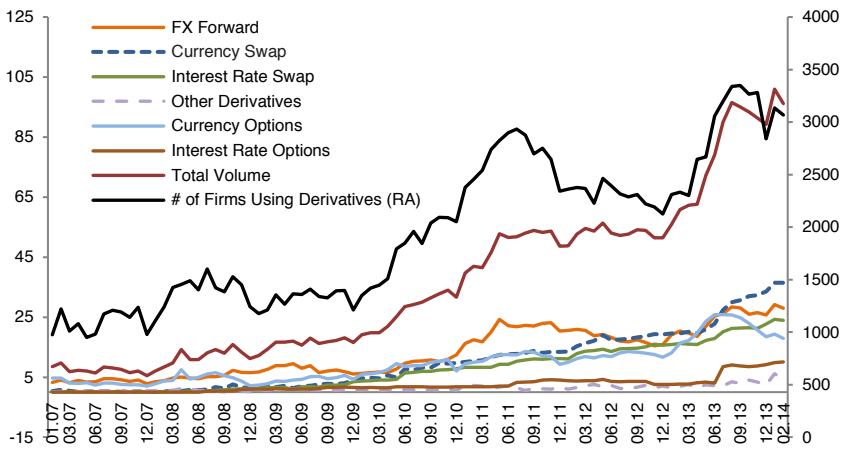
The information provided by this study is based on the CBRT database which contains nearly 3 million transactions made by firms operating with the Turkish banking sector in Turkey. While some multinational companies doing business in Turkey conduct derivative operations with banks outside of Turkey[16], the number of these companies is very limited. Hence,

16 In a conversation with a multinational firm operating in Turkey, the firm executive stated that they did not just consider the net position of their branch in Turkey but the overall position of whole company in conducting derivative transactions.

the dataset represents the entire derivative transactions of firms operating in Turkey.

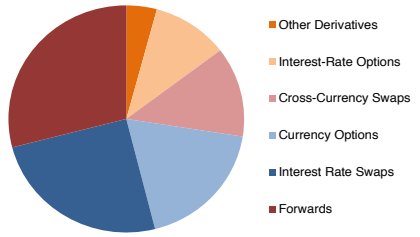
Chart IV.5.1 clearly shows that the volume of derivative transactions by firms and number of firms engaging in these transactions have substantially increased since 2007. The Figure also shows that firms utilize various types of derivative instruments. The total volume of derivative operations reached 96.2 billion TL and currency derivatives constituted approximately 60 percent of this volume. Forwards comprise half of the entire volume among the currency derivatives. Interest-rate derivatives form 35 percent of the derivatives market and interest rate swaps possesses the highest share. When currency and interest-rate derivatives are considered together, the shares of swap, option and forward transactions are 37.7, 29.1 and 29, respectively. In addition to these derivative instruments, firms rarely use derivatives based on equity or commodity transactions and the volume of these transactions is very small (Chart IV.5.2 and Table IV.5.1).

Chart IV.5.1.
Volume of Firms' Derivative Transactions, Billion TL



Source: BRSA-CBRT

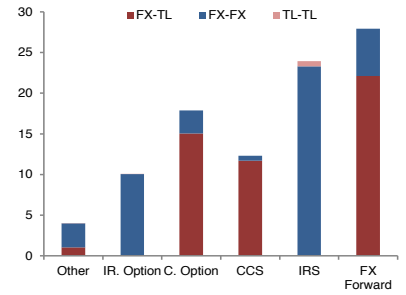
Chart IV.5.2
Firms' Derivative Transactions, by Type, as of February 2014



Source: BRSA-CBRT

An investigation of derivatives by their currency denominations reveals that FX-FX derivatives, which require FX payment in exchange for another FX currency, form 47 percent and FX-TL derivatives, which require TL buy/sell in exchange for FX sell / buy, form 52 percent of the total volume of derivatives. The remaining 1 percent is TL-TL transactions and these are mostly interest rate swaps. In relation to the currency derivatives, FX-TL instruments possess the 95, 84 and 79 percent of swap, currency options and forward transactions, respectively (Chart IV.5.3).

Chart IV.5.3
Firms' Derivative Transactions, by Currency, as of February 2014



Source: BRSA-CBRT

Table IV.5.1.
Firms' Derivative Transactions, as of February 2014

Derivative Transactions, by Type	Million TL	Percentage
FX Forward	27,926	29
Interest Rate Swap	23,950	24.9
Cross Currency Swap	12,316	12.8
Currency Options (Seller)	12,785	13.3
Currency Options (Buyer)	5,089	5.3
Interest Rate Options (Seller)	3,623	3.8
Interest Rate Options (Buyer)	6,475	6.7
Other Derivatives	4,021	4.2
Total Volume	**96,186**	**100**

Source: BRSA-CBRT

Why Do Firms Use Derivative Contracts?

The CBRT database on derivative instruments provides useful information about the firms engaging in these transactions. Nevertheless, determining the objectives of the firms in using derivative instruments requires extra knowledge about the balance sheets of firms. This part first examines the expectations on the objectives of firms in using each instrument. Later, each expectation will be tested and its validity will be confirmed analyzing the CBRT sector balance sheets database. The CBRT dataset on firm balance sheets contains 9469 firms; these firms constitute almost half of the net sales of the entire sector. Hence, this dataset is sufficient to represent all real

sector firms in Turkey[17]. The firms in this dataset were matched with the firms in the derivatives dataset, and the unmatched firms are assumed to be inactive in derivative markets. The derivative transactions volume of matched firms is calculated as 23.1 billion TL (Table IV.5.2).

Table IV.5.2.
Derivative Transactions of Firms Analyzed and Exporters, as of February 2014,Billion TL

	All Firms	Exporters
FX Long Position	8.8	8.1
FX Short Position	15.1	13.5
FX Net Position	-6.3	-5.4
Total Outstanding	**23.1**	**21.6**

The initial expectation is that the firms using currency derivatives do not to hedge their FX debts. Firms hold FX credits due to their cheaper interest margins, but hedging these credits brings extra costs for firms. Thus, the cost advantage of FX credits against TL credits disappears. Otherwise, there will be an arbitrage opportunity in favor of FX credits. FX credits of firms generally have very long maturities; however, the maturity of derivative transactions is realized in less than 12 months. This maturity mismatch indicates that firms do not hedge their FX debt with derivatives, since using short term contracts for long-term debts is not an appropriate hedging activity. This prediction might be justified via an analysis whose results are depicted in Tables IV.5.3 and IV.5.4. In the former Table, the firms are divided into 10 percent quantiles according to their ratio of FX debt / Net Sales. While the first quantile represents the firms having this ratio less than 0.1, the last quantile represents firms having the same ratio greater than 1. Since large numbers of firms accumulated in the first 10 percent, this quantile is further divided into 2 percent quantiles in Table IV.5.3.

It is explicit from both tables that as the FX debt share increases, there is no increase in the number of firms using derivatives. On the contrary, the share of firms using derivatives is larger in the groups having lowest FX debt / Net Sales ratio. Furthermore, as the last columns suggest, the net positions

Table IV.5.3.
FX Debt and Derivative Usage of Firms

FX Debt / Net Sales (%)	# of Firms	# of Firms Using Derivatives	Share of Firms Using Derivatives (%)	Net Derivative Position / FX Debt (%)
0-10	2157	332	15.39	0.00
11-20	85	10	11.76	0.00
21-30	49	4	8.16	0.00
31-40	15	3	20.00	0.00
41-100	33	3	9.00	0.00
>100	65	4	6.15	0.00

Table IV.5.4
FX Debt and Derivative Usage of Firms

FX Debt / Net Sales (%)	# of Firms	# of Firms Using Derivatives	Share of Firms Using Derivatives (%)	Net Derivative Position / FX Debt (%)
0-2	1498	228	15.22	0.00
2-4	339	70	20.65	0.00
4-6	154	20	12.99	0.00
6-8	98	6	6.12	0.00
8-10	68	0	0.00	0.00

17 The net sales of the firms in the dataset amounted to 1025 billion TL in 2013 and this corresponds to the 65 percent of Turkey's annual GDP. Additionally, these firms have 1012 billion TL worth of asset size and 197 billion TL worth of exports

taken by derivatives cover almost zero percent of their FX debt burden, which is more evidence that firms do not hedge their FX debt via derivatives.

By forward and option transactions, firms are expected to take an FX long position for their payments resulting from imports and an FX short position for their export receivables to guard against FX volatility risk. In addition to exporters, the Turkish firms having operations abroad and extra ordinary FX cash inflows[18] are expected to take a short position in derivative transactions for exchanging these FX revenues to TL. FX-FX forward and currency option transactions are expected to be conducted generally by firms whose import currency denomination is different from the exports and firms having a large foreign trade volume.

Consistent with these expectations, the analysis using the firms' balance sheet items reveals that firms basically use forwards and options to hedge FX-denominated import, export or extraordinary cash flows. As illustrated in Table IV.5.2, firms were in a net FX short position in derivative transactions as of February 2014. An examination of firms in a net short position shows that 325 out of 399 firms are exporters and 5.4 billion out of 6.3 billion TL worth of net total short position belongs to exporting firms. This is strong evidence that exporting firms hedge FX risk emanating from their FX export receivables. The fact that a large portion of net short position in real sector derivative transactions is made by the exporters indicates that a net short position in derivative operations is not a source of risk; on the contrary, a protection against FX risks.

Table IV.5.5 divides exporting firms into ten percent quantiles by their export / net sales ratio. The other columns indicate the number of firms in each quantile, the share of firms that are with net short position in derivative transactions, and the share of the net short position to total position taken (short plus long). The table depicts that as the export shares rise,

18 In order to test the validity of this argument, a large firm was interviewed about their high volume of net short position made mainly by currency options. The firm stated that they used these swap contracts in order to exchange their FX cash flows resulting from the sale of a subsidiary to TL.

both the number of firms with net short position and the share of the net short position increase. In other words, the behavior of taking the net short position tends to intensify as firms export more. This supports the expectation that firms a taking short position in option and forwards aim to hedge the FX risks on their export earnings.

Table IV.5.5.
Distribution of Net Position of Exporters

Exports / FX Debt (%)	# of Firms	# of Firms Having FX Short Position/ # of Firms Having FX Position (%)	FX Short Position/ Total FX Position (%)
0-10	1965	57.14	50.73
11-20	563	70	68.06
21-30	337	64.86	71.01
31-40	306	73.53	85.44
41-50	269	88.89	79
51-60	166	75.76	91.67
61-70	174	95	83.33
71-80	158	95,24	99.69
81-90	194	86.21	71.43
91-100	349	97.5	96.15

The FX-FX currency options and forwards display their volume as 7.1 billion dollars as of February 2014. In these FX-FX contracts, 90 percent of firms took a short position in Euro and a long position in Dollars. In the Turkish economy, nearly 70 percent of imports are made in USD, and 50 percent of export revenues are in Euro. Hence, firms having USD denominated costs and Euro incomes engage in these types of FX-FX contracts to hedge against FX risks. Furthermore, the currency swap transactions which significantly rose after the second half of 2013 are not used for speculative or hedging purposes (Chart IV.5.1). This rise mainly stemmed from the disclosure by firms of TL deposits as currency swaps due to some arrangements and arbitrage opportunities provided by banks (Box II.1.1). The net FX position of firms did not change in these transactions and the shifts in balance-sheet items equalized the TL deposit position before the transaction.

Besides currency swaps, interest rate swaps have recently been a prevailing derivative instrument whose volume reached 23.5 billion TL. The firms are expected to use this instrument to exchange their floating rate debts with fixed rate debts to guard against interest rate risk. The FX credits of Turkish firms mostly have long maturities and floating interest rate costs. Hence it should also be expected that firms using these instruments have large FX credits; the maturity of these swap contracts are very long. The currency swaps used by Turkish firms have very long maturities. Interest rate options are used for similar objectives like swaps and these interest rate options possess long maturities as well. Table IV.5.6 presents a comparison of the structure and some features of FX debts held by the firms using currency swaps with all firms in the dataset. Consistent with the previous expectations, interest rate swap users have much larger FX debt than the sample average. Furthermore, the share of the long maturity FX loans of swap users in total FX debt is much higher than the average of all firms. Hence, this also proves that firms revert to interest rate swap and option contracts to hedge their long maturity FX debts against interest and currency risks.

Table IV.5.6.
Volume of Interest Rate Swaps and FX Debt Structure of Firms

	Firms Having IRS	All Firms
# of Firms	47	9469
Total FX Debt / Total Assets	44%	18%
Long Term FX Debt / Total FX Debt	67%	54%
Average Amount of FX Debt	229.8 Million TL	18 Million TL
Average Amount of Short Term FX Debt	23.4 Million TL	3.7 Million TL
Average Amount of Medium Term FX Debt	51.0 Million TL	4.8 Million TL
Average Amount of Long Term FX Debt	155.3 Million TL	10.2 Million TL

Moreover, firms may take extra risks with derivatives by using them for speculative purposes. If the speculative use of these instruments is widespread, this would mean that the overall fragility of firms is higher than that implied by on-balance-sheet risks. In this sense, the prevalence of speculative motives in using derivatives should be investigated. Among all derivatives, currency options are considered to be the most speculative instrument which could gain very high profits but could also cause limitless losses. Currency options can be highly leveraged by taking a huge FX short position. In the dataset, distinguishing between speculative and protective use of options is very hard. However, the prior analyses on forwards and options indicate that the short position in derivatives is significantly related to

export earnings. Additionally, some non-exporting firms using options declared in an interview that they used options to hedge their out-of-ordinary FX cash flows against FX risks. In that vein, it would be wrong to assume that the net FX derivative short position of non-exporting firms stems from the speculative use of options.

In the last part of the study, a scenario analysis that measures the durability of firms against FX risks is made by considering both on and off balance sheet positions.

Kur Riski Analizi

An indicator "FX Risk" is created to measure the durability against FX risk. This indicator is calculated as the proportion of the amount exposed to depreciation in TL to the firm profits. Since the data set does not contain the import values, imports are proxied by the imports/GDP ratio. The formula for the FX risk indicator is as follows:

$$\text{FX Risk}^{19} = \left(\frac{\text{FX Debt} - \text{Exports} + \text{Net Sales} * 0.32}{\text{Profits}} \right) \times 0.25$$

This risk indicator basically measures the cost of the rising burden of the FX debt net of export earnings in proportion to the profits of firms after 25 percent depreciation[20] Hence, the small indicator values represent the less risky firms; the firms with higher values are riskier.

In Tables IV.5.7 and IV.5.8, firms are divided into quantiles according to the estimates FX risk indicator. For instance, the first row represents firms whose FX risk is between 0 and 0.1 and the second row indicates between 0.1 and 0.2. The last

19 0.32 represents the annual imports / GDP ratio in the first quarter of 2014 in Turkey. Since data of import spending is not available in firm balance sheets, import variable is proxied via net sales times 0.32.

20 A similar risk analysis is conducted in 2014-II Inflation Report. In that analysis, exchange rate risk is calculated as the FX debt / Export ratio and firms are classified as high, medium and low risky firms according to values taken by this ratio..

row indicates negative FX risk. The last column represents the proportion of net derivative position of firms to total FX debt in each quantile. This ratio is calculated taking the weighted average of each firm's ratio by their asset size. This display exhibits what portion of FX debts of firms is hedged due to net position taken via derivatives. In the first quantile, the share of firms using derivatives is 6.8 percent, in the second quantile the share is 3.1 percent and in others it is 5 percent on average. Since there are many firms in the first group, this group is divided into 2 percent quantiles in Table IV.5.8. In these 2 percent quantiles, the share of derivative users is around 5-7 percent. This indicates that a very limited number of firms use derivatives and the volume does not increase as the prospective loss increases. Moreover, the net position / FX debt ratios are almost zero in all firms, which indicates that firms do not hedge their FX debts via derivatives.

Another crucial result from this analysis is that after 25 percent depreciation in TL, a majority of firms will lose at most 10 percent of their profits. The Tables demonstrate that 5729 firms will lose at most 10 percent of their profits, and 3338 firms will lose at most 2 percent. Therefore, the balance sheets and profit levels of firms indicate resilience against FX shocks.

Table IV.5.7.
FX Risk and Derivative Usage of Firms

FX Risk	# of Firms	# of Firms Using Derivatives	Share of Firms Using Derivatives (%)	Net Derivative Position / FX Debt (%)
0-10	5729	394	6.88	0
11-20	446	14	3.14	0
21-30	154	8	5.19	0
31-40	67	6	8.96	0
41-100	112	4	3.57	0
Negative	2743	158	5.76	0.01

Table IV.5.8.
FX Risk and Derivative Usage of Firms

FX Risk	# of Firms	# of Firms Using Derivatives	Share of Firms Using Derivatives (%)	Net Derivative Position / FX Debt (%)
0-2	3338	209	6.26	0.00
2-4	1178	85	7.22	0.00
4-6	578	30	5.19	0.00
6-8	318	17	5.35	0.00
8-10	213	4	1.88	0.00

The derivative usage by real sector firms in Turkey has been steadily increasing and these derivative transactions are made to hedge against different kinds of financial risks. The important question discussed in this study is how the FX open positions of firms, measured by on-balance-sheet items, can be analyzed with off-balance-sheet transactions. The analyses in this study imply that off-balance-sheet short positions are mainly related to the on-balance-sheet FX positions or FX cash flows. Accordingly, being in a net short position in derivative transactions should not be regarded as a negative factor for balance sheet fragilities for firms. Conversely, firms are in net long position in derivative operations since these net derivative short non-exporting positions are made mostly by exporting firms. This net position is most likely made to hedge against the FX import payments or short-term FX debts rather than medium or long-term FX credits. In this sense, claiming that firms' derivative transactions have favorable impacts on on-balance-sheet FX open positions would not be a wrong assumption.

Finally, the scenario analysis results suggest that, considering the exports, imports, FX debts, derivative transactions together, the profit levels of firms are able to tolerate the possible losses due to a prospective 25 percent TL depreciation. There are few firms that could lose more than 50 percent of their profits after a possible depreciation.

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IV.6. Global Financial Reform Developments

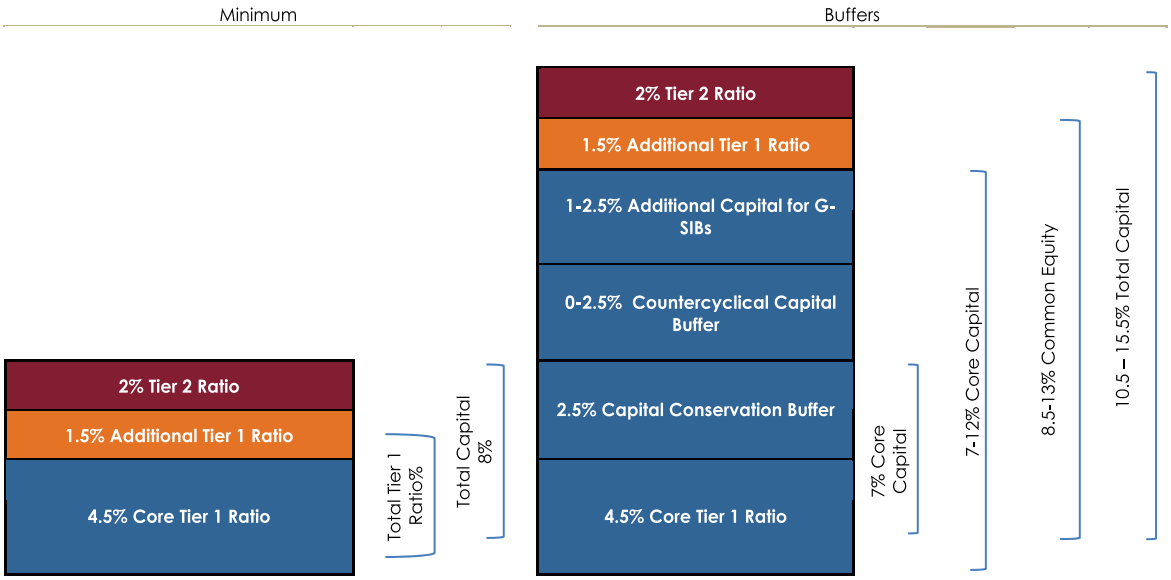
After the global financial crisis, with the aim of decreasing vulnerabilities to shocks in the financial system, a reform agenda was formed at the 2009 G20 Pittsburgh Summit. In this regard, the Financial Stability Board (FSB), the Basel Committee on Banking Supervision (BCBS), the International Association of Insurance Supervisors (IAIS) and the International Organization of Securities Commission (IOSCO) are making regulations to increase the resiliency of the banking sector, to take actions against risks from shadow banking and too big to fail institutions and to improve over-the-counter (OTC) derivatives markets. Global financial reforms are planned to be completed until the Brisbane Summit which will be headed by Australia.

Basel III Regulations

Making the banking sector more resilient is the key target of the Basel III regulations. The BCBS issued regulations on the capital adequacy ratio in 2010, December. The capital adequacy regulations aim to strengthen the quantity and quality of capital. Within this framework, the minimum core tier 1[21] ratio having the highest loss absorbing capacity and total tier 1 ratio were assigned 4.5% and 6%, respectively. The total minimum capital adequacy ratio was unchanged with 8%. Moreover, the capital conservation buffer was introduced at 2.5% that adds extra capital composed of common equity tier 1 (CET1). In addition, the countercyclical capital buffer that varies between 0% and 2.5% was created (Table IV.6.1). This buffer ensures that banking sector capital requirements take account of the rapid credit boom and prevent it from being a risk factor. All of these regulations gradually have entered into force since 2013.

21 Core Tier 1 consists of paid-in capital, share premium, profits on cancellation of common stocks, reserves, recognized in equity earnings, net profit and retained earnings, provisions for estimated risks, affiliates, bonus shares acquired from subsidiaries and jointly controlled entities.

Table IV.6.1. Basel III Minimum Capital Adequacy Ratios and Buffers (Percentage of Risk Weighted Assets)



The leverage ratio, another issue examined within the context of Basel III was published in 2014, January. This ratio will limit the indebtedness of the banks and support the risk-based capital adequacy ratio. The leverage ratio is calculated by dividing common equity into the balance sheet and off balance sheet items without any risk weight applicable and is estimated to be minimum 3%. It is expected to become effective in 2018.

The BCBS has conducted Regulatory Consistency Assessment Program (RCAP) studies to assess the level of compliance with these regulations. The review has been completed for six countries so far. Our country's RCAP report is expected to be released in March 2016. Capital adequacy regulations operate in all member states, although studies on liquidity and leverage ratios continue.

In our country, the final version of capital, leverage and liquidity coverage ratio regulations has been published. Regulations of Leverage and the liquidity adequacy will be applied in 2015.

Ending Too Big To Fail

The institutions which are too big to fail are important for global financial stability because of their complex structures and interconnectedness with other financial institutions. For this reason, the resolvability of global systemically important financial institutions (G-SIFI) without affecting the financial system and without support of tax-payers is gaining importance. Therefore, as an initial step, methodologies to identify global systemically important banks (G-SIB), domestic systemically important banks (D-SIB) and global systemically important insurers (G-SII) are published. On the other hand, work on the methodology to identify systemically important non-bank non-insurer (NBNI) global systemically important financial institutions is going on.

According to the framework that was first published in 2011 and then updated in 2013 by the BCBS, global systemically important banks are assessed based on twelve indicators which are defined under size, cross-jurisdictional activity, interconnectedness, substitutability and complexity categories. The list of global systemically important banks are updated and published in November each year. There are 29 G-SIBs on the list which was announced on November 2013. The additional loss absorbency requirement changing between 0-2.5 % will be phased-in between 1 January 2016 and year end 2018, becoming fully effective on 1 January 2019 for these banks. Moreover, the BCBS published a framework for dealing with domestic systemically important banks on October of 2012 as guidance for authorities. This methodology overlaps with G-SIB methodology to a great extent except that, cross-jurisdictional activity is not within the indicators. In addition, 9 global systemically important insurers have been identified according to the G-SII framework introduced by IAIS. The work on the assessment of systemic importance of reassurance companies is ongoing. An international capital requirement standard for insurance companies does not exist. Therefore, IAIS is working to develop a basic capital requirement which will be finalized at the end of 2014. This ratio will be used as an additional loss absorbency requirement for systemically important insurers. IAIS is also working on a risk-based and more comprehensive

capital adequacy standard which will replace the basic capital requirement which is expected to be completed by 2015.

While the additional loss absorbency requirement and effective banking supervision aim to decrease the probability of default of systemically important financial institutions, with effective resolution regimes it is aimed to resolve these institutions without creating risk in the financial system and imposing a cost to tax-payers. FSB published Key Attributes of Effective Resolution Regimes in 2011 to which countries should be compatible by 2015. Crisis management groups have been formed in which home and host authorities of systemically important financial institutions are represented. The work on forming recovery and resolution plans for these banks is ongoing. Write-off and conversion into equity (bail-in) of debt instruments given to the resolution authority is one of the outstanding principles of effective resolution regimes. To guarantee that financial institutions have these types of debt instruments in their balance sheets, work is being conducted on forming gone concern loss absorbing capacity (GLAC). The FSB is working on determining qualifying criteria for GLAC instruments and the amount of GLAC requirement. The other important principle of effective resolution regimes is cross-border recognition of resolution activities. In the current framework, creditors may ask to close contracts without considering the maturity of debts of financial institutions which enter into resolution, which cause a deepening in financial conditions. At this juncture, it is important to give contractual or statutory rights to authorities to guarantee temporary stay of especially derivative positions. In the forthcoming period, peer review on supervision of G-SIFIs will begin.

Additional to these studies, to enable continuity of core banking activities, to increase supervision effectiveness and to group risky activities separately, structural banking reforms have been initiated in some countries. With these reforms, work is continuing to separate deposit and investment banking activities. The scope of reforms is formed with the Volcker Rule in America, the Likaanen Report in the European Union and the Vickers Report in the United Kingdom. The FSB, IMF and OECD

has sent a questionnaire to gather information on national jurisdictions' planned or implemented structural banking reforms, as well as observed or expected effects in other jurisdictions' domestic markets of such reforms. According to the results of this questionnaire, it is planned to take necessary actions for negative impacts of banking reforms.

Although there aren't any systemically important financial institutions in our country, the subsidiaries of these institutions are operating. On the other hand, the work on identification of domestic systemically important banks continues.

Shadow Banking Reforms

Shadow banking is defined as credit intermediation activities outside of the regular banking system. The size of the shadow banking sector has reached about 70 trillion U.S. dollars; this amount is half of the banking system size. The shadow banking system contributes to financial deepening, but may yield some risks to financial stability. The shadow banking system, which is not subject to as tight regulation as banks are, engage in maturity transformation activities and is exposed to liquidity risk and risks arising from high leverage. The less regulated framework of shadow banking causes the sources of regular banking system to shift to shadow banking. Therefore, the FSB has founded 5 workstreams to regulate and supervise shadow banking entities and they maintain their studies.

One of the purposes of the regulations for shadow banking is to mitigate spillover effects between shadow banking and regular banking activities. These studies cover the framework of large exposures, banks' equity investments in funds and shadow banking-banking consolidation. Large exposures regulation was published to mitigate risks on banks arising from shadow banking activities. Banks are to be protected from big losses arising from counterparty defaults with the introduction of the large exposures framework. Large exposures is defined as 10 percent of Tier 1 capital by tightening the previous statement which is 10 percent of total capital. The

large exposure standard includes a general limit applied to all of a bank's exposures to a single counterparty, which is set at 25% of a bank's Tier 1 capital. This limit has been defined at 15% of Tier 1 capital for G-SIBs. In addition, banks' equity investments in funds regulations were published in December 2013. The equity investments are intended to ensure that the banks which invest highly leveraged funds hold higher capital. Also, a draft regulation is expected to be published for the consolidation framework between the banking and the shadow banking system by the end of 2014, making the activities of shadow banking subject to regular banking regulations.

The runs from money market funds (MMFs) in adverse market conditions are another risk factor in shadow banking. The current constant net asset value system triggers runs from MMFs. In such a case, investors who sell prior fund shares recover their money while others cannot. In order to prevent this, policy recommendations which convert constant net asset value to variable net asset value was published in 2012. The peer review on this issue which began in March 2014 is expected to be completed in April 2015.

Other shadow banking activities (other than MMFs) are divided into five economic activities and defined as collective investment vehicles, loan provision that is dependent on short term funding, intermediation of market activities that is dependent on short term funding, facilitation of credit creation and securitization based credit intermediation and policy recommendations for these areas are published. Activity based assessment is used more than entity based assessment in the determination process of other shadow banking activities. The regulatory framework was published in August 2013 for the determined activities. The information sharing process, which was developed in order to reach regulatory consistency across jurisdictions and to determine which regulations is used for which activities, will begin in May.

Securitization activities have had a negative impact on the occurrence and spread of risks during the global crisis stage. In November 2012, the IOSCO published standards to mitigate risks arising from securitization and to standardize and make the process of securitization transparent; the peer review process has begun. Organizations engaged in securitization activities are obliged to execute retention requirements which make organizations engaged in securitization hold some portion of securitized asset. Also, disclosure requirements were extended to increase transparency in securitization activities.

The regulatory framework for securities financing transactions (SFTs) which is used for funding purposes from banking to shadow banking entities was published in August 2013. The studies on the determination of haircuts to be applied for collaterals used in SFTs continue. Under the proposed regulations, government securities are outside of the haircut framework meaning that 0 percent haircut is applied to them. On the other hand, there are some ongoing discussions to expand the haircut framework to cover non-bank to non-bank financing and government securities. The regulations which cover haircut framework for SFTs is expected to be published in October.

Table IV.6.2
Shadow Banking Working Group Activities and Progress Level

Work Streams	Regulations	Progress
Spillover Effect Between Regular and Shadow Banking	Large Exposures (BCBS)	Final version is published in April 2014. Implementation will begin in 2019.
	Banks' equity investments in funds (BCBS)	Final version is published in December 2013. Implementation will begin in 2017.
	Banking-Shadow Banking Consolidation (BCBS)	Draft publication until the end of 2014.
Money Market Funds (MMFs)	Avoidance of runs (IOSCO)	Final version is published in October 2012.
Other Shadow Banking	Classification based on economical functions and regulation proposals (FSB)	Final version is published in August 2013.
	Information Sharing (FSB)	Process will begin in May 2014.
Securitization	Reduction of risks (IOSCO)	Final version is published in November 2012.
Securities Financing Transactions (SFTs)	Regulatory Framework(FSB)	Final version is published in August 2013.
	Minimum Haircut Framework (FSB)	Is expected to be published in October 2014.

OTC Derivatives Market Reforms

The regulations on OTC derivatives markets improve transparency in derivatives markets, mitigate systemic risk and protect against market abuse. Work on regulating these markets are performed under the title of reporting OTC derivative transactions to TRs, clearing through central counterparties (CCPs) where appropriate, requiring higher capital and margin for non-centrally cleared derivatives, and trading all standardized OTC derivative contracts on exchanges or electronic trading platforms. Although at the Pittsburg G-20 Leaders Summit, the reforms were to be finalized in 2012, they are behind schedule. However, significant progress has been achieved and work continues.

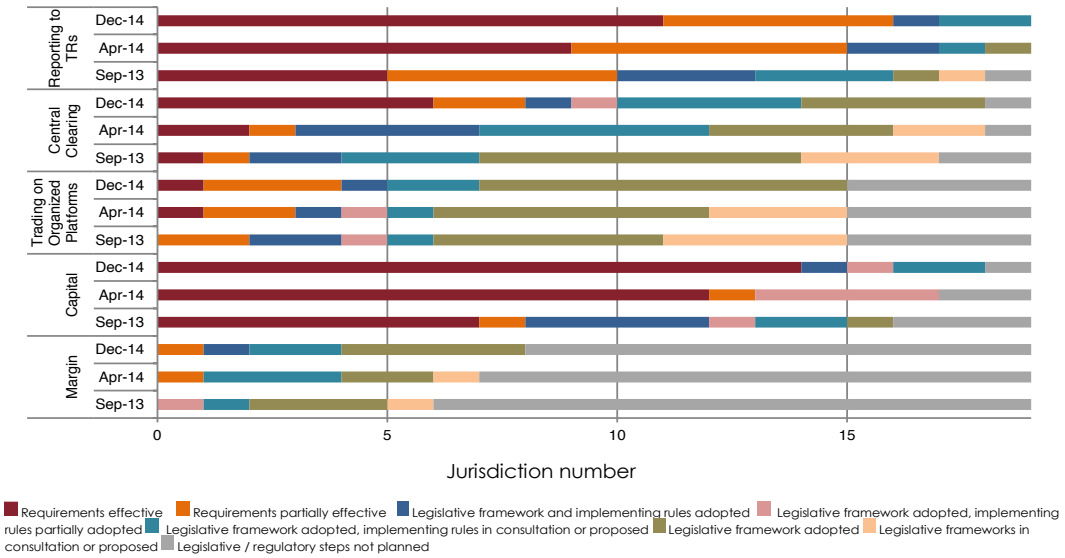
According to the seventh progress report on OTC derivatives market reforms, the most progress has been observed in reporting to TRs (Chart IV.6.1). On the other hand, various options for aggregating the data reported to TRs globally and sharing the data among countries are being studied. The feasibility study that analyzes the feasibility of options for data aggregation and assesses the legal and technical issues is expected to be published by the end of May. Jurisdictions continue to work on central clearing of OTC derivative transactions. Currently, countries with developed derivatives markets clear their derivative transactions centrally. However, when transactions are cleared through CCPs, risks concentrate on these entities. Therefore, the risk management of CCPs becomes an important issue. CCPs are expected to be compatible with the principles for financial market infrastructures (FMIs) published in 2012. Whether jurisdictions have completed the process of adopting the legislation and other policies implementing the principles for FMIs will be assessed in June 2014 and whether the adopted measures are complete and consistent with the principles will be assessed in the third quarter of 2014.

Standards on capital requirements for centrally and non-centrally cleared derivative transactions have been finalized. In this context, a new standard method with higher risk sensitivity for the calculation of counterparty credit risk has been developed and will be implemented in 2017. With the use of this

method, there has been a change in the calculation of capital requirements for transactions cleared through qualified CCPs[22]. Capital requirements for transactions cleared through CCPs will take effect in 2017. Moreover, with the credit value adjustment method, which was introduced under Basel III and considers the changes in the risk premia of the counterparty, higher capital is now required for non-centrally cleared derivative transactions.

The final rules for margin requirements for non-centrally cleared derivative contracts were published in 2013. To mitigate systemic risk and promote central clearing, there have been two types of margins: the initial and variation margins; minimum haircuts have been identified in the rules. The variation margin will take effect in December 2015. The initial margin will be implemented gradually starting from December 2015 to 2019. Moreover, there has been limited progress for trading standardized contracts on exchanges or electronic trading platforms.

Chart IV.6.1
OTC Derivatives Market Reforms Progress



Source: FSB OTC Derivatives Market Reforms 7th progress Report

22 CCPs which are compatible with CPSS-IOSCO principles for FMIs published in 2012 are called qualifying CCPs.

Restrictions due the national regulations in cross border transactions, different implementation times in jurisdictions and differences in market structures have led to uncertainty about the regulations to which OTC derivative transactions will be subject. It is important that cross border issues have been solved during the legislation of regulations in jurisdictions. A report related to the process of jurisdictions for comparing regulations and deciding equivalence of regulations to solve cross border issues will be published in September 2014. It is expected that the work related to methods for solving remaining cross border implementation issues in OTC derivative transactions will be finalized in November.

As a member of the G20 countries, Turkey is committed to implementing the derivative market reforms, and work in this area continues. The Central Clearing and Settlement Regulation was published and a draft regulation related to the implementation of central clearing in OTC derivatives markets is expected to be published in 2015. Moreover, regulations for reporting to trade repositories will be finalized in 2014 and will take effect in 2015.

IV.7. Financial Infrastructure

Financial market infrastructures play a key role in smooth functioning of the economy and financial markets, sustaining and developing financial stability. In addition to the financial crisis, new financial methods and instruments emerging from developing technology and increasing international trade developed the need for comprehensive regulation and supervision in the financial area. In this context, international cooperation indeveloping principles and standards regarding the financial sector and financial market infrastructures and countries' review of applications and regulations in this area became compulsory. The central banks have started to monitor financial market infrastructures more closely with the objective of achieving financial stability. Parallel to global developments in this area, the CBRT accelerated its studies regarding financial infrastructure institutions, especially payment systems.

Due to the contribution of an effective working payment system to financial stability, central banks undertake roles as operator, regulator, leader and overseer in this area. Any problem stemming from payment and securities settlement systems and starting at a certain part of the financial system could threaten financial stability by spreading to other areas. Safely and efficiently working payment and securities settlement systems is one of the most important factors of successfull implementation of monetary policies and well-functioning financial systems.

Among the CBRT's fundamental duties as stated in Article 4-I-f of the Law on the Central Bank of the Republic of Turkey No.1211, are to regulate the volume and circulation of the Turkish Lira, to establish payment, securities transfer and settlement systems, to ensure the uninterrupted operation and oversight of the systems established and to be established and to make the necessary regulations, to determine the methods and instruments including electronic environment that shall be used for payments. Accordingly, the **"Law on Payment and Security Settlement Systems, Payment Services and Electronic Monetary Institutions",** which is prepared under the CBRT's

responsibility by considering the need to regulate the payments area and strengthen legal infrastructure, in order to set a legal framework in accordance with the European Union Acquis, international standards and applications, was enacted by publication in the Official Gazette No. 28690 of 27 June 2013.

The Law No. 6493 regulates payment and securities settlement systems, payment services and electronic money institutions. The Law draws the framework of issues like functioning of the systems, oversight of the systems and the finality of settlement, by allowing non-bank actors to participate in the payments area, enhancing competition and financial inclusion in this area is aimed. Within the scope of the Law, the CBRT undertakes the responsibility of preparing secondary legislations regarding payment and securities settlement systems within a year of the Law's enactment. Secondary legislations are envisaged to come into force by the end of June 2014.

On the other hand, to ensure smooth settlement of transactions processed within payment and securities settlement systems, protective provisions are introduced with Article 10 of the Law No. 6493 and in accordance with Article 11, authorizing the CBRT to designate the systems which will be subject to relevant provisions. In this framework, the systems which will be subject to provisions in Article 10 of the Law are designated by the CBRT; the relevant announcement was published in the Official Gazette No. 28946 of 19 March 2014 and on the CBRT's website.

The payment and securities settlement systems functioning in Turkey are composed of: the Central Bank of the Republic of Turkey Electronic Funds Transfer (EFT) System, through which real-time settlement of transactions in Turkish lira is carried out between banks and between customers; the Central Bank of Republic of Turkey Electronic Securities Transfer and Settlement (ESTS) System, through which dematerialized and real-time transfer and settlement of securities are carried out in an electronic platform; the Interbank Cheque Clearing Houses Center (ICH), where clearing of cheques between banks is realized; the Interbank Card Center (ICC), where clearing of

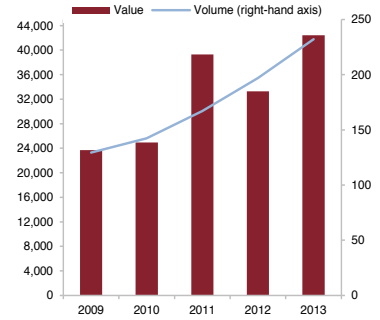
card-based payments is realized; the Istanbul Settlement and Custody Bank Inc. (Takasbank), where clearing and settlement of products traded at the Borsa İstanbul are carried out; and the Central Securities Depository of Turkey (MKK).

The EFT system, which is owned and operated by the CBRT, is a systemically important electronic payment system that operates under the principle of Real Time Gross Settlement-RTGS and realizes Turkish Lira payments. On the other hand, the ESTS system works in an integrated manner with the EFT and allows participants to realize transfer and settlement of securities with the Delivery versus Payment (DvP) principle. The number of participants in the EFT and ESTS systems was 48 and 49, respectively, as of May 2014.

The EFT system reached a dual structure through functional separation on December 7, 2012, as the "Turkish Lira transfer system between customers" which focuses on low-value costumer payments and "the Turkish Lira transfer system between banks" where interbank high-value market payments are realized. Both the transaction value and the transaction number increased in 2013. In 2013, the annual transaction value in the EFT system increased by 27.5 percent reaching TL 42,418 billion, while the number of transactions increased by 17.7 percent reaching 232 million when compared to the previous year (Chart IV.7.1).

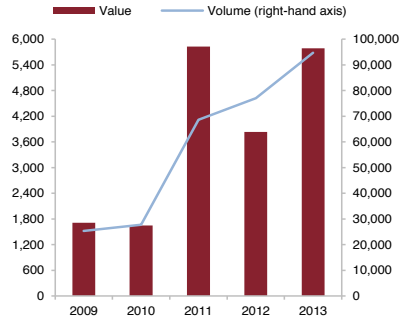
The ESTS2 system, which was developed by the CBRT and taken into service in July 2013, has been provided to reach a more flexible, modern and efficient structure. The ESTS2 system works in an integrated manner with the EFT system and allows participants to realize their transfer of funds and securities simultaneously with the Delivery versus Payment (DvP) principle. In 2013, the value of DvP transactions at ESTS2 system increased by 51 percent reaching TL 5,787 billion and the number of transactions increased by 23 percent reaching 94,752 (Chart IV.7.2).

Chart IV.7.1.
Volume and Value of the Annual Transactions in the EFT System[1] (TL Billion, Million)



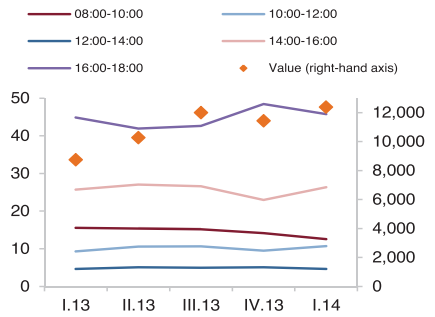
(1) The EFT System incorporates both Turkish lira transfer system between banks and Turkish lira transfer system between customers
Source: CBRT

Chart IV.7.2.
Volume and Value of the Annual DvP[1] Transactions in the ESTS System (TL Billion, Number)



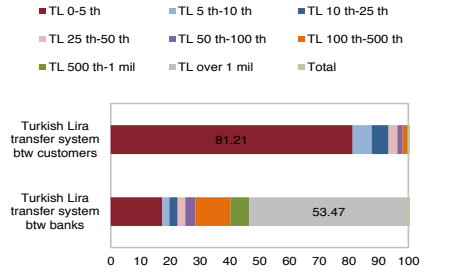
(1) DvP: Delivery versus Payment
Source: CBRT

Chart IV.7.3.
Break Down of Payments by Hours and Value of Transactions in the EFT System (Percent, Billion TL)[1]



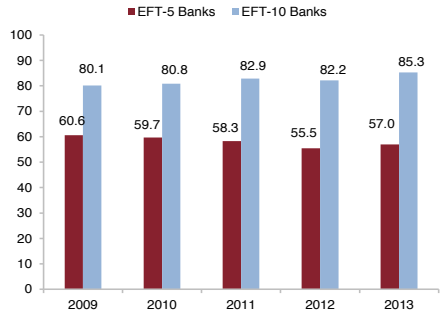
(1) The EFT System incorporates both Turkish lira transfer system between banks and Turkish lira transfer system between customers
Source: CBRT

Chart IV.7.4.
Break Down of Value of Transactions in the CBRT Payment Systems



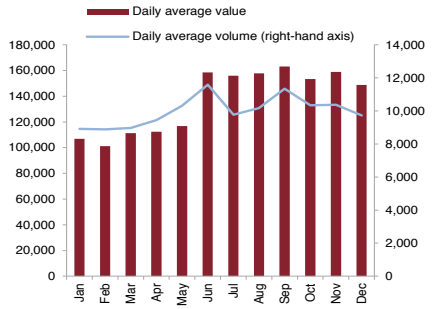
Source: CBRT

Chart IV.7.5.
Concentration ratio in EFT System[1] (Percent)



(1) CBRT transactions are excluded. The EFT System incorporates both Turkish lira transfer system between banks and Turkish lira transfer system between customers
Source: CBRT

Chart IV.7.6.
Daily Averages of the Volume and Value of Transactions within the Turkish Lira Transfer System Between Banks
(Number, Million TL)



Source: CBRT

In 2013, as expected and in accordance with the aim, high-value and time-critical payments were realized in the Turkish Lira transfer system between banks, while low-value retail payments were realized in Turkish Lira transfer system between customers (Chart IV.7.4). Of the total amount of transactions conducted via the Turkish Lira transfer system between customers, 81.2 percent were composed of transactions of TL 5,000 and lower, while 53.5 percent of the total amount of transactions conducted via the Turkish Lira transfer system between banks were composed of transactions of TL 1 million and higher.

The share of the top five banks conducting the highest number of transactions in the CBRT EFT system increased from 55.5 to 57 percent, while the share of the first ten banks increased from 82.2 to 85.3 percent in 2013 (Chart IV.7.5).

In 2013, the daily average number of transactions was 9,972 and the daily average value of transactions was TL 136.76 billion within the Turkish Lira transfer system between banks, while the daily average number of transactions was 918,294 and the daily average value of transactions was TL 32.91 billion within the Turkish Lira transfer system between customers (Chart IV.7.6 and Chart IV.7.7).

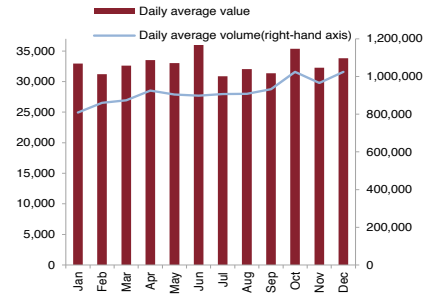
Cheque clearing operations are carried out by the Interbank Clearing Houses Center (ICH) and the subsidary clearing houses of the ICH under the oversight of the CBRT. The ICH, serving as a systemically important payment system, allows for the collection of cheques used widely in Turkey by different banks and thus decreases the money transfer movements as well as mitigates risks pertaining to money movements. By the end of 2013, the ICH had 41 member banks; out of these 41 banks, 4 were engaged in cheque clearing with physical presentation, whereas the remaining 37 were engaged in electronic cheque clearing without physical presentation.

As of end 2013, the ratio of cheque volumes that was processed through the ICH to the GDP was approximately 24 percent. It is of great importance to employ fast and safe

insfrastructures as well as to follow recent progress in technical hardware and software in a cheque clearing process that has such a high transaction volume.

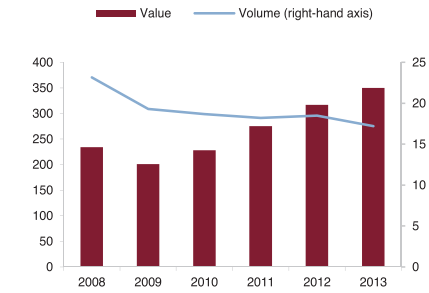
An analysis of the developments in the value and the volume of the cheques processed in the ICH shows that the rising trend of value since 2010 has been continuing, but the total volume of the cheques decreased in 2013 compared to the previous year. The volume of the cheques which was 18.5 million in 2012 decreased by 7 percent to17.2 million in 2013. In the given period, the value of the cheques increased by 10.4 percent and reached TL 349.9 billion (Chart IV.7.8). Accordingly, the average value per cheque, which was TL 17,137 in 2012, increased by 18.8 percent and reached TL 20,351 in 2013.

Chart IV.7.7.
Daily Averages of the Volume and Value of Transactions within the Turkish Lira Transfer System Between Customers (Number, Million TL)



Source: CBRT

Chart IV.7.8
Volume and Value of the Cheques Processed in ICH (TL Billion, Million)



Source: CBRT

Table IV.7.1 Distribution of the Number of Cheques Subject to Clearing by Value Tranches[1]

		TL 2,000 and below	TL 2,001-5,000	TL 5,001-10,000	TL 10,001-50,000	TL 50,001 and over
2009	TOTAL	5,976,435	7,349,054	4,119,649	3,609,740	516,811
	Cumulative Sum	5,976,435	13,325,489	17,445,138	21,054,878	21,571,689
	%	27.7	34.1	19.1	16.7	2.4
	Cumulative %	27.7	61.8	80.9	97.6	100
2010	TOTAL	4,514,432	6,820,043	4,096,030	3,747,536	609,976
	Cumulative Sum	4,514,432	11,334,475	15,430,505	19,178,041	19,788,017
	%	22.8	34.5	20.7	18.9	3.1
	Cumulative %	22.8	57.3	78	96.9	100
2011	TOTAL	3,015,125	6,213,519	4,360,484	4,617,123	844,014
	Cumulative Sum	3,015,125	9,228,644	13,589,128	18,206,251	19,050,265
	%	15.8	32.6	22.9	24.2	4.4
	Cumulative %	15.8	48.4	71.3	95.6	100
2012	TOTAL	2,293,110	6,001,317	4,786,831	5,586,134	1,063,299
	Cumulative Sum	2,293,110	8,294,427	13,081,258	18,667,392	19,730,691
	%	11.6	30.4	24.3	28.3	5.4
	Cumulative %	11.6	42	66.3	94.6	100
2013	TOTAL	1,534,022	5,019,588	4,567,462	5,883,415	1,203,369
	Cumulative Sum	1,534,022	6,553,610	11,121,072	17,004,487	18,207,856
	%	8.4	27.6	25.1	32.3	6.6
	Cumulative %	8.4	36	61.1	93.4	100

Souce: ICH
[1] Fractional cheque amounts, matching to the upper limit of the value tranches, are not included. The total number of cheques indicates the number of cheques presented to ICH before they are returned.

The share of low-value cheques has declined gradually. While the ratios of cheques presented to the ICH with a value of below TL 5,000 and TL 10,000 to the total value of cheques presented in 2012 were 42.0 percent and 66.3 percent, respectively, in 2013 these ratios became 36.0 and 61.1 percent.

An analysis of trends of the last 5 years indicates that the decline in the number of cheques below TL 10,000 presented to the ICH became higher than that in the total number of cheques. While the number of cheques below TL 10,000 decreased by 36.2 percent in the 2009-2013 period, the total number of cheques decreased by 15.6 percent in the same period. This decline in low-value cheques is attributed to the increase in the use of credit cards, mainly online banking and the electronic funds transfer system (Table IV.7.1).

Since the cheque clearing system operates based on the multilateral netting method, the participants' liquidity requirement arising from their cheque transactions declines. In the cheque clearing system, the debit and credit positions of participants are determined by multilateral netting following the finalization of the provision operations. In 2013, the netting ratio of transactions conducted via the cheque clearing system was 80.8 percent and the liquidity saving became TL 282.6 billion (Table IV.7.2).

Bank cards and credit cards, which have significant roles in payment instruments, have been used widely for shopping and money withdrawal purposes. The upward trend of card usage in shopping continues in parallel with banks' promotion campaigns and emerging new fields of usage thanks to technological and internet related advancements.

Tablo IV.7.2 Cheque Clearing System-Netting Ratio

	2009	2010	2011	2012	2013
Netting Ratio (%)	80.4	83.1	81.3	82.9	80.8
Transaction Volume (Billion TL)	200.8	228	275.4	316.7	349.9
Liquidity Saving (Billion TL)	161.4	189.4	223.9	262.8	282.6

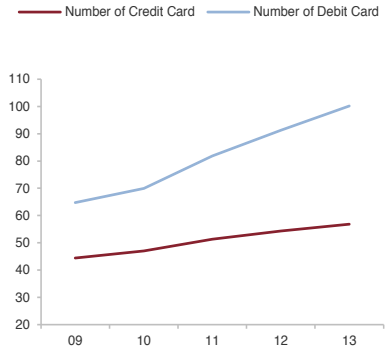
The upward trend in debit and credit card usage continued in 2013. The growth rate of the number of credit cards, which was 9.3 percent in 2011 and decreased to 8.2 percent in 2012, continued to decelerate and decreased to 4.5 percent in 2013, so the number of credit cards was 56.8 million by the end of the year. Similarly, the growth rate of the number of debit cards, which was 17.1 percent in 2011 and decreased to 11.5 percent in 2012, continued to decrease and became 9.8 percent in 2013; the number of debit cards reached 100.2 million by the end of the year (Chart IV.7.9). Depending on the upward trend in the number of debit and credit cards in Turkey, the number of point of sale (POS) devices and automated teller machines (ATM) has also increased. In 2013, the number of POS devices increased by 7.5 percent reaching 2.3 million and the number of ATMs increased by 15.6 percent reaching 42 thousand (Chart IV.7.10).

In 2013, the number of transactions carried out with credit cards increased by 8.4 percent year over year to 2.7 billion while the value of these transactions increased by 17.3 percent reaching TL 423.9 billion. There is a downward trend in the growth rate of both number and value of credit card transactions. In 2013, 96.7 percent of the total number and 91.2 percent of the total amount of credit card transactions were realized for shopping purposes (Chart IV.7.11).

BRSA's regulation on limiting the number of installments in credit card payments, which came into effect on 1 February 2014, has caused a decrease in the number of installment payments in shopping transactions. This regulation also encourages the use of credit cards as a payment instrument, rather than as a borrowing instrument.

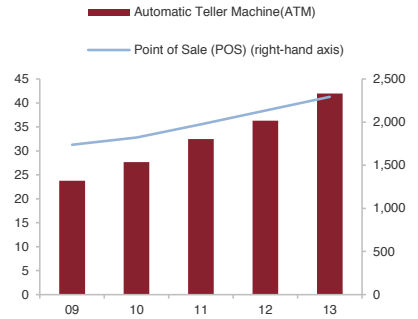
An analysis of debit card usage levels reveals that in 2013, the number of transactions carried out with bank cards increased by 15.4 percent reaching 1.5 billion, while the value of transactions carried out with bank cards increased by 17 percent reaching TL 363.8 billion. In 2013, the growth rate of both the number and value of bank card transactions decreased with respect to the previous year. While the ratios of debit card

Chart IV.7.9
Numbers of Debit and Credit Cards
(Millions)



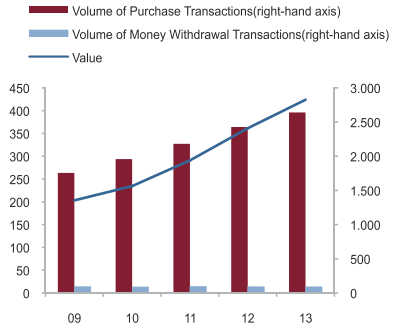
Source: CBRT

Chart IV.7.10
Numbers of ATM and POS
(Thousands)



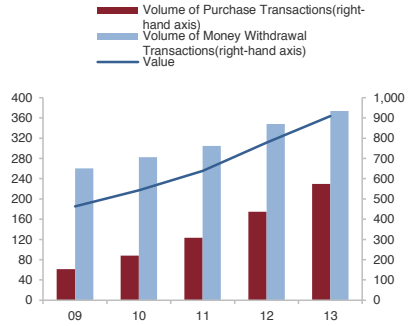
Source: CBRT

Chart IV.7.11
Volume and Value of Credit Card Transactions[1]
(TL Billion, Millions)



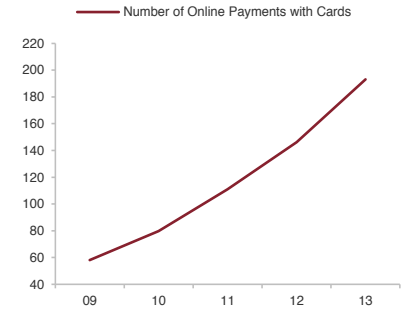
(1) Credit cards issued in Turkey and used in Turkey and abroad
Source: ICC

Chart IV.7.12
Volume and Value of Debit Card Transactions[1]
(TL Billion, Millions)



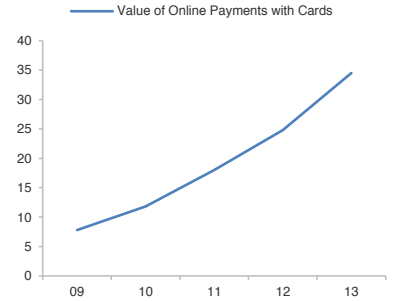
(2) Credit cards issued in Turkey and used in Turkey and abroad
Source: ICC

Chart IV.7.13
Number of Online Payments with Cards[1]
(Millions)



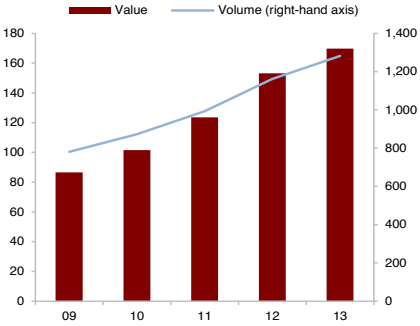
(1) Cards issued in Turkey and used in internet in Turkey and abroad
Source: ICC

Chart IV.7.14
Value of Online Payments with Cards[2]
(TL Billion)



((1) Cards issued in Turkey and used in internet in Turkey and abroad
Source: ICC

Chart IV.7.15
Volume and Value of Credit Cards Processed in the Card Clearing System
(TL Billion, Millions)



Source: ICC

transactions for shopping to the total number and value of debit card transactions were 33.5 percent and 5.3 percent in 2012, these ratios became 38.1 and 6.1 percent respectively in 2013 (Chart IV.7.12). Bank cards have also been preferred for shopping, especially low value shopping.

The increasing use of the internet and e-commerce has become one of the reasons pushing the use of payment cards in Turkey. In 2013, while the number of domestic and cross border payments with domestic cards increased by 32 percent reaching 193 million, the value of these payments increased by 39.1 percent reaching TL 34.5 billion (Chart IV.7.13 and Chart IV.7.14).

The number of transactions subject to the credit card clearing, which posted an annual increase of 17.1 percent in 2012, increased by 10.3 percent in 2013 and became 1,281.6 million. Meanwhile, the annual growth rate of the value of transactions subject to credit card clearing, which was 23.9 percent in 2012, decreased to 10.8 percent and the total value of transactions became TL 169.7 billion in 2013 (Chart IV.7.15). The number of transactions subject to debit card clearing, which increased by 29.5 percent in 2012, increased by 31.1 percent reaching 393.3 million in 2013. The value of transactions subject to debit card clearing increased by 23 percent reaching TL 18.9 billion in 2013 (Chart IV.7.16).

The card clearing system operates based on the multilateral netting method and therefore reduces the participants' liquidity requirements arising from card transactions. In 2013, the netting ratio of credit card transactions realized through the system was 74.1 percent and the liquidity saving relating to credit card transactions was TL 125.7 billion. On the other hand, for debit card transactions the netting ratio was 77.1 percent and the liquidity saving was TL 14.6 billion (Table IV.7.3).

The ratio of credit card transactions subject to clearing to the total value of credit card transactions, which is expected to fall parallel to the increased use of credit cards in the

issuer bank's own POS devices, was 42.4 percent in 2012 and decreased to 40 percent in 2013. (Chart IV.7.17)

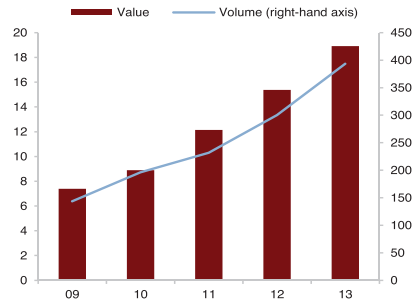
Takasbank plays a critical role in ensuring the smooth functioning of capital market transactions. The clearing and settlement of transactions traded at the Equity Market, the Emerging Companies Market, the Debt Securities Market and the Futures and Options Market operating under Borsa Istanbul are carried out by Takasbank and MKK.

Takasbank guarantees the fulfillment of transactions in various markets by acting as a buyer to sellers and as a seller to buyers among the parties of financial contracts listed in these markets and thus functions as a Central Counterparty (CCP) for those markets. Takasbank is currently acting as CCP for the transactions processed at the Takasbank Money Market (TMM), which ensures that the brokerage houses and banks with short-term liquidity needs or surpluses come together, and the Futures and Options Market, in which equity based futures and option contracts are traded at Borsa Istanbul.

In 2013, the total value of transactions carried out at the Takasbank regarding Borsa Istanbul's Equity Market and the Emerging Companies Market was TL 814.99 billion. As a result of multilateral netting, only TL 58.70 billion net cash transfer occurred for those transactions and TL 756.29 billion liquidity saving was achieved. The increase observed since 2008 in the total value of transactions processed at the Equity Market and the Emerging Companies Market of Borsa Istanbul, reverted to a decrease in 2012. Compared to the previous year, the total value of transactions carried out at these markets increased by 31 percent in 2013 (Chart IV.7.18).

Takasbank has an important role in financial markets due to these functions and provides "Cash Credit Facility" and "TMM" services to its participants to ensure the smooth functioning of the system and to prevent contagion of the problem to other participants via the system in case of temporary liquidity shortages of participants.

Chart IV.7.16
Volume and Value of Debit Cards Processed in the Card Clearing System
(TL Billion, Millions)



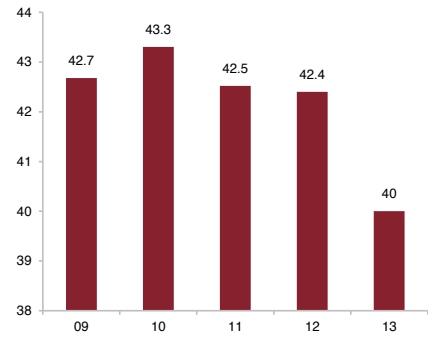
Source: ICC

Tablo IV.7.3
Card Clearing and Settlement System/
Netting Ratio (Percent)

	09	10	11	12	13
Credit Card Clearing and Settlement					
Netting Ratio. (%)	78.1	77.4	75.3	74.9	74.08
Transaction Volume (Billion TL)	86.6	101.4	123.6	153.1	169.7
Liquidity Saved (Billion TL)	67.6	78.5	93.1	114.7	125.7
Debit Card Clearing and Settlement					
Netting Ratio. (%)	65.1	76.6	78	76.3	77.1
Transaction Volume (Billion TL)	7.4	8.9	12.1	15.4	18.9
Liquidity Saved (Billion TL)	4.8	6.8	9.5	11.7	14.6

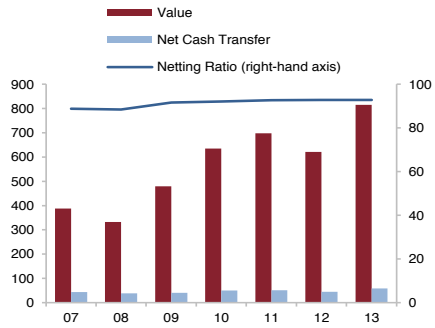
Source: ICC

Chart IV.7.17
Ratio of the Value of Credit Card Transactions Subject to Clearing Process to the Total Value of Credit Card Transactions (Percent)



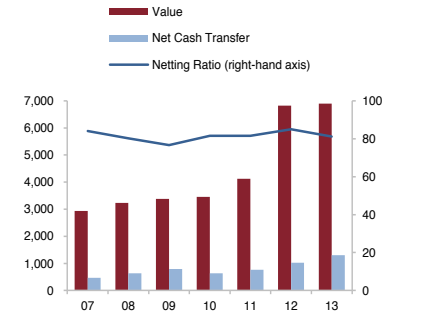
Source: ICC

Chart IV.7.18
Transactions Carried out at Borsa Istanbul's Equity Market and Emerging Companies Market
(Billion TL, Percent)



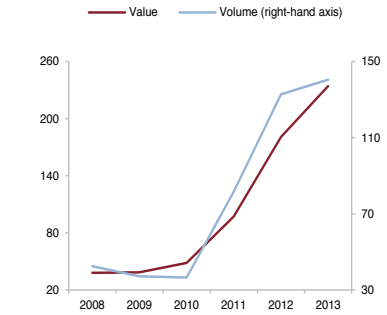
Source: Takasbank

Chart IV.7.19
Transactions Carried out at Borsa Istanbul's Debt Securities Market
(Billion TL, Percent)



Source: Takasbank

Chart IV.7.20
TMM Transaction Value and Volume
(Billion TL, Thousand)



Source: Takasbank

Within the context of "Cash Credit Facility", Takasbank provides credits -generally with overnight maturities- against collateral and within the limits previously determined by Takasbank to its participants. In 2013, a credit line was allocated to 7 brokerage houses for the first time and a credit line of 52 institutions which consists of 37 brokerage houses and 15 banks was reviewed.

Takasbank Securities Lending Market Directive and Code of Practice related to this Directive were published and Takasbank has provided central counterparty services in the Securities Lending Market since September 2, 2013. Furthermore, the Directive on Borsa İstanbul Futures and Options Market was approved by the Capital Markets Board on December 13, 2013, and in this context Takasbank started to provide central counterparty services in the Borsa Istanbul Futures and Options Market in the first quarter of 2014.

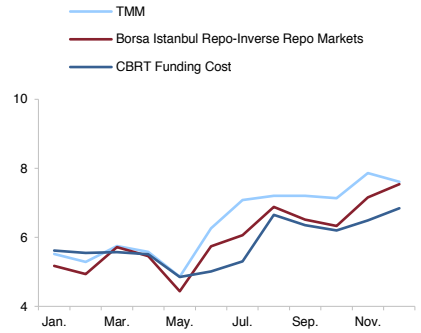
Transactions at the TMM, which plays a crucial role in the liquidity management of brokerage houses that cannot participate in the CBRT's Liquidity Management Facilities, has reached the highest value in 2013 ever since the start of operations in the market. In 2013, the transactions at the TMM, which was TL 180.8 billion value in 2012, increased by 29 percent reaching TL 234 billion value and 140.4 thousand volume. (Chart IV.7.20).

The increase in the transactions at the TMM mainly stems from the transactions conducted by TMM participants with respect to the liquidity conditions in markets as well as the increase in the number and transaction volume of investment funds and trusts, on behalf of which transactions are realized through the TMM. The share of investment funds and trusts, in the sum of the total transaction volume at the TMM increased by 37 percent reaching TL 175 billion in 2013. The number of investment funds and trusts making transactions at the TMM increased by 12 percent reaching 529 in 2013.

The competitive structure observed in interest rates of the

TMM and other markets during 2012 remained until May, 2013. However, after that date the TMM daily weighted average interest rates tended to diverge from the CBRT funding cost and Borsa İstanbul Repo-Inverse Repo Markets' interest rates due to the volatility of the risk premium.

Chart IV.7.21
Interest Rates at TMM-Interest Rates on Other Markets
(Daily Weighted Averages, 2013, Percent)



Source: Takasbank

The Central Registry Agency (MKK) is the central securities depository within the scope of the Capital Market Law and responsible for the central custody and dematerialization of capital market instruments, as well as electronically monitoring these instruments and the rights attached on them on an ownership basis. Currently, stocks traded on Borsa Istanbul, exchange traded funds, mutual funds, government debt securities, private sector debt securities, asset backed securities and sukuks are electronically monitored by the MKK. The clearing and settlement of capital market instruments traded on Borsa Istanbul is performed through the integrated system established between Takasbank and the MKK. Therefore, for uninterrupted and smooth settlement of these transactions, the Takasbank and MKK's systems have to operate in a coordinated manner. Additionally, the transactions of capital market instruments, which aren't traded on Borsa Istanbul are conducted between accounts opened at the MKK on a beneficial ownership basis through participants. In this context, in addition to being a central securities depository within the scope of the Capital Market Law, the MKK is regarded as a system operator within the scope of The Law No. 6493 on Payment and Securities Settlement Systems, Payment Services and Electronic Money Institutions due to the securities settlement system it owns and operates.

Table IV.7.4
Market Value of Securities in Custodian Accounts of MKK and the Number of Investors [1]

Capital Market Instruments	Market Value	Number of Investors [2]
Stocks [3]	511 billion TL	1,116,537
Government Debt Securities	183 billion TL	24,476
Mutual Funds	30.9 billion TL	2,766,512
Private Sector Debt Securities	36 billion TL	166,571
Exchange Traded Funds	183 million TL	3,956
Structured Products	12 million TL	3,306
Other Securities	2.9 billion TL	2,611
Total	**765 Billion TL**	**3,617,815**

(1) By year end 2013.
(2) Since any investor can own more than one type of capital market instrument,the sum of the number of investors based on the type of the instrument may not be equal to the total number of investors.
(3) The value of equities that are traded on Borsa Istanbul is 195 billion TL, whereas the value of equities that aren't traded on Borsa Istanbul is 316 billion TL.
Source: MKK

By year end 2013, there were 511 billion TL worth stocks belonging to 1.1 million investors and 183 billion TL worth government debt securities belonging to 24,476 investors in the custodian accounts of the MKK (Table IV.7.4).

IV.8. Steps Taken Towards Financial Stability

This chapter discusses the arrangements concerning financial stability introduced by the CBRT and the BRSA since the last Report dated November 2013.

Since the last Report, CBRT made the following regulations related to reserve requirements.

With the amendment dated December 25, 2013 in the **Communiqué on Reserve Requirements** to become effective as of January 17, 2014, a new approach has been adopted for the calculation of reserve base in order to simplify the structure of reserve requirements that are used as a monetary and macroprudential policy tool. Accordingly, instead of deducting specified items from the total domestic liabilities, only the items subject to reserve requirements will directly be taken into account while calculating liabilities subject to reserve requirements. Thus, immaterial items, which do not have a direct impact on the monetary policy but reduce the efficiency of the operational processes, have been excluded from reserve requirements coverage. At the same time, in light of the latest developments in global markets and with a view to supporting financial stability by ensuring a more effective functioning of the reserve options mechanism working as an automatic stabilizer, the reserve option coefficients for foreign exchange reserves held for Turkish lira required reserves have been increased by 0.4 for each of the last four tranches.

Besides, in the Inflation Report 2014-I, it has been announced that should the uncertainties and the heightening of the risk premium last for a long time, the economy may face a significant slowdown through the confidence and balance sheet channels and should such a risk materialize, the CBRT will pursue a stabilizing policy by using its policy instruments to reduce the intermediation costs of the banks. In this respect, with the amendment dated March 26, 2014 in the Communiqué on Reserve Requirements, remuneration of reserve requirements has been regulated in order to use as a policy tool, if needed.

On the other hand, In the Tenth Development Plan including the period of 2014-2018, published in the Official Gazette dated July 6, 2013, it is aimed to increase domestic savings which are the most reliable and permanent financing source, orienting these increasing savings towards productive investments and prevent wastage to ensure a high and stable growth dynamic. Hence, BRSA, which was specified as the institution responsible for keeping the increase in consumer loans under control with macro prudential measures and increasing the share of commercial loans within total loans by differentiating loan costs as well as other encouraging or deterrent measures, has been introduced several measures since the last quarter of 2013.

In this context, the legislative amendments made by BRSA in October 8, 2013 and explained comprehensively in the previous Report are summarized below:

With the amendments concerning provision legislation, loans granted via overdraft accounts dependent on saving accounts belonging to natural persons and loans granted to natural persons via credit cards in cash or for purchase of goods and services have been included within the scope of consumer loans. Furthermore, for the banks that have loan portfolio above the limits in the legislation, automobile loans, loans granted to natural persons via overdraft accounts and credit cards have also been included in the increased application in general provision ratios regarding consumer loans except for housing loans. Finally, general provision ratios are decreased for export and SME loans.

With the amendments concerning capital adequacy legislation, risk weigths applied to loans granted via credit cards in cash or for purchase of goods and services and other consumer loans except for housing loans have been increased. Additionally, within the scope of the Communiqué on Credit Risk Reduction Techniques, the export credit insurance policies provided from Export Credit Bank of Turkey are identified as a risk reducing collateral and these policies are taken into account as warranties ensured by the Central Government of the Turkish Republic.

With the amendments concerning credit cards legislation, the minimum payment amount has been gradually increased for the credit cards with limit up to TL 15,000 and with limit from TL 15,000 to 20,000. It has also been regulated that total credit card limit acquired from credit card issuing institutions can not exceed the four fold of the income of credit card customer and the credit card limit can not be increased for the existing credit cards with limit over four fold of the income. Moreover, when minimum payment amount is not paid three times successively in a calendar year, the credit card is closed to cash withdrawal and goods and services purchase and its limit can not be increased until all of the debt due is paid.

For the same purposes, other regulations made by BRSA since the previous Report are as follows:

With the amendment dated December 24, 2013 in the **Regulation on Accounting Applications and Financial Tables of Financial Leasing, Factoring and Consumer Financing Companies,** the general provision application of financing companies for the consumer loans except automobile and housing loans has been changed, in parallel with the application of banks. According to the new regulation, the exception for the automobile loans has been removed and thus, financing companies have to allocate general provision for the automobile loans, as in the other consumer loans except housing loans. This regulation has been effective on the date of publication and with a provisional clause that has been added to the regulation on February 7, 2014, the automobile loans granted before December 24, 2013 have been exempted from this application.

With the amendment dated December 31, 2013 in the **Regulation on Bank Cards and Credit Cards,** installment period for the goods and sevices purchase and cash withdrawal via credit cards, including installment of debt in exchange for a specified fee after purchasing and postponement of installment payments, has been restricted up to nine months. In addition, installment for the expenditures of telecommunication, jewelry, food and fuel is not been allowed. This regulation has been

effective on February 1, 2014. As a solution to some problems in the implementation of this regulation, with an amendment dated May 13, 2014 and took effect on the date of publication, installment for the gift cards, gifts cheques or any other products that do not include tangible goods and services purchase is not allowed, and installment prohibition is not applied to corporate credit cards, but general installment restriction, which is maximum nine months, is applicable to corporate credit cards.

With the amendments dated December 31, 2013 in the **Regulation on Credit Operations of Banks and Regulation on Procedures and Principles for Establishment and Operations of Financial Leasing, Factoring and Consumer Financing Companies,** it has been regulated that the maturity of automobile and automobile-warranted loans can not exceed 36 months and the maturity of other consumer loans except mortgage loans and other housing loans can not exceed 48 months. In addition, for the automobile and automobile-warranted loans extended or financial leasing transactions made for passenger car purchases, if the final billing value is TL 50,000 or below, loan amount can not exceed 70 percent of the billing value; if the final billing value is above TL 50,000, loan amount can not exceed 70 percent for the part of TL 50,000 of the billing value, and 50 percent for the part of above TL 50,000 of the billing value. Maturity restriction for consumer loans has been effective on the date of publication and loan to value ratio for automobile loans has been effective on February 1, 2014. These amendments are not applied to the loans extended before the publication of the Regulations and the restructured loans.

On the other hand, the regulations made by BRSA in the context of compliance to Basel III about own funds, capital adequacy, capital conservation and countercyclical capital buffers, and leverage have been explained in detail in the previous Report. For the same purpose, **The Measurement of Liquidity Coverage Ratio of Banks** has been published on March 21, 2014 and effective as of January 1, 2014. This regulation aims banks to have an adequate high-quality liquid assets in their balance sheet to meet the net cash outflow in 30 days, especially during periods of stress. Liquidity Coverage Ratio is calculated by dividing stock of high-quality liquid assets by net cash outflows. High-quality liquid assets include the assets that can be measured easily and certainly, used as a reliable source of liquidity even in stress conditions, not be pledged to secure or collateralise any transaction, have no legal or opertional restiriction to use, sell, transfer or liquidate. Net cash outflow is the amount of total cash outflows that exceed total cash inflows. Liquidity coverage ratio is calculated both on consolidated and unconsolidated basis, and in terms of both total and foreign exchange. Liquidity coverage ratio does not have a legal minimum for the first year, but will have a gradual transition period beginning from January 1, 2015 until Basel III being effective on April 1, 2019 where the ratio will not be less than 100 percent for total ratio and 80 percent for foreign exchange ratio.

Besides, with the Law on Consumer Protection published on November 28, 2013, any type of fee, commission and charge collected from consumers in exchange for the products and services offered by banks, other financial institutions extending consumer loans and card issuing institutions will be regulated by BRSA, with the consent of the Undersecretariat of Customs and Trade.

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Abbreviations

EU	European Union
USA	United States of America
ATM	Automatic Teller Machine
CII	Consumer Indebtedness Index
BCBS	Basel Committee on Banking Supervision
BRSA	Banking Regulation and Supervision Agency
BIST	Borsa İstanbul A.Ş.
BKM	Interbank Card Center
ICH	Interbank Cheque Clearing Houses Center
CDS	Credit Default Swap
CPSS	Committee for Payment and Settlement Systems
DEK	FX-Indexed Loans
GDDS	Government Domestic Debt Securities
DTF	Foreign Trade Financing
D-SIB	Domestic Systemically Important Banks
DvP	Delivery versus Payment
ECB	European Central Bank
EFT	Electronic Funds Transfer
TIC-EST	Turkish Interbank Clearing-Electronic Securities Transfer and Settlement
ENS	Extended Nelson Siegel
Fed	Federal Reserve System
FSR	Financial Stability Report
FCI	Financial Conditions Index
FSB	Financial Stability Board
FSI	Financial Strength Indicators
FX	Foreign Exchange
GLAC	Gone-Concern Loss-Absorbing Capacity
GMM	Generalized Method of Moments
EMEs	Emerging Market Economies
GDP	Gross Domestic Product

G20	Group of 19 Countries and the EU
G-SIFI	Global Systemically Important Financial Institutions
G-SII	Global Systemically Important Insurers
IAIS	International Association of Insurance Supervisors
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions
PDP	Public Disclosure Platform
AER	Adjusted for Exchange Rate
SEE	State Economic Enterprises
CC	Credit Card
CBT	Credit Bureau of Turkey
KMH	Overdraft Accounts
SME	Small and Medium-Sized Enterprises
MKK	Central Securities Depository of Turkey
OECD	Organisation for Economic Co-operation and Development
MTP	Medium Term Program
PMI	Purchasing Managers Index
POS	Point of Sale
MPC	Monetary Policy Committee
RWA	Risk Weighted Assets
RCAP	Regulatory Consistency Assessment Programme
ROA	Return on Assets
ROC	Reserve Option Coefficient
ROM	Reserve Options Mechanism
RTGS	Real Time Gross Settlement
RHA	Right Hand Axis
CMB	Capital Markets Board
CAR	Capital Adequacy Ratio
CBRT	Central Bank of the Republic of Turkey
NPL	Non-performing loan
TL	Turkish lira
TOKI	Housing Development Administration of Turkey

TMM	Takasbank Money Market
CPI	Consumer Price Index
TURKSTAT	Turkish Statistical Institute
T.C.	Republic of Turkey
VIOP	Borsa Istanbul Futures and Options Market
FX	Foreign Exchange
RR	Reserve Requirements

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